

**Marine Conservation from a First Nations' Perspective:
A Case Study of the Principles of the Hul'qumi'num of
Vancouver Island, British Columbia**

By

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Abstract

Evidence for the decline of marine biodiversity is being noted worldwide (Pauly and Watson, 2003). Indigenous peoples around the world have a key role to play in marine conservation efforts. With the collapse of many fisheries stocks, including stocks in the Georgia Strait of British Columbia, Canada, the Canadian Federal Government is pursuing conservation strategies such as Marine Protected Areas (MPAs). Section 35 of Canada's Constitution Act protects indigenous peoples' rights, such as the right to harvest natural resources for food, social and ceremonial use. Conservation efforts that potentially infringe upon Aboriginal rights secure a duty to consult and accommodate First Nations' interests on the Government of Canada. Indigenous peoples on Canada's West Coast often oppose the creation of MPAs as these have the potential to impact their indigenous rights. This opposition has contributed to the delay in the development of MPAs on the Pacific Coast of Canada. This research contributes to understanding of indigenous use of marine resources and how effective government proposed MPAs are in meeting the conservation goals and perspectives of the Hul'qumi'num peoples.

First Nations' marine conservation and management principles, goals and objectives are explored, through a case study of a Central Coast Salish indigenous group, the Hul'qumi'num. These approaches are compared to current government principles and strategies. Some similarities exist between the two, although there are fundamental differences that may be difficult to reconcile. The Hul'qumi'num worldview that everything is connected has some similarities to ecosystem-based management where humans are viewed as part of the ecosystem. However, in a Hul'qumi'num philosophy, humans are a fundamental component of the ecosystem, whereas ecosystem-based management recognizes humans as part of the ecosystem in order to better manage anthropogenic impacts. Simply integrating traditional ecological knowledge in current management efforts does not go far enough to address the goal of reconnecting Hul'qumi'num Mustimuhw (people) to the marine environment and resources. Attitudes towards permanent no-take zones are influenced by beliefs such as limiting aboriginal rights by closing areas to harvesting.

Participant support for permanent no-take zones was significantly increased if the no-take areas were proposed and managed by Hul'qumi'num. Community-based management, where First Nations have a legitimate role in managing may begin to address this gap. Further exploration of how to accommodate First Nations' principles, goals and objectives directly in marine conservation and management of marine resources will increase the success of marine conservation efforts on the Pacific Coast of Canada. This thesis provides the beginning of a foundation to bridge between current government conservation strategies and traditional management systems. The integration of social sciences and natural sciences in conservation efforts will increase the acceptance and success of conserving marine ecosystems.

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1. Introduction

1.1 *First Nations' Issues with Contemporary Marine Conservation*

Evidence for the decline of marine biodiversity is being noted world-wide (Pauly & Watson, 2003). Efforts to slow this decline have refocused conservation efforts on minimizing impacts from fisheries and preserving ocean habitat and species. There is a growing scientific consensus on the effectiveness of marine reserves, areas that are completely protected from all extractive activity, and marine protected areas (MPAs) on preserving ocean habitat. Marine reserves are a key component of global marine conservation and are often nested within MPAs, which are defined as "any area of inter-tidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical, or cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" (Kelleher, 1999:xi). A Scientific Consensus Statement on marine reserves and MPAs was signed by 161 leading marine scientists in 2001. This statement lists the ecological effects of marine reserves within and outside reserve boundaries, and of networks of marine reserves as increasing abundance, diversity and resilience of marine species and habitats (NCEAS, 2001). A marine conservation strategy that includes marine reserves and MPAs is considered an effective means for managing marine biodiversity, harvested populations of marine organisms and the overall health of the oceans (NCEAS, 2001).

In Canada, within the past decade, the Federal Government created new legislation aimed at developing a proactive approach to conservation through oceans management initiatives. The *Oceans Act* (R.S.C., 1996) was unveiled in 1997 and was followed by a planning document to guide oceans management, Canada's Oceans Strategy (Canada, 2002a). Despite these policies, marine conservation efforts in Canada have been hampered by government funding cuts, departmental re-organization, lack of cooperation between provincial and federal government agencies, shifts in government policy and opposition from First Nations where marine conservation efforts affect Aboriginal rights (Dearden, 2002). In the past two years, progress has been made by both federal and provincial governments to address internal issues, but the opposition from First Nations is still apparent. (For the

purposes of this document government refers to the Federal Government unless otherwise specified). Without support for government marine conservation efforts from First Nations, achieving marine conservation goals will be difficult.

Since colonial governments asserted sovereignty, First Nations in Canada have been seeking, and often litigating, for recognition of their Aboriginal rights. For First Nations in British Columbia, this includes litigating for their rights to harvest fish for food, social, and ceremonial purposes, rights to a moderate living (the right to earn enough for the basic necessities for living) from fishing and in many cases for the recognition of a right to wealth generating opportunities from engaging in commercial fisheries. To date many First Nations have not succeeded in having their aboriginal rights to wealth generating opportunities recognized. Currently, the Nuu-chal-nulth Nations of Vancouver Island, are going to litigation over their rights to fish commercially.

After a number of legal challenges to the Crown's authority, the priority of First Nations' rights protected by s. 35(1) of the *Constitution Act, 1982* was affirmed by the Supreme Court of Canada in *Sparrow v. The Queen* (1990). The Court also affirmed that the government has a fiduciary duty towards Aboriginal people and that this duty is trust-like rather than adversarial. The Government of Canada's fiduciary duty to aboriginal people is not however absolute, and must be reconciled with other government responsibilities (Barsh and Youngblood-Henderson, 2003) such as regulations for conservation, which must be justified. As a result, current policy attempts to provide contemporary recognition and affirmation of Aboriginal rights that are defined in light of this relationship. Thus, the Aboriginal right to fish is now an acknowledged and constitutionally entrenched provision, which provides for the preservation of the features of Aboriginal society that are unique and that define those societies as distinctive.

With Section 35(1) (*Constitution Act, 1982*) comes the burden on government to justify any infringement of Aboriginal rights. For example, when enacting legislation that negatively impacts on First Nations' ability to exercise their Aboriginal rights, the government must bear the burden of justifying that infringement (Borrows and Rotman, 1998). However, it is up to Aboriginal groups to

first prove a *prima facie* infringement of their Aboriginal rights (where individual Aboriginal rights are negatively affected). This proof of infringement of Aboriginal rights and justification has often led to long, arduous court cases.

In Eastern Canada, the Supreme Court of Canada case known as the *Marshall Decision* upheld the Mi'kmaq treaty right to earn a moderate livelihood from harvesting eels in 1999 (Davis and Jentoff, 2001); (*Marshall*, 1999). To date the right to a moderate livelihood from fishing has only been established for the Heiltsuk First Nation in Bella Bella, British Columbia under the *Gladstone Case*, which upheld that the Heiltsuk had an aboriginal right to trade in herring spawn on kelp from the Bella Bella region but limited such trade to what secures the modern equivalent of sustenance: the basics of food, clothing and housing, supplemented by a few amenities (*Gladstone*, 1996).

Recently, a significant case was won by the Haida Nation, which defined the government's duty to consult and accommodate Aboriginal title and rights prior to any potential infringement. The case (*Haida*, 2004) helped clarify consultation and accommodation requirements and may thereby reduce future litigation.

Understanding the legal framework of Aboriginal rights in Canada is necessary to appreciate why marine conservation must include the participation and agreement of First Nations if, on the ground or in the water, solutions are to be successful. An opportunity exists for governments and First Nations to go forward proactively to address marine conservation issues. This can only happen if first an understanding of the context of marine resources in the fabric of First Nations' cultures and identities is known.

Coastal First Nations in British Columbia exhibit a high dependence on marine resources for food, social, ceremonial and economic needs, (Suttles, 1990; FNPF, 2004). Impacts on the ocean environment, decreases in fish stocks, pollution of marine environments and over-fishing have resulted in direct hardship for coastal First Nations communities because of their cultural and nutritional dependence on marine resources (FNPF, 2004).

BC coastal First Nations maintain that they should have a co-management relationship with the federal government in the management of local ocean fisheries

such that their Aboriginal rights are met. Co-management has a number of definitions ranging from cooperative management, to community-based management to full sharing of authority (Borrini-Feyerabend *et al.*, 2000). The range of co-management options provides a broad spectrum of applicability to resource management. In general “co-management is a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair share of the management functions, entitlements and responsibilities for a given territory, area or set of natural features” (Borrini-Feyerabend *et al.*, 2000:1). The Haida Nation and Parks Canada have formed a type of co-management agreement for the management of Gwaii Haanas National Park Reserve and the Haida Heritage Site, located on Haida Gwaii (Queen Charlotte Islands). A management board consisting of Haida and government representatives oversees the operation of the National Park Reserve area. Although advisory in nature, the board provides an example of a negotiated relationship between government and a First Nation for management of a local region and its resources.

First Nations as stewards and long-time residents of a region have valuable traditional ecological knowledge, a continued food and cultural reliance on marine resources, and exhibit a socially-driven desire to move away from external economic dependence towards developing local economic opportunities that complement traditional activities. Traditional activities of gathering marine resources for food, social, ceremonial and economic needs have provided valuable traditional knowledge. Re-establishing access to resources for economic purposes within their traditional territories could help decrease reliance on federal funding and lower unemployment rates by creating jobs for First Nations. Commercial access to fisheries also increased the ability to meet sustenance requirements, “as a healthy commercial fleet resulted in healthy communities” (R. Harris, pers. comm., 2004).

First Nations communities often have the highest unemployment rates in Canada (Canada, 2001) and rely on federal transfer money to provide social services to their communities. The Hul’qumi’num, a Central Coast Salish group of the southeast coast of Vancouver Island, are no exception to this pattern. Table 1.1 provides the average income, unemployment rates and percentage of income from

Government Assistance for Aboriginal people in Hul'qumi'num territory. These figures are compared to non-First Nations living in the Cowichan Valley (Hul'qumi'num territory) in Table 1.2.

Table 1.1: Census of On-Reserve and Off-Reserve Income Statistics for Aboriginal People Living in the Hul'qumi'num Territory (Statistics Canada, 2001)

Category	Women		Men	
	On-Res	Off-Res	On-Res	Off-Res
Average Annual Income	\$11,450	\$17,314	\$11,904	\$22,775
Average % of Income from Government Assistance	41.1%	21.3%	41.1%	21.3%
Unemployment Rate	30.2%	19.7%	30.2%	19.7%
Ave. Income employed full time all year	\$24,254	\$30,790	\$29,952	\$44,158

Table 1.2: Census of Non-Aboriginal Income Statistics for People Living in the Cowichan Valley (Hul'qumi'num Territory) (Statistics Canada, 2001)

Categories	Women	Men
Average Annual Income	\$17,243	\$34,069
Average % of Income from Government Assistance	15.8%	15.8%
Unemployment Rate	7.1%	7.3%
Ave. Income employed full time all year	\$25,895	\$43,872

The alienation from traditional economies and resources, the Indian Reservation system and erosion of culture can lead to high social costs reflected by the economic indicators in Table 1.1 above. It is the First Nations' view that government management strategies have eroded the historical relationship between First Nations and marine resources by removing the management responsibilities from resource dependent communities and creating policies that are at odds with maintaining First Nations' rights (Weinstein, 2000).

What is called the marine resource and all its' interests by modern people, leaves out how important marine resources were to us in educating our young. In some families the whole life was dedicated to learning how to look after resources." (R. Harris pers. comm.)

In the past, government has focused on single species management for commercial fisheries, creating challenges in conserving biodiversity by not considering the relationships between species in a marine ecosystem. Resource-dependent communities on the coast of British Columbia have been seriously impacted by policies, such as, federal buy-backs and Individual Transferable Quotas (ITQ's) designed to reduce commercial fishing pressure as stocks declined. These policies have had the effect of concentrating fishing benefits in fewer, often corporate, non-local hands, away from small-scale community fishers that have a stake in the sustainability of the environments in which they live and depend on (Weinstein, 2000).

Recent government strategies for marine resource management include a commitment to an ecosystem-based approach, managing for sustainability and using the precautionary approach, or "erring on the side of caution" to guide management decisions (Canada, 2002a). Scientists are also recognizing that successful conservation efforts will only be achieved through community participation (Jentoft, 2000; CIT, 2001; Christie, *et al.*, 2002).

Despite these advances in science and government policy marine biodiversity around the world is declining. There is scientific consensus that marine reserves and MPAs nested within an overall marine conservation strategy can positively affect ecological parameters of abundance, diversity and resilience of marine species. In Canada, marine conservation efforts, including the establishment of marine reserves (no-take zones) and MPAs, are seen by First Nations as limiting their Aboriginal rights. Aboriginal rights to fish for food, social and ceremonial needs are recognized under Section 35(1) of the *Constitution Act* (1982). The government may only infringe upon these rights for conservation and that infringement must be justified. First Nations and government must work together to undertake marine conservation. Cooperative management relationships help further this goal, although First Nations continue to insist on a higher level of government-to-government management or co-management. Understanding marine conservation from a First Nations perspective is key to any such management relationship.

1.2 Study Goals and Objectives

1.2.1 Goals

The goal of this thesis is to examine the philosophical differences that lead to conflict between the parties over marine conservation strategies and to identify areas of similarity where government efforts are complementary to First Nation goals. Specifically, it attempts to identify First Nations' principles, goals and objectives for marine conservation, to highlight how traditional management practices can inform current marine resource management regimes, and to explore First Nations' attitudes and issues towards MPAs, using a case study of the Hul'qumi'num.

1.2.2 Research Objectives

The objectives of this research are:

- 1) To determine the Hul'qumi'num Mustimuhw marine conservation and management principles, goals, and objectives by answering the following questions:
 - a. What does the ethnographic literature determine as the traditional resource management systems related to marine resources for the Central Coast Salish and Hul'qumi'num peoples?
 - b. What are the contemporary Hul'qumi'num principles, goals and objectives for marine conservation and management?
 - c. How would Hul'qumi'num measure the success of a marine conservation strategy? and,
 - d. Are traditional management systems applicable to current marine management regimes?
- 2) To identify similarities and differences between Hul'qumi'num marine conservation principles and those used by government to establish and monitor MPAs and National Marine Conservation Areas (NMCA's).
- 3) To compare Hul'qumi'num goals and objectives to the strategy outlined in the National Marine Conservation Areas Act.

- 4) To examine Hul'qumi'num attitudes towards no-take areas in the marine environment.
- 5) To make recommendations on addressing Hul'qumi'num attitudes towards government marine conservation efforts.

1.3 Study Area – Coast Salish Marine Territory

For centuries the various groups of Coast Salish peoples have focused their lives around the Fraser River and the Gulf Islands in the Gulf of Georgia, the Strait of Juan de Fuca and Puget Sound, within an area generally referred to as the Northwest Coast in this study. Puget Sound and the Gulf of Georgia are relatively shallow productive water bodies characterized by large fresh water inputs from the Fraser River, the Skagit River, the Cowichan River and the various smaller streams and rivers entering the area. The Strait of Juan de Fuca connects the area to the open Pacific Ocean and serves as the national boundary between Vancouver Island in Canada and the Olympic Peninsula in the United States (Figure 1.1). The large fresh water inputs, shallowness and protected nature result in estuarine like conditions (Masson, 2002; Wallace *et al.*, 2002), which are well recognized as among the most productive ecosystem complexes in the world.

The Hul'qumi'num group of the Coast Salish, the subject of this study, occupy a region on the east coast of southern Vancouver Island, centered around the Gulf Islands in Georgia Strait from Saturna Island near the Canada/USA border, north to Denman and Hornby Islands, near Comox, British Columbia (Figure 1.2). Between these islands are many productive channels that result in increased velocity and water exchange through tidal currents. As a result, the area is highly productive, providing the flora and fauna that support complex marine ecosystems of the area (Wallace *et al.*, 2002). There are currently 12 species of marine mammals, approximately 200 species of fish, more than 100 species of marine birds, 500 species of plants including estuarine and 200 different species of seaweeds and greater than 1500 invertebrates that live in the marine regions of the area (GSA, 2004). This biological diversity and uniqueness of the region have led to the creation of a national park reserve encompassing the Southern Gulf Islands and a feasibility study for the

establishment of a National Marine Conservation Area under Parks Canada is underway.



(Map courtesy of Hul'qumi'num Treaty Group, Ladysmith, BC)

Figure 1.1: Traditional Territory of the Hul'qumi'num, Georgia Strait/ Puget Sound/ Strait of Juan de Fuca

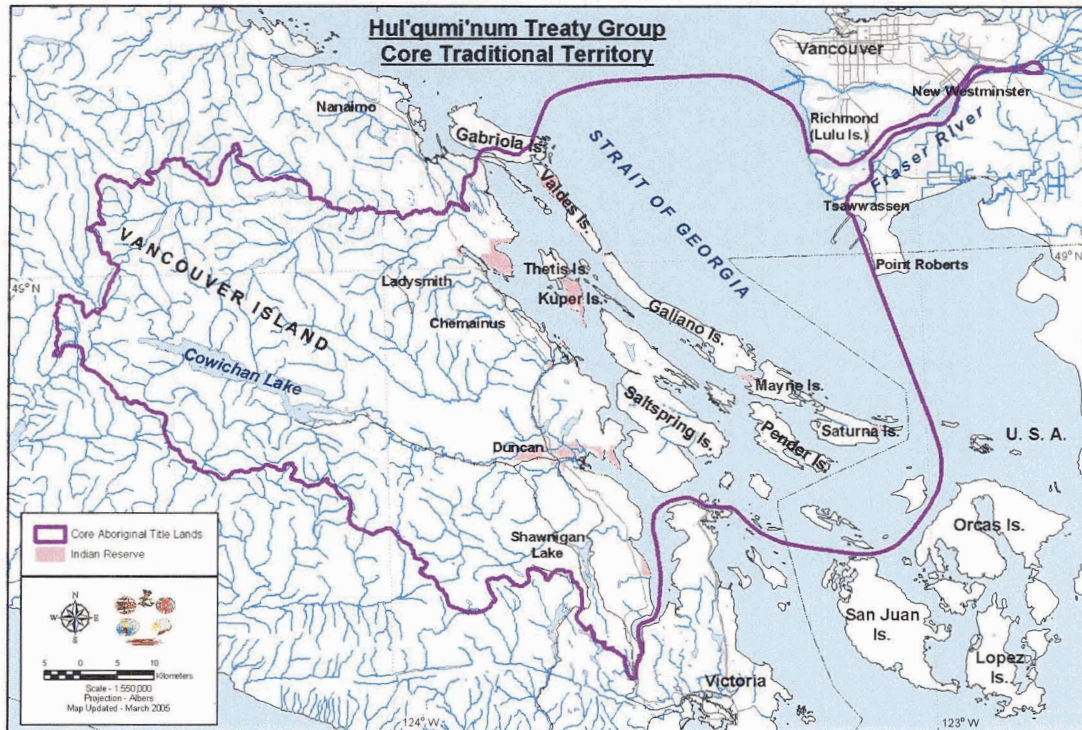
1.4 Ethnographic Literature Review¹

1.4.1 The Coast Salish

The Coast Salish peoples of the Georgia Basin, Puget Sound and Strait of Juan de Fuca have a long, time-tested relationship with marine resources of the region. The traditional ecological knowledge held by this group of people is extensive and relates to cultural experience and management of marine resources over

¹ The land and resource management systems, social institutions and worldviews of the Coast Salish are detailed and complex. The short description provided here is an interpretation of a few of the prominent ethnographies. Interested readers should refer directly to the ethnographic works cited for a more comprehensive understanding.

the past few thousand years (Suttles, 1974). The worldview, or philosophy, of the Coast Salish peoples that “everything is connected” symbolizes the respectful relationship to resources and governs Coast Salish stewardship and resource management. This relationship helped to define the Coast Salish cultures.



(Map courtesy of Hul'qumi'num Treaty Group, Ladysmith, BC)

Figure 1.2: Hul'qumi'num Core Traditional Territory

Archaeological evidence dates human occupation of the Strait of Georgia regions back at least 4,000 years (Ames and Maschner, 1999). The central Coast Salish can be divided into distinct language groups, Straits Salish and Halkomelem, occupying defined areas around the Georgia Basin. The Straits Salish occupied the southern Gulf Islands region and included the Sooke, Songhees, and Saanich groups on Vancouver Island and the Samish, Lummi, and Semiahmoo groups on the mainland (Suttles, 1987a). The Halkomelem consist of Cowichan, Chemainus and Nanaimo groups on Vancouver Island (the Cowichan and Chemainus along with the Lake Cowichan, Penelakut, Halalat and Lyackson are now represented together in the Hul'qumi'num Treaty Group and are the focus of this study and are referred to as

Hul'qumi'num) and the Musqueam, Kwantlen, Katzie, Chilliwack and other bands along the lower Fraser River on the mainland (Suttles, 1987a). Generally, the Coast Salish are described "as a large group of tribes occupying most of the area around Georgia Strait, the Strait of Juan de Fuca, Puget Sound and extending to the Pacific between the Olympic Peninsula and Willapa Bay" (Suttles, 1987a: 29). Coast Salish groups displayed ideologies and social institutions that provided incentives to accumulate prestige and promoted a socio-economic system that exhibited territoriality (Suttles, 1987a). These characteristics provide context to understanding the relationship between the Coast Salish and the resources they depended upon.

1.4.2 First Nations' Traditional Management

The indigenous peoples of the Northwest Coast of North America exhibited a system of resource tenure where productive locations were owned by individuals, restricted kin-group communities, multi-kin-group villages or larger ethnic groups in defined geographic areas (Onat, 1989); Thom, 2004). This structure is described as "communal residence group and corporate descent (family) group ownership" (Thom, 2004:271). Kin-groups consisted of extended families of brothers, cousins and brothers-in-law, and these groups claimed rights to defined local resources. Families of the bride and groom exchanged wealth and inherited privileges, which formed a link between communities. This system of exchange formed a social institution where productive fishing locations were owned, and wealth derived from this ownership was re-distributed among direct kin or kin-in law (thus within communities and between communities) (Suttles, 1987b). Ownership of productive locations was a means to achieve prestige (and good nutrition). Careful stewarding of the resources was necessary to maintain this prestige.

The Hul'qumi'num (or Halkomelem), a Coast Salish group, exhibited kin-group ownership where productive harvest locations for salmon, butter clams and horse clams, duck, and sturgeon were controlled by family groups (Richardson, 1982; Thom, 2004). Richardson (1982) states that ownership is often classified as individual but is generally on behalf of a larger kin-group. The tenure system is further described by Thom (2004) as a structured, descent-based system where land

and productive resource sites were owned and stewarded by individuals, on behalf of kin-groups. These sites were often enhanced through labour and technology, were easily defended and were often considerable distance from villages (Thom, 2004). The most productive areas (the ones producing the most wealth) were privately owned by Coast Salish kin-groups resulting in a source of wealth and prestige (Richardson, 1982). Richardson (1982) describes an increasing gradient of resource control as one moves farther north on the coast, with an increasing emphasis on descent-based kin groups. Suttles (1974) describes this gradient as resulting from decreasing variety in food types, higher variation in abundance, both local and seasonal, and possibly less fluctuation from year to year in comparison to locations northwards or southwards from Hul'qumi'num traditional territory. Increasing patchiness of resources supported the need for increased management and labour controls (more people were needed to process large amounts of resources in shorter time periods). Where resources were patchy, conservation of productive sites was likely an important resource management function (Richardson, 1982).

Other resources, such as shellfish, were important components of the Coast Salish diet, especially in times of salmon scarcity (Onat, 1989) and seaweeds were an important nutritional supplement (Turner, 2003). Shellfish (and their shells) were also used as a source of sustenance, trade, house foundations, riprap and drainage (Onat, 1989). Harvesting of shellfish took place mostly in the summer and supports the assumption of its use as a stabilizing food source. Swinomish (a tribal group in Puget Sound) people and others tended and "farmed" shellfish beds, increasing productivity and establishing ownership (Onat, 1989). Recent evidence of clam gardens has been found all through the Georgia Strait indicating a high degree of technological advancement and engineering skill by the central Coast Salish that likely contributed to the stable population much exceeding that of hunter-gatherer communities (Richardson, 1982) and challenge the notion that affluence and "social institutions only developed in the context of agricultural economies" (Thom, 2004:276). (A Chemainus elder stated that the term hunter-gatherer did not reflect that it was choice in traditional times that any sensible people would have made to

harvest from the sea and if resources were not so plentiful they likely would have tilled the land.)

1.4.3 Social Institutions

The Northwest coast indigenous groups developed advanced systems of subsistence including individuals (representing kin-groups) who obtained prestige or status within their respective communities that are beyond the general definition of hunter-gatherers (Suttles, 1987b). The adaptations exhibited by Northwest indigenous groups, manifested in their culture, were the means by which they adapted to variability in abundance, type of resource and seasonality of resources; they were not limited by technology alone (Suttles, 1987b). Organized labour and policies related to redistribution of wealth and prestige are characterized as important for “coping with abundance” (Suttles, 1987b:45). Redistribution of wealth as a function of the economy of Coast Salish is described by Suttles (1987b), and the role of gift giving, the relevance of the potlatch, the relationship between wealth and food and the relationship between subsistence activities and prestige-gaining activities form a single integrated system (Suttles, 1987c). The potlatch system was a social institution that re-distributed wealth among kin groups and between kin groups. Suttles’ description of the potlatch is as one of a group of mechanisms by which resources, primarily food, were shared among affinal communities in times of surplus. This resulted in an overall balancing of the socio-economic systems where one community could “bank” a temporary surplus as credit for food received by other communities in which supplies were not as abundant (Suttles, 1987c).

In the potlatch system heads of households are responsible for managing resources for the good of the community, and as a result management responsibility is vested in the users of the resource rather than in a set of professional managers with no direct vested interest (Weinstein, 2000). As resource abundance fluctuated, depending on environmental conditions, the potlatch promoted intercommunity cooperation through a redistribution of the bounty, by sharing knowledge on the state of the resources and in shifting extractive activities when necessary to maintain the health and viability of stocks. Suttles (1987c) is careful to point out that if amassing

wealth was the primary goal of individuals, the system could break down, as over successive years a less productive community would be unable to give back gifts in exchange for surplus food, and thus unbalance the system. The potlatch and careful management maintained a high level of food production and equalized the food consumption between communities (Suttles, 1987c). This allowed the system to be adaptive, both in a temporal and special sense, responding to variations in environmental conditions.

In general, management systems were tested in times of crisis (when resources were depleted or abundance was low) and social adaptation was linked to a conservation ethic and often resulted in institutional change (Berkes, 1999). Berkes (1999) suggests that a conservation ethic can be developed if a resource is important or limiting, predictable and may be depleted. Sustainability of human populations is conceptually linked to the development of mechanisms, both social and practice, that stabilize exploitation of resource in a way that respects the carrying capacity² of the environment (Gottesfeld, 1994). Traditional systems of management of the Coast Salish maintained harvest levels below carrying capacity by developing practices, such as the potlatch, that were incorporated into the culture and promoted conservation. Conservation oriented ideologies also formulated a sustainable relationship between humans and the environment.

1.4.4 Worldviews

The “*knowledge – practice – belief*” concept defined by Berkes (1999) describes the relationship of indigenous peoples to the land and the nature of subsistence activities. Local *knowledge* about specific species and ecological process combined with the way people *practice* their specific hunting, fishing or gathering activities and the *beliefs* in how they interact in nature and the nature of their relationship to the environment are combined and integrated in the culture and in traditional knowledge (Berkes, 1999). This *knowledge-practice-belief* concept highlights why ecological components of a culture cannot be separated from the social or the spiritual. Beliefs or world-views are therefore fundamental to the

² *The carrying capacity of a species relates to the ability of the environment to sustain a given level of a population.*

understanding of the role of traditional ecological knowledge in the management and stewardship systems of First Nations peoples. Indigenous cultures world-wide exhibit a worldview where humans are part of the environment, an ideology of respect for living things, and an ethic of reciprocity (Berkes, 1999; Gottesfeld, 1994). Berkes (1999) also describes four interrelated, or building upon one another, levels of traditional ecological knowledge that informed traditional management systems (see later Figure 1.4):

- *Local knowledge* of land and animals, including detailed knowledge of species and their life histories;
- *land and resource management systems*, where local knowledge was combined with appropriate practices, tools and techniques including an understanding of relationships between species;
- *social institutions* provided laws of practice and social ethic codes, likely including sanctions; and lastly,
- *worldviews* where perceived knowledge about the environment was combined with how the relationship between humans and the universe was conceived.

Understanding the relationship between traditional Coast Salish and their environment that led to elaborate marine resource management systems provides a mechanism to gather information on contemporary views of marine conservation.

Worldviews are hypothesized by Berkes (1999) to form through direct perceptions and observations and through a cultural conceptualization of the universe. The Cree worldview, for example, recognizes that resources cannot be “managed” by humans, which relates to their belief that animals will give themselves to the hunter, not that the hunter will take the life of an animal without “permission”. The hunter, through the continued use of resources, will maintain a strong connection and respect for the resources (Berkes, 1999). The inability to separate humans from nature and the respectful relationships that this worldview fosters are key in the understanding of relationships between indigenous people and the environment.

Coast Salish worldviews were no exception when compared to those of other indigenous peoples. Kew and Griggs (1991) describe religious beliefs of a community-of-beings in Coast Salish cultures as critical to understanding the First Nations worldview. One essential idea of this relationship is that humans are formed from the same essence as other life forms and may transform from one to the other (Kew and Griggs, 1991). The worldview that all beings are equal (or a community-of-beings) is relevant when considering management practices that relate to ecosystems. This worldview therefore positioned humans as part of the ecological system.

The sharing of the same essence between human and non-human life forms involved in indigenous worldviews also leads to a respectful relationship. This is described as the ethic of reciprocity (a state of mutual exchange) and includes the concept that all life exists on the same level including humans. Humans are able to take animal life for food because the animal gives itself to the human, the human reciprocates by respecting and honoring the animal (Kew and Griggs, 1991; Berkes, 1999). This practice translates well to a conservation ethic with the idea that reduced stocks of resources are the result of improper human behaviour, including over-harvesting, encouraging a long-term perspective and wise and judicious use of resources.

The Hul'qumi'num relationship with salmon is an example of their worldview of "everything is connected" (Table 2.1 in next chapter). Hul'qumi'num still believe that the salmon are people who live in the salmon world and come back to give themselves as food for humans (Kew and Griggs, 1991). In the Hul'qumi'num view, by treating the salmon with respect the salmon will respect you and provide the sustenance required by not avoiding being harvested by Hul'qumi'num³. The "First Salmon Ceremony" performed in Coast Salish culture is one mechanism by which Coast Salish people showed respect for salmon (Gunther, 1926; Gunther, 1928;

³ The Hul'qumi'num relationship to resources goes far beyond what I have described here. Ceremonies and teachings are integral to connecting ancestors, resources and "new" Hul'qumi'num and to becoming a complete person in the world. Understanding this relationship only comes from being Hul'qumi'num and these understandings are rarely shared with non-Hul'qumi'num. My limited knowledge has been derived from discussions with Hul'qumi'num elders and is presented here in an abbreviated form.

Amoss, 1987) where elaborate ceremonies for the first of the returning salmon included that of returning the bones of the salmon to the river. This practice provides an interesting examination of the role of indigenous peoples in maintaining the salmon. On an ecological level, the carcasses of returning salmon provide important nutrients to streams and help maintain the ecological processes of salmon producing rivers. By returning the salmon carcasses to the river, the impact of harvesting from the nutrient balance of the river was conceivably minimized.

The traditional fishing territory⁴ of the Hul'qumi'num extended as far north as Cape Mudge in the Strait of Georgia, south to Puget Sound, and includes the lower reaches of the Fraser River to Yale and west through the Strait of Juan de Fuca on the West Coast of Vancouver Island north past Port Renfrew (Figure 1.1). The area was rich in resources and was shared with many other First Nation communities who recognized Hul'qumi'num fishing sites.

Today there are over six thousand Hul'qumi'num members belonging to six First Nations with village sites in Cowichan, Chemainus, Kuper Island, Ladysmith, and Crofton areas (Figure 1.2). Hul'qumi'num people depend upon the resources of the sea for their food, social, ceremonial and economic livelihoods, although this dependence has been eroded significantly by many factors. Commercial fishing sustained Hul'qumi'num communities for many years. In the early to mid 1940's up until the early 1970's there were over twenty-six commercial fisherman native to the Chemainus First Nation village - now there are only two (Chemainus Elder, pers. comm., 2004). Many other community members in almost all of the other Hul'qumi'num villages made a living in fishing over this time period. Since that time the participation in commercial fishing by Hul'qumi'num has declined significantly, and today there are approximately five active commercial fishermen in total in the six communities. A healthy commercial fleet supported healthy communities, by having the capacity (fishing vessels, gear, and expertise) to fish. Hul'qumi'num access to resources for food, social, ceremonial and economic needs have since been seriously

⁴ The information on the traditional fishing territory of the six Hul'qumi'num Nations referenced in this report was provided by the Hul'qumi'num Treaty Group who derived the boundaries through extensive interviews with elders in the community. It reflects the areas where fishing and harvesting of marine resources concentrated. Many elders also talk of journeys much farther afield, beyond the main fishing territory described in Figure 1.1.

degraded. Access to marine resources, management and commercial fisheries are major components in treaty negotiations today.

1.5 Hul'qumi'num and the BC Treaty Process

Understanding the treaty process and how Hul'qumi'num see their rights being defined under treaty has a bearing on marine conservation efforts. The lack of treaties in BC has created uncertainty for both government and First Nations (BCTC, 2004).

The *Royal Proclamation* of 1793 stated that only the British Crown could acquire land in Canada from First Nations and that was to be done through Treaties (BCTC, 2004). Treaties were established across Canada with the exception of the majority of British Columbia (BC). First Nations in BC have been protesting, undertaking direct action and litigating the lack of recognition of aboriginal rights and demanding a treaty process. After a series of court cases the BC Treaty Commission was established by First Nations, the Government of Canada and the Government of the Province of British Columbia. The BC Treaty process revolves around tripartite political negotiations to attempt to establish new relationships between First Nations in BC and the Crown and is intended as an alternative to litigation and direct action. The Treaty process is broken down into six distinct stages:

- Stage 1: Statement of Intent to Negotiate
- Stage 2: Readiness to Negotiate
- Stage 3: Negotiation of a Framework Agreement
- Stage 4: Negotiation of an Agreement in Principle (AiP)
- Stage 5: Negotiation to Finalize a Treaty
- Stage 6: Implementation of the Treaty

The Hul'qumi'num member nations are in Stage 4 of the BC Treaty Process, the negotiation of an Agreement in Principle. An AiP is broken down into distinct chapters, agreed to in the framework agreement. The Fisheries Chapter is viewed by Hul'qumi'num as a significant chapter in the AiP due to the traditional and contemporary reliance on the marine environment. The Fisheries Chapter will address quantities of fish and marine resources to be secured for Hul'qumi'num food,

social and ceremonial use, the management relationship, and economic opportunities afforded through treaty. Hul'qumi'num are maintaining that a treaty right to a moderate livelihood be established. In addition, Hul'qumi'num Mustimuhw strongly assert that they have an aboriginal title interest in lands and submerged lands within their traditional territory.

1.6 Methodology

1.6.1 Research Design and Method

In order to arrive at a holistic picture of Hul'qumi'num perspectives on marine conservation a blend of qualitative and quantitative data collection methodologies was used. This blended approach allows the researcher to gather results in a quantitative form and then allows a richer understanding of the issues at hand using qualitative data (Henderson, *et al.*, 1999). The linking of these two forms of data collection allows the exploration of context and the testing of the validity of quantitative data. When both types of data collection are used in a sequential, encapsulated and linked manner it is possible to explore issues with increased depth (Henderson *et al.*, 1999).

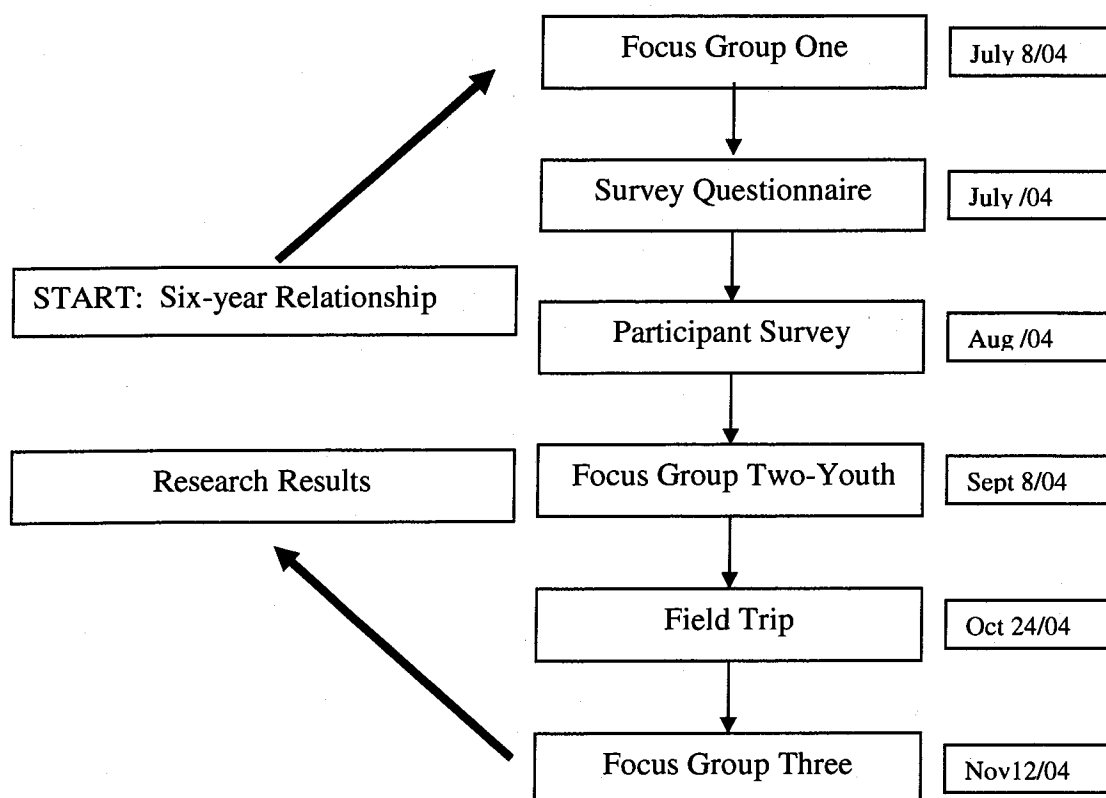
Researching in First Nations' communities is often challenging for both the researcher and community members (World Bank, 1996). First Nations are often resigned to provide their knowledge to "government like" individuals (researchers often fit this image in the eyes of community members).

The research conducted through this project was participatory in nature, increasing ownership and applicability of the results by involving community members in all aspects of the research process. This was important to address issues of cross-cultural research, as I am not of First Nations descent. Skelton (2001) recommends recognizing and addressing these issues through a process that: "recognizes and takes responsibility for differential power relationships between the researcher and those participating in the research; chooses methods that empower the 'researched' and that allow a depth of analysis and complexities to come forth; and challenges and transforms unequal power relationships" (Skelton, 2001:90). Participatory research methods increased the depth and relevance of the study by

involving Hul'qumi'num in all stages from the question generation, to the research process and interpreting the results. A research agreement was designed with the Hul'qumi'num to outline the expectations and responsibilities through the research process (Appendix 1). In order to understand the Hul'qumi'num perspectives on marine conservation both qualitative and quantitative methods were employed in this study through focus groups, questionnaires and participant observation.

As part of this masters research, a Hul'qumi'num research assistant was hired to help conduct interviews, provide interpretation of the questions using local terminology and to introduce members of the community whom I did not previously know. The research assistant participated in all of the interviews but was not present during the focus group meetings. Figure 1.3 describes the research process used in this study.

Figure 1.3: Research Process Flow Chart and Time-Line



The research topic for this study has evolved over a six-year relationship that worked towards a rounded understanding of the culture, the people themselves and the issues they faced. In 1998, I was hired by Cowichan Tribes as a fisheries biologist to interact with community members who had an interest in fisheries resources and conduct field reconnaissance work with elders to understand traditional use of resources. In coordinating a restoration project on the Cowichan River side channels for Cowichan Tribes, I was fortunate to have many opportunities to interact with community members and elders who lived near those side channels, with them teaching me about their relationship to the resources. This began an exploration to understand how Hul'qumi'num view "conservation" of natural resources, and led to this thesis. In 2002, I was seconded to the organization that represents the six Hul'qumi'num nations, including Cowichan Tribes, in negotiating a Treaty with the governments of British Columbia and Canada. As the Fisheries Consultant to the Hul'qumi'num Treaty Group I currently provide technical assistance for writing the fisheries chapter of the Agreement in Principle, whereby I am afforded regular opportunities to talk with many Hul'qumi'num elders and community members about their relationship to marine and fresh water resources. The exploration of how Hul'qumi'num view marine conservation continues now in an academic setting through this current research. The challenge has been in establishing a balance of understanding between Hul'qumi'num marine conservation perspectives and current marine conservation strategies.

The next section outlines the three methods (and the rationale and design of each method) used to collect data; focus groups; face-to-face questionnaire interviews; and, a field trip or participant observation.

1.6.2 Focus Group

Rationale

Focus groups were used to collect qualitative data and develop the survey questionnaire. Focus groups are "a one-off meeting of between 4-8 individuals who are brought together to discuss a particular topic chosen by the researcher who moderates the discussion" (Bedford and Burgess, 2001:121). The main purpose of

the focus group is to involve the intended audience in defining the problem to solve and identifying what information is needed to solve it (Salant and Dillman, 1994). Focus groups can also be used to increase the understanding of terminology and ways in which people talk about a specific issue (Hoggart, *et al.*, 2002) prior to the design of a questionnaire (Bedford and Burgess, 2001) or to help interpret the results of a questionnaire.

Bedford and Burgess (2001) discuss the benefits of focus groups as providing learning experiences to both researcher and participants; through open discussions participants' beliefs and opinions can be questioned or expanded by others. In-depth focus groups, where participants and researchers meet repeatedly, allow trust to develop, encouraging more open and honest discussion (Bedford and Burgess, 2001). The six-year relationship I have developed with members of the Hul'qumi'num community allowed the focus group discussions to be quite frank and open. Four of the focus group participants I have met with regularly, on other marine and fisheries issues, over the time frame associated with my employment as a fisheries biologist and habitat steward for Cowichan Tribes and as the fisheries consultant for the Hul'qumi'num Treaty Group.

Focus Group Design

In the research for this thesis I conducted three focus group meetings with various groups of Hul'qumi'num community members. The first focus group was used to assess the validity and reliability of the questionnaire. This technique provided direct input from community members who are knowledgeable about marine conservation in the design and testing of the questionnaire. The first focus group was intended to promote initial project buy-in from the technical staff of the Hul'qumi'num member nations who will likely use the results of the survey to identify issues and opportunities for their individual nations with marine conservation. The first focus group meeting was held at the Hul'qumi'num Treaty Group office with five key technical representatives from the Hul'qumi'num member nations, to test the existence of similar or convergent themes regarding traditional and contemporary marine resource conservation. Appendix 2 provides a summary of the

questions and discussion that took place in the first focus group. The main purpose of this meeting was to involve the intended audience in defining the problem to solve, and identifying what information was needed to solve it (Salant and Dillman, 1994; Bedford and Burgess, 2001; Hoggart, *et al.*, 2002). This focus group meeting was not intended to substitute for the quantitative survey as the participants were not selected randomly and are not representative of overall Hul'qumi'num estimates of attitudes towards marine conservation.

Part of the purpose of this first focus group was to also understand if traditional management practices were still in use in contemporary times. Using ethnographic works relating to Coast Salish management of marine resources, key themes were extracted from the existing literature, using the framework of analysis (Figure 1.4) developed by Berkes (1999), outlining worldviews, social institutions, land and resource management systems and local knowledge of land and animals .

Key themes and relationships between the data from the first focus group and ethnographic literature were identified and compared to themes found in Berkes (1999)(see Table 2.1 for this identification of key themes from focus group). Themes identified by the first focus group that were not included in the literature were noted, and a network to identify the relationship between convergent or similar themes was created. In some instances, focus group data resulted in the development of a hierarchy within each theme. The participants were asked a set of general questions relating to the themes identified in the literature and their views on marine conservation to provoke dialogue. The session was audio taped and transcribed. Information from this first focus group meeting was used to generate the survey questionnaire. Subsequent one-on-one meetings were held with each focus group member to discuss the survey questionnaire. In some cases wording of the questionnaire was changed to reflect suggestions on improving participant comprehension.

A second focus group session was conducted at the Hul'qumi'num Treaty Group office one evening for four hours with four Hul'qumi'num youth (aged 18-25). These individuals were chosen through referrals from other survey participants and because of their involvement with the Hul'qumi'num Treaty Group Youth

Committee, a group of youth who regularly meet to discuss issues related to the Treaty. Focus group participants were first asked to complete the same questionnaire administered to other participants (Appendix 3) without verbally communicating with the other participants. Each question was read out, response categories were explained and questions clarified if needed. Once all participants finished the questionnaire a general discussion on marine conservation was held (Appendix 4). General questions were then asked and responses were recorded on a digital cassette recorder.

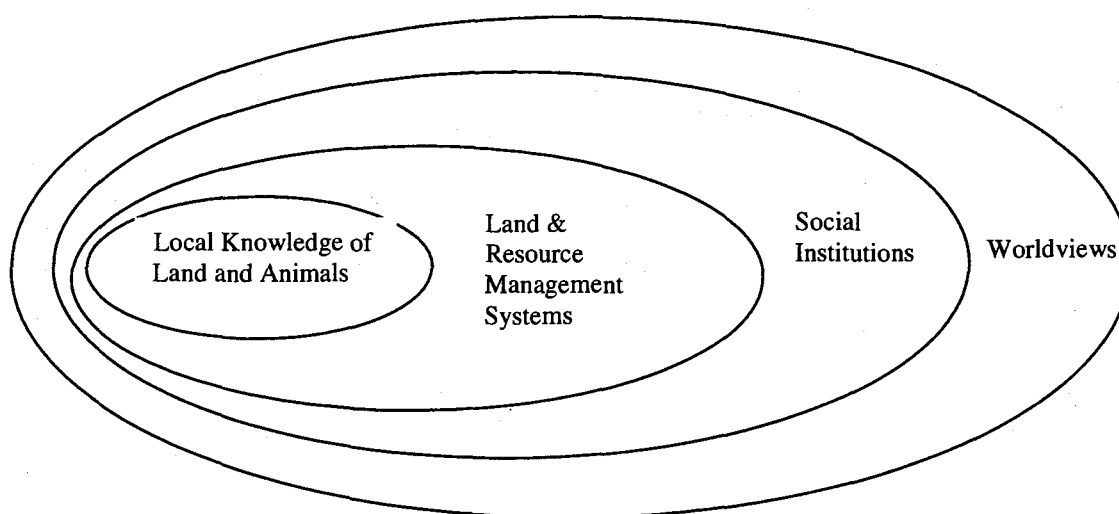


Figure 1.4: Levels of analysis in traditional knowledge and management systems (Berkes, 1999)

A third and final focus group meeting was held with six key participants, one from the original focus group and five who participated in the survey and field trip (described in the participant observation section below). The process used for this focus group is outlined in Appendix 5. The purpose of this meeting was to discuss the research findings in the survey, check validity of results, and discuss how Hul'qumi'num would manage a specific area within their territory. This allowed participants to hear the preliminary survey results first hand and provided an additional opportunity to get clarification on outstanding issues or understandings of marine conservation concepts.

Some researchers discuss potential limitations of focus groups being related to the moderator being solely responsible for choosing participants and prompting the

discussion and the interpretation of results (Hoggart *et al.*, 2002). There are also potential limitations related to the potential of one focus group participant to dominate the discussion, accounting for diversity in participant values and variability in moderator skills (Hoggart *et al.*, 2002). To address these limitations at least in part, an outline of questions for discussion at the focus groups was generated and approved by my thesis committee. When interpretation of participant comments was difficult, follow-up visits to each focus group member were made for clarification and validation of accuracy of interpretation.

1.6.3 Face-to-face Questionnaire Interviews

Rationale

Face-to-face interviews using a questionnaire were chosen as the primary method for gathering data in this study. Face-to-face survey techniques are used when there is no list of potential participants, no participant contact information or there is doubt that respondents will respond willingly or accurately using mail out surveys or telephone interviews (Salant and Dillman, 1994). Many Hul'qumi'num community members do not have access to a telephone or receive regular mail. Also, English is a second language for many, another barrier to using telephone or mail surveys. Face-to-face interviews provided an avenue to gain the trust of the respondent, obtain detailed information, question respondents for clarification of answers, control and standardize the interview process and address language barriers. Face-to-face interviews also yielded a high amount of data for analysis, which was important due to the relatively small sample size of 41 participants.

Questionnaire Design

The results from the first focus group were analyzed and a questionnaire was developed to meet the information needs of the study, including demographics, use of marine resources, attitudes, beliefs and desires regarding marine conservation. The questionnaire was developed in a booklet format using a modified Salant and Dillman "total design method" format (Salant and Dillman, 1994). The results of the literature review, focus group information and personal knowledge of Hul'qumi'num was used

to generate the variables in the survey. Survey questions were designed in a closed-ended format. Closed-ended questions used either a Likert-type scale, based on a set of statements to which the respondent indicates their agreement or disagreement, or semantic differentials, questions with bi-polar scaled answers to an attitude object (McDougall and Munro, 1994). Open-ended questions were also used to allow the respondent to discuss the issues further. A scaling technique was used to generate a series of opinions from each respondent on a single issue by including a number of different questions on the same issue and looking for patterns in responses (Salant and Dillman, 1994).

The questionnaire was divided into eight sections (Appendix 3). The first section and the last section provided demographic information about participants, including whether or not they were a traditional and/or a commercial fisher in the past, what marine resources they had harvested in the past year, how they would define marine conservation, what village they were from, if they currently resided on a reserve and how many people lived in their residence. The second section of the questionnaire related to participants' beliefs about the importance of marine conservation principles. The third section of the questionnaire examined participant goals and objectives for marine conservation. The fourth section explored participants' beliefs, attitudes and goals and objectives for marine resource management. The fifth section identified limitations for participants in accessing or conserving marine resources. The sixth section reviewed participants' attitudes towards different approaches to protecting marine resources. Finally, the questionnaire explored participants' attitudes toward the establishment of no-take zones in their traditional territory and reviewed if this opinion changed if Hul'qumi'num were the ones establishing no-take zones or if Hul'qumi'num were still allowed to harvest within the no-take area (essentially no-take for sports and commercial fishers).

The survey questionnaire was then tested with four of the five Focus Group one participants to assess the degree of comprehension and validity of the questions. Modifications to the questionnaire were made based on focus group participants' suggestions. The questionnaire was then administered with the help of the research

assistant to 41 Hul'qumi'num community members identified as having experience with fisheries. Each question in the questionnaire was read to the participant and clarification was provided if needed (see Appendix 8 for quantitative survey results).

Sampling Design

The goal of this study was to obtain information about the Hul'qumi'num perspectives on marine conservation. The sample population chosen for this study focused on highlighting community members who still maintained a relationship with marine resources, taking into account the impacts of colonization and the limitations to accessing marine resources that are affecting Hul'qumi'num community member relationship to marine resources today. A "snow-ball" method of sampling was chosen where survey participants referred other potential participants (Johannes *et al.*, 2000; Bedford and Burgess, 2001). This method is considered more reliable than random sampling for obtaining information from fishers about local resources (Neis *et al.*, 1999). Some limitations are apparent to this sampling design, such as the non-transferability of the results to the general Hul'qumi'num population (due to the non-randomness of the snow-ball sampling method) who may also use resources and impact upon conservation decisions in the community.

The initial potential participant list was generated through referrals from the first focus group. An attempt was made to survey participants from each of the six Hul'qumi'num communities. Forty-one surveys were conducted (thirty male and eleven female), the breakdown of participants by community is shown in Table 1.3. Chemainus First Nation and Penelakut Tribe appeared to have a higher percentage of community members still actively involved in fishing.

Table 1.3 Percent of Participants by Home Community Compared to Total Hul'qumi'num Community

Band Participant Belongs To	Reponse %	Hul'qumi'num Pop'n by Band	% Pop'n by Band
Chemainus	31.7	1058	17.9
Penelakut	24.4	766	12.9
Cowichan	24.4	3709	62.7
Halalt	14.6	193	3.3
Lyackson	2.4	178	3.0
Lake Cowichan	2.4	14	0.2
	100	5918	100

Analysis

Open-ended survey question results for each question were typed into a Microsoft word document and analyzed for patterns of responses. Closed-ended (or quantitative) survey questions were analyzed using SPSS (Statistical Package for Social Science software) and mean responses and standard deviations were generated for each response category where appropriate. Results were organized in table format and graphs were generated using Microsoft Excel to display results.

Limitations

The results of this survey cannot be applied to all Hul'qumi'num community members, based on the non-randomness of the sample, but they are likely indicative of general community attitudes towards marine conservation. The research assistant hired to help conduct the surveys was from the Chemainus First Nation community. This may have created a bias towards surveying in that community although efforts were made to balance out numbers of respondents from each Hul'qumi'num community. Another limitation of this survey is the potential cross-cultural differences that may influence community members when being interviewed. Having a Hul'qumi'num research assistant along to interpret the questionnaire if required, by participants mitigated this limitation. Although I have been working for the Hul'qumi'num member nations in various capacities for seven years, some community members do not know me. This could create a level of uncertainty for participants and may affect how they answered survey questions. Furthermore, participants who do know me might respond differently than if they didn't.

1.6.4 Getting out on the Land

Rationale

Participant observation involves spending time with community members in order to understand the context of people's experiences in their every-day lives and adds richness and depth to a study (Valentine, 2001). A one-day field trip to Saltspring Island, a Gulf Island in Georgia Strait, was conducted to provide an

opportunity for survey participants to relate marine conservation stories in a context of a marine environment. As a form of participant observation, the field trip provided an opportunity to observe Hul'qumi'num interacting and discussing marine conservation in a natural setting.

The field trip was conducted with eight participants, chosen from those who I interviewed in the face-to-face survey, to Saltspring Island to generate dialogue relating to traditional use and on-the-ground issues faced by participants (or the Hul'qumi'num community) today. Field trip participants were chosen based on familiarity with Saltspring Island and surrounding waters and to achieve a range of ages (3 youth, 2 middle age and 3 elders) and gender, although six of the eight participants were male. Notes were taken while participant interviews were video-taped and digitally recorded, later providing for a transcript of the day to be produced.

Analysis

The digital recording from the field trip was transcribed and reviewed by participants for accuracy and content. The video was archived at the Hul'qumi'num Treaty Group office. The transcript was coded, using the same coding as the focus groups, and themes were extracted. This information was then checked for validity in the final focus group with the same field trip participants.

Limitations

Not all of the field trip participants spoke about their relationship to marine resources during the field trip. In Hul'qumi'num culture it is not appropriate for younger people to speak about an issue if there are elders present, unless they have been expressly asked by the elders to speak. Most of the younger participants involved in the field trip did not speak during the discussions while on the field trip, therefore it was difficult to gather opinions from this sector of the participants. This limitation was discussed with one of the elders, who then provided an opportunity for the younger members to speak and convey their opinions during the last focus group session.

1.6.5 Ethical Considerations

Ethical considerations for research conducted during this project was addressed by following procedures established by the University of Victoria's Human Subjects Review process and through developing a research agreement with the Hul'qumi'num Treaty Group. Permission from the University of Victoria was obtained (Appendix 6) outlining ethical responsibilities and duties as a researcher. Participants also were asked to sign a consent form prior to being involved in either the focus groups or participating in the interview process (Appendix 7).

1.7 The Relevance of this Interdisciplinary Study to Geography and Environmental Studies and in Oceans Conservation Theory

The study of marine systems and conflict that arises around marine conservation has geographical (both spatial and social) and environmental foci. Geography as a discipline encompasses a wide range of spatial, social and physical components. Environmental Studies allows the exploration of complex problems encompassing historical and cultural realms through an interdisciplinary approach. Using an analytical focus, this study explores the environmental problems of marine resource management by documenting First Nations perspectives of marine conservation, allowing examination of current cultural values, political, social and economic influences. The interaction between the social and natural science components lends itself to the study of marine conservation exploring the relationship between the interactions of First Nations and their environment both on a spatial and social level.

This study focuses on identifying the differences and similarities between First Nations and current management systems and suggests ways to narrow the gap between them. It has a spatial geographical bearing in its relationship to where the resources being managed are located, a social geographical context related to the cultural aspects of First Nations dependence and connection to marine resources and an environmental bearing on understanding the elements of the conflict in how the resources are being managed. The foundations of First Nations dependence and connection reside in the cultural aspects of traditional management of marine

resources, the current societal values of economically maximizing the use of natural resources and the biological capacity of marine species to fulfill these demands. By bridging the gap between social and natural scientific research on marine conservation, this study provides an opportunity to extend geography and environmental studies by including insights from biological and social sciences using an interdisciplinary approach.

Expanding conservation theory to include the ocean realm provides new challenges. Ocean environments, being fluid, are not as easily understood as terrestrial environments by modern science. Furthermore, comprehensive historical ecosystem baseline information is limited for oceans (Wallace *et al.*, 2002; Jones, 2002). This makes ecosystem-based management difficult in the marine environment. Berkes *et al.*, (2000) maintain that traditional ecological knowledge, including an understanding of traditional management systems, social mechanisms developed to adapt to fluctuations in resource abundance, locally developed worldviews and cultural practices provide insight into managing ecosystems. As First Nation peoples on the Northwest Coast of North America, including the Coast Salish, adapted, managed their marine resources and survived in this environment for centuries, conservation of marine ecosystems can be informed through understanding First Nations' management of marine resources and perspectives on marine conservation.

1.8 Thesis Organization

The purpose of this thesis is to provide information regarding First Nations' perspectives on marine conservation by exploring two discrete but related components, each in a separate chapter. Each chapter, as a stand-alone paper, outlines a separate introduction, methods, results, discussion and conclusion.

This chapter has provided details on the purpose of the research, describes the study area, provides information on the Coast Salish First Nations and their traditional resource management practices and outlines the methodology. Using the Hul'qumi'num as a case study Coast Salish group, Chapter 2 explores Hul'qumi'num principles, goals and objectives for marine conservation and management and compares these to government principles outlined in the *Oceans Act* (R.S.C., 1996),

Canada's Ocean Strategy (Canada, 2002a) and the *National Marine Conservation Areas Act* (2002b). Traditional resource management strategies are examined as to how they can inform current government marine resource management regimes. In Chapter 3, Hul'qumi'num attitudes towards MPAs as a marine conservation strategy are explored. Finally, Chapter 4 summarizes overall conclusions related to First Nations' perspectives on marine conservation and inconsistencies between government strategies and First Nations' views. Chapter 4 also examines a conservation concept proposed by Hul'qumi'num called Hul'qumi'num Management and Harvest Areas, reviews progress on the establishment of Race Rocks Marine Protected Area that involves First Nations co-management, and provides a short synopsis of potential similarities between First Nations and government principles for marine conservation. Some redundancy between the introduction and individual chapters will be evident, as the organization of the thesis into discrete papers makes this a necessity.

2 A Comparison of the Hul'qumi'num First Nation's and the Government of Canada's Principles, Goals and Objectives for Marine Conservation

2.1 Introduction

Scientists concur that marine ecosystems are being degraded at an alarming rate, yet estimates suggest that currently only 0.01% of the world's oceans are under effective protection (Pauly *et al.*, 2002). The disparity between the relative areas of terrestrial and marine habitat protected is thought to be due primarily to a generally held view of the resources of the sea as open access (Cocklin *et al.*, 1998). The perception of the vastness and limitlessness of the ocean and its resources has compounded the problem. Marine ecosystems have been altered through a number of anthropogenic effects to the point where they are no longer recovering at the rate they are being damaged (Palumbi, 2002). The recent recognition that fish populations in oceans are in trouble has led to further interest in protecting marine and coastal environments. There is, therefore, good reason why marine conservation is at the forefront of oceans research and why coastal countries, including Canada, are beginning to move towards ocean conservation strategies and the development of more marine protected areas. However, a wide array of solutions and much debate on how to effect marine conservation exist.

Government-based, or "top-down" conservation is often concerned with global issues, national policies and strategic plans using institutions and natural science-based knowledge to set conservation principles, strategies and enforcement targets. Community-based, or "bottom-up" conservation involves citizens through participation and emphasizes equal access rights and social responsibility (Western, 2001). Western (2001) suggests that natural science bridges the gap between both approaches by designing criteria and indicators to assess conservation while developing accountability strategies allowing communities to undertake sustainable development of resources. However, a blended approach of government-based, community-based, natural science and social science must be created for effective conservation (Dearden, 1996). Berkes (2004: 624) refers to this blending as "bridging fields that span natural and social science thinking."

This chapter explores the principles, goals and objectives for marine resource management and conservation of the Hul'qumi'num, a Coast Salish indigenous people on Canada's West Coast, as a "bottom-up" approach. The intention is to develop an understanding of the differences and similarities between western conservation science and traditional indigenous systems of conservation with the goal of finding common ground in the pursuit of a more complete and effective conservation science.

2.2 Literature Review

2.2.1 Parks and People

Western ideologies for marine conservation are not necessarily in harmony with indigenous concepts of conservation (Alcorn, 1993), although some similarities exist. In an early paper, Dasmann (1976) postulates that there are two types of people, or life strategies, making up the human race, "ecosystem people" and "biosphere people". Ecosystem people are traditional indigenous people, who are dependent upon one to three ecosystems for their survival, while biosphere people are tied, in a global sense, to many different ecosystems world-wide, extracting resources as needed and moving on (figuratively) once they are depleted, often damaging ecosystems beyond repair (Dasmann, 1976). This early theory holds merit in that a people dependent upon the resources of their surroundings (i.e. ecosystem people) must take care of those resources to prevent over-harvesting and loss of use. However, Dearden *et al.* (1996) point out that ecosystem people must not be considered as static cultures. Conservation areas, such as parks, are often created on the traditional lands conserved by ecosystem people who follow traditional conservation practices. Ecosystem people still have the potential to impact upon their environment and will increasingly do so as they are drawn into global society. Conflict results, as the activities of cultures in transition from ecosystem to biosphere people begin to affect the environment, and western managers seek to minimize change. Dearden *et al.* (1996) endorse a more dynamic view of ecosystem change resulting from these activities but suggest a "Limits of Acceptable Change" framework, where the changes to the ecosystem are only acceptable to the degree that

they do not impair ecological function, be adopted. Recognition of such limits can be negotiated between managers and local peoples. However, consideration should be given to maintaining traditional practices in protected areas where these practices have a net benefit to sustaining resources (Baird and Dearden, 2003). Coast Salish First Nations maintain their aboriginal practices were responsible in part for the vast wealth in resources of the area. The traditional cultivation of resources is currently being documented for the Hul'qumi'num traditional territory by Duer and Turner (in press).

Dearden (1996) describes "original" and "modern" approaches to conservation as often being in conflict with one another. Polarization between a science-based, state-driven-and-managed protected-area-focused approach to conservation ("modern") against a community-based, indigenous, people-oriented approach ("original") is apparent in many tropical countries, such as Thailand. Dearden (1996) suggests that a new "post-modern" approach be adopted where alternative approaches to conservation are explored that are more flexible in terms of importance of protecting an area, using both indigenous and scientific knowledge, and providing opportunities for community involvement and management where appropriate.

In their book Fisheries that Work: Sustainability through Community-based Management, Pinkerton and Weinstein (1995) explore socio-political problems in fisheries management, provide case study examples from around the globe and summarize how problems in fisheries management are addressed in the case studies (Pinkerton and Weinstein, 1995). Gardner (2001) discusses the importance of developing co-operative management arrangements (where management duties are shared but authority rests with the Crown) with First Nations communities for protected areas in Canada. Jones and Gu nette (2002) discuss co-management as a critical element to the success of marine protected areas (MPAs). There are many definitions of co-management providing a broad spectrum of applicability to resource management. "Co-management is a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair share of the management functions, entitlements and responsibilities for a given territory, area or set of natural

features” (Borrini-Feyerabend *et al.*, 2000:1). Community-based management is also an avenue to consider based on the supposition that “*healthy fish stocks require healthy communities*” (Jentoft, 2000).

Many examples exist around the world where indigenous people manage their resources, either in concert with governing bodies or on their own. Finding ways to implement aspects of these traditional systems in managing marine resources will increase the palatability of MPAs and involvement of indigenous peoples. Indigenous people world-wide have managed and conserved marine resources for centuries by employing systems of marine tenure and customary practices (Berkes, 1985). Marine resources in South Pacific communities have defined cultures through the use of customary marine tenure systems (CMT) (Lam, 1998). Customary Marine Tenures (CMTs) are being considered more widely as a vehicle for improving fisheries management and enforcement. Territorial Use Rights in Fisheries (TURFs) were developed by the indigenous peoples of Oceania (a large group of islands in the South Pacific, including Melanesia, Micronesia and Polynesia) to conserve marine resources (Schug, 1996). This system was abolished during colonization, which resulted in open access to resources. The revival of TURFs would enhance efficiency of inshore fisheries management, improve incomes for local village residents and reinforce cultural values (Schug, 1996).

In Japan, community-based fisheries management is achieved through community ownership of resources that are sedentary or more local in nature. Management is conducted in a cooperative, where place of birth is a prerequisite for membership in a given management unit (Weinstein, 2000).

Recent policy initiatives in New Zealand are meant to enable the Maori tribes to rehabilitate and manage their local fisheries according to their customary values and practices using two types of designated fishing areas, the *taiapure* and *mataitai* (Memon *et al.*, 2003). *Taiapure* are local fishing areas that have special seafood, spiritual and cultural values for the Maori. These areas are established to provide a greater say for Maori in their management in collaboration with other stakeholders. This role is seen as advisory to the New Zealand Minister of Fisheries (Memon *et al.*, 2003). *Mataitai*, a second type of designation for fishing areas of special significance

are in effect a co-management arrangement between the Maori and the New Zealand Government, where Maori have the authority to authorize fisheries for cultural purposes and can regulate harvests within the area. These areas provide an authorized management role for the person in the Maori tribe that holds the traditional resource management authority, and generally exclude commercial fishing.

Another example of MPA co-management is found in the Philippines. Small-scale fishermen in the Philippine Archipelago were experiencing declines in catch, coral reef ecosystems were being degraded and destructive fishing was continuing. Numerous marine reserves were established in an effort to slow declines and protect coral reefs. The most notable, adjacent to Apo Island, has had significant success as an MPA and includes a no-take zone. The community of fishers living on Apo Island are directly involved in the management and enforcement of the MPA and have played a key role in its success (Russ and Alcala, 1996a; Salm *et al.*, 2000; White *et al.*, 2002; Sobel and Dahlgren, 2004). Another Philippine MPA around the island of Sumilon was not as successful in recovering density, biomass and species richness as the Apo Island MPA. This is attributed to the lack of a local community to steward, monitor and enforce the MPA no-harvest restrictions (Sobel and Dahlgren, 2004).

Some arguments exist against a bottom-up approach to marine conservation. Jones (2002) reviews a number of papers that question the effectiveness of traditional approaches to managing marine resources. The assumptions that traditional cultures have an ecological rather than competitive focus and superior management wisdom, have been shown to be false in some areas of the world. Jones (2002) relates that external influences and technology can influence traditional management systems. Certainly, the Hul'qumi'num had sophisticated technology, such as weirs, that could have impacted upon salmon runs. Potlatch systems may have been used as a form of warfare between tribes where one community could "shame" another by continually gifting food and resources until it was not possible for that community to return the debt. However, resources were not inexhaustible and continued over-harvesting would create a decline in populations of some species.

2.2.2 *Co-management and Community-based Management with Indigenous People in Canada*

Co-management of resources in Canada between government and Aboriginal peoples is often developed through legal agreements that reflect the circumstance that fostered the agreement (RCAP, 1996). Claims-based co-management agreements are constitutionally protected and cover a range of land and resource matters and environmental issues. Most often these agreements establish boards that govern allocation (with decision making authority) and management (with advisory capacity) of resources (RCAP, 1996). Crisis-based co-management agreements usually result from conflicts over land ownership or impacts from resource development. These agreements are usually viewed as interim measures and often focus on a single resource but can also be ecosystem-based.

A phenomenon, similar to that described by Dearden (1996) in Thailand, is evolving in Canada among First Nations, local communities and government. First Nations are advocating in Treaty negotiations and in the courts for co-management or community-based management of natural resources in provinces such as British Columbia, New Brunswick and Labrador. Community-based management is characterized by an approach that integrates solutions from citizens groups, government agencies and academics while paying close attention to resolving conflicts between participants (Weinstein, 2000). A number of community-based and advisory type co-management agreements are in effect in British Columbia, most notably the West Coast Vancouver Island Aquatic Management Board (AMB), the Gwaii Haanas Agreement and Archipelago Management Board and, the Nisga'a Joint Fisheries Management Committee. The AMB is a community-based management model that includes First Nations, governments and local organizations in the management of important aquatic resources on the west coast of Vancouver Island. This Board provides a template for a more regional approach, beyond agreements reached in treaty, to effect community-based management for sustainable resources and communities. The Archipelago Management Board was established through the Gwaii Haanas Agreement in 1993 to make recommendations to both the Haida Nation and Parks Canada for the management of Gwaii Haanas National Park

Reserve and Haida Heritage Site. The Nisga'a Joint Fisheries Management Committee is an example of an agreement established in Treaty that outlines a process whereby resources are jointly managed by the Nisga'a and other governments. In this example the Management Committee has equal Nisga'a, Canada and British Columbia government representation and operates on a consensus basis, making recommendations to the Canadian Minister of Fisheries.

2.2.3 Current System of Marine Resource Management in Canada

The Department of Fisheries & Oceans Canada (DFO) is the lead agency in developing and implementing the marine conservation strategy to protect and manage the resources of the Canadian coastline. In 2002, DFO unveiled their Oceans Strategy, Canada's vision for modern oceans management, which is guided by the principles of sustainable development, the precautionary approach and integrated management (Canada, 2002a). Sustainable development has an intergenerational mandate through meeting the "needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987:8). The precautionary approach relates to erring on the side of caution when making management decisions. "Canada promotes the understanding of oceans, ocean processes and marine ecosystem to foster the sustainable development of the oceans and their resources" (Canada, 2002a:6). Canada's Oceans Strategy lists integrated management as "a commitment to planning and managing human activities in a comprehensive manner while considering all factors necessary for the conservation and sustainable use of marine resources and the shared use of ocean spaces" (Canada, 2002a:11). This commitment includes:

- Integrating data collection, monitoring, research, synthesis and information sharing, communication and education (the full range of relevant knowledge is applied to the planning process, including scientific studies and traditional knowledge);
- Inclusive and collaborative oceans governance structure and process;

- Flexible and adaptive management techniques to deal with uncertainty and improvements in the understanding of marine species and ecosystems;
- Planning on the basis of natural and economic systems together, rather than principally on political or administrative boundaries (Integrated Management plans may include more than one Province or Territory or span international boundaries)” (Canada, 2002a:11).

In current management, integrating design, and management and monitoring of effects of policies allows for scientific learning by systematically testing assumptions (Wells and McShane, 2004). However, this method requires a significant amount of data input to increase accuracy and often does not integrate social and scientific information (Lessard, 1998). Some inherent problems exist with a need for this level of data, including inflexibility of institutional systems, lack of long-term funding and the ability to incorporate new forms of data (Riggs, 2001). The *Oceans Act* (R.S.C., 1996) mentions the precautionary approach, as a mechanism to address uncertainty in management.

Canada’s Oceans Strategy outlines the goal of establishing a network of MPAs as a means to furthering oceans management (Canada, 2002a). In the MPA Strategy Document, DFO and the Province of BC state their intention is to create a network of MPAs along the Pacific Coast to ensure sustainability of ecological, social and economic interests (Canada and BC, 1998). The guiding principles in MPA Strategy Document include:

1. Work with people;
2. Respect First Nations and the treaty process;
3. Foster ecosystem-based management;
4. Learning-by-doing;
5. Take a precautionary approach; and,
6. Manage for sustainability.

In British Columbia four pilot MPAs have been proposed, at Race Rocks, Bowie Seamount, Endeavour Hydrothermal Vents and Gabriola Passage. To date only the Endeavour Hydrothermal Vents has been announced as a MPA.

Parks Canada, a federal government agency, also has jurisdiction in Canada over protected areas under the *National Parks Act* (Canada, 2000) and the *NMCA Act* (Canada, 2002b). Parks Canada is empowered to establish two main types of marine parks: 1) A national park reserve containing terrestrial and marine components (the reserve designation relates to areas where First Nations land claim issues have not been settled); and, a National Marine Conservation Area (NMCAs) which is marine in focus, can contain no-take zones and is focused on sustainability. NMCAs propose management for sustainable while incorporating the philosophy that conservation areas are for the encouragement of public understanding, appreciation and enjoyment of the natural environment and cultural heritage. This mandate involves partnerships with local stakeholders and incorporates multiple use areas in a three-tiered zoning system. Zoning in NMCAs are proposed on at least three levels to promote protection of sensitive areas: A Preservation zone (no renewable resource harvesting or permanent facilities); a Natural Environment zone (no renewable resource harvesting including recreational hunting or fishing, but low-intensity recreation, research and education permitted); and, a zone managed to maintain ecosystem structure and function while allowing a wide range of activities (Dearden, 2002). Some zones will focus on a higher level of ecological protection meeting Parks Canada's overall mandate of retaining areas that are unimpaired for future generations. Canada's exploration of NMCAs appears to be moving towards the "post-modern" approach described by Dearden (1996).

A feasibility study for the Southern Strait of Georgia NMCA was initiated in 2000, when it then stalled for some time and has recently resurfaced. A new Southern Gulf Islands National Park Reserve has recently been created under the National Parks Act. Although primarily land based, the park encompasses foreshore and inter-tidal areas.

The Provincial Government of British Columbia is also working on marine conservation issues. The Ministry of Sustainable Resource Management (MSRM), which includes BC Parks and the Ministry of Water, Land and Air Protection (WLAP) have mandates for coastal planning and marine resources. BC Parks' mandate is to protect sensitive and natural places in BC for conservation, outdoor

recreation, education and scientific study (WLAP, 2004). The MSRM mission statement includes promoting sustainable marine development and diversification opportunities while maintaining environmental values. The MSRM is pursuing coastal land use plans, which include marine components, in many areas of the BC coast. The Ministry of WLAP has responsibilities for environmental protection of water, land and air quality, including environmental stewardship, park and wildlife recreation management and environmental monitoring and enforcement. Currently, WLAP and MSRM are developing a State of the Environment Report for the coastal marine environment (R. Paynter, pers.comm. 2005).

2.2.4 *Canada, Indigenous Peoples and Marine Conservation*

In Canada, indigenous peoples or First Nations have had their aboriginal and Treaty rights recognized and affirmed in the Canadian *Constitution Act* (1982). This Act states that rights that are of “Aboriginal” origin and treaty rights are “entrenched” constitutionally or given protection from changes or regulation by the Canadian Parliament (Canada, 1982). The Government of Canada’s fiduciary duty to aboriginal people is not, however, absolute, and must be reconciled with other government responsibilities (Barsh *et al.*, 2003) such as regulations for conservation, which must be justified. Generally, the Federal powers over marine resources and conservation in the marine environment are exercised on a species by species basis through the setting of Total Allowable Catch (TAC) that considers an estimate of necessary biomass left un-harvested to enable reproduction. Marine resource management policies are shifting, through the development of marine conservation strategies. This is evidenced by the incorporation of sustainable development, integrated management and managing on the precautionary approach as the principles of Canada’s Oceans Strategy (Canada, 2002a).

Marine conservation strategies, such as MPAs, are often opposed by First Nations as infringing on aboriginal rights. This may be due to the perception that MPAs equate to closing areas for resource harvesting, thereby limiting access and affecting a First Nations’ aboriginal rights to harvest marine resources, and also that they are different from their traditional systems of resource tenure and management

employed before colonization (First Nations' attitudes towards MPAs are explored in more detail in Chapter 3).

Although the Canadian government recognizes the need to involve all stakeholders in marine conservation planning, including aboriginal communities⁵ (Canada, 2002a), there exists a difference between the viewpoints of government and First Nations in developing principles for marine conservation. It is possible that First Nations view the involvement of Aboriginal communities in the planning, establishment and management of marine conservation strategies as a fundamental principle rather than a goal or objective. This relates to First Nations' assertion of rights and title to marine resources whereby they see themselves as the rightful owners and therefore managers of marine resources, rather than mere stakeholders.

The conservation of marine resources has a long tradition within coastal First Nation communities (Langdon, 1989). Even though First Nations' marine conservation principles exist, it is the view of First Nations that government marine conservation strategies do not effectively incorporate them into current policy initiatives. This is partly due to: 1) First Nations being denied the opportunity to participate in management decisions; 2) First Nations experiencing economic limitations to being involved in marine planning initiatives; and, 3) differences in worldviews between First Nations and governments.

Without incorporating or considering marine conservation principles from a First Nations' perspective, Canadian marine conservation efforts do not accommodate aboriginal rights and are regarded by First Nations as a further erosion of access to marine resources. As a result, there has been considerable opposition to government marine conservation strategies.

Opposition to marine conservation strategies such as NMCAs, has also been seen in other non-First Nations marine dependent communities in Canada. This is evidenced in Parks Canada's attempt to establish a NMCA on the Newfoundland coast. Parks Canada undertook the development of a NMCA as part of Terra Nova National Park on Newfoundland's northeast coast in 1997 (Lien, 1999). The

⁵ Government used to refer to aboriginal communities as 'stakeholders' some First Nations have objected strenuously to any procedures that portray them as merely stakeholders rather than governments to be addressed on a government-to-government basis.

feasibility study included extensive consultation and allowed for local control but in the end failed, due to strong opposition from the local community. Local community involvement was seen as necessary in the establishment of this NMCA but clear effective leadership that articulated the vision and authority and, developed the communities' trust was not apparent (Lien, 1999). Education, research and management that lead to results in conserving marine resources are also important components of a MPA program (Lien, 1999).

2.2.5 *Ecosystem-based Management as an Objective of Marine Conservation*

Successful oceans management will depend upon developing an understanding of marine ecosystems (Canada, 2002a). Scientific and traditional knowledge will provide the necessary components for understanding marine ecosystems as well as social factors that influence the human relationship to the marine environment. The worldviews of Aboriginal peoples based on *knowledge-practice-belief* described by Berkes *et al.* (1998) and the associated traditional ecological knowledge (TEK) will further the understanding of marine ecosystems. Berkes (1999) describes four interrelated levels of traditional ecological knowledge that informed traditional management systems: Local knowledge of land and animals, including detailed knowledge of species and their life histories; land and resource management systems, where local knowledge was combined with appropriate practices, tools and techniques including an understanding of relationships between species; social institutions provided laws of practice and social ethic codes; and lastly, worldviews where perceived knowledge about the environment was combined with how the relationship between humans and the universe was conceived. Berkes *et al.* describe that “ecosystem-like concepts among traditional peoples has been important in the appreciation of traditional ecological knowledge among ecologist, anthropologists, and interdisciplinary scholars” (Berkes *et al.*, 1998: 409). Understanding the relationship between traditional Coast Salish and their environment that led to elaborate marine resource management systems provides a mechanism to gather information on contemporary views of marine conservation.

Ecosystem-based management (EBM) considers humans as embedded in nature, having a relationship involving fundamental influences upon each other (Grumbine, 1994). Embeddedness relates to the view that humans are part of the ecosystem and their actions have reciprocal reactions in the environment. Ecosystem-based management also includes the concept of connectedness in the understanding that humans depend upon ecosystems and are connected to ecosystem support functions. Managing and understanding the interaction between biophysical and socio-economic factors, in a larger self-maintaining system, forms the basis of ecosystem-based management (Slocombe and Dearden, 2002). The Coast Information Team (CIT) in BC, a group of independent scientists responsible for providing information to the coastal land and resource management planning tables, define EBM as:

...“an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities. The intent is to maintain those spatial and temporal characteristics of ecosystems such that component species and ecological processes can be sustained, and human well-being supported and improved”(CIT, 2001).

In Canada's Oceans Strategy (2002) marine resource management is based on an ecosystem approach that includes maintaining ecological integrity while allowing sustainable development. Ecosystem-based management is also one of the key design principles of MPAs (Canada, 1998; Slocombe and Dearden, 2002), although Day and Roff (2000) caution that the large, often undefined, ecosystems in the marine environment can make this approach unworkable for setting MPA network targets. However, MPAs that are designed with an ecosystem focus provide a landscape level approach and are likely more effective than choosing hotspots of species diversity (Sobel and Dahlgren., 2004). Ecosystem-based management also begins to address the concept of including resource-dependent communities and peoples in management decisions.

2.3 The Study Area

The marine region occupied by the Central Coast Salish people is centred around Puget Sound, the Gulf of Georgia and the Strait of Juan de Fuca located on the North Western Coast of North America in Canada (Figure 1.2). Puget Sound and the

Gulf of Georgia are shallow productive water bodies characterized by large fresh water inputs from the Fraser River, the Skagit River, the rivers of South-eastern Vancouver Island (including the Cowichan, Chemainus, Nanaimo, Qualicum and Courtenay), and the various smaller streams and rivers entering the area. The Strait of Juan de Fuca connects the area to the open Pacific Ocean and currently serves as the international boundary between the United States and Canada. The large fresh-water inputs, shallowness and protected nature result in estuarine-like conditions, which are well recognized as among the most productive ecosystem complexes in the world. The Gulf Islands in the Georgia Strait stretch from the south-eastern side of Vancouver Island from Victoria northward to Comox (Figure 1.1). This multitude of islands forms many productive channels that result in increased velocity and water exchange through tidal currents (Masson, 2002). As a result, the area is highly productive, providing the flora and fauna that support complex marine ecosystems of the area (Wallace *et al.*, 2002). There are currently 12 species of marine mammals, approximately 200 species of fish, more than 100 species of marine birds, 500 species of plants including estuarine plants and 200 different species of seaweeds, and greater than 1500 invertebrates that live in the marine regions of the area (GSA, 2004). The area surrounding the southern Gulf Islands from Gabriola Passage to Saturna Island is currently under consideration for a National Marine Conservation Area by Parks Canada.

2.4 The Coast Salish

For centuries various groups of central Coast Salish peoples have focused their lives around the Fraser River and the Gulf Islands in the Strait of Georgia, the Strait of Juan de Fuca and Puget Sound. The central Coast Salish can be divided into distinct language groups, occupying defined areas around the Georgia Basin. The Straits Salish occupied the southern Gulf Islands region and included the Sooke, Songhees, and Saanich on Vancouver Island and the Samish, Lummi, and Semiahmoo on the mainland (Suttles, 1987a). Another central Coast Salish group, the Halkomelem people, consisted of the Vancouver Island groups of Cowichan, Chemainus and Nanaimo and the Musqueam, Kwantlen, Katzie, Chilliwack and others along the lower Fraser River on the mainland (Suttles, 1987a). Generally, the

Coast Salish are described “as a large group of tribes occupying most of the area around Georgia Strait, the Strait of Juan de Fuca, Puget Sound and extending to the Pacific between the Olympic Peninsula and Willapa Bay” (Suttles, 1987a: 29). Culturally they were characterized as having a complete dependence on hunting, fishing and gathering although elaborate social systems including a system of land and sea tenure distinguishes the Coast Salish from other hunter-gatherers (Richardson, 1982; Thom, 2004). Coast Salish groups displayed ideologies and social institutions that provided incentives to accumulate prestige and in having a socio-economic system that exhibited territoriality (Suttles, 1987a).

The indigenous peoples of the Northwest Coast of North America, including the Coast Salish, exhibited a system of resource tenure where productive locations were owned by individuals, restricted kin-group communities, multi-kin-group villages or larger ethnic groups in defined geographic areas (Suttles, 1987a). Kin-groups consisted of extended families of brothers, cousins and brothers-in-law, and these groups claimed rights to defined local resources, such as fishing sites. Families of the bride and groom exchanged wealth and inherited privileges, which formed a link between communities. This system of exchange formed a social institution where productive fishing locations were owned and wealth derived from this ownership was re-distributed among direct kin or kin-in law (thus within communities and between communities) (Suttles, 1987b). Ownership of productive locations was a means to achieve prestige. Careful stewarding of the resources was necessary to maintain this prestige. These characteristics provide context to understanding the relationship between the Coast Salish and the resources they depended upon.

Fisheries resources and the marine environment are intricately tied to the culture of the Hul’qumi’num Mustimuhw (people) (a subset of the Halkomelem), a central Coast Salish people of the Cowichan area of Vancouver Island and the Georgia Basin/Puget Sound region (Figure 1.1). For the purposes of this study, Hul’qumi’num refer to the current Cowichan, Chemainus, Lake Cowichan, Lyackson, Halalt and Penelakut First Nations. Archaeological evidence supports the significance of the relationship of Coast Salish to the marine resources of their traditional territories (McLay, 2002). A study of prehistoric remains from BC coastal

people (some over 4000 years old) used stable carbon isotopes to measure the effective lifetime marine-terrestrial protein intake for an individual (Chisholm *et al.*, 1983). The study determined that the protein intake from marine sources by coastal people, including those who inhabited a similar geographic area as the Hul'qumi'num, was over 90% of their diet indicating a strong historic tie to marine resources.

2.5 Methods

Detailed methodology for this paper can be found in the introductory chapter of the thesis. As each chapter is meant to be a stand-alone paper, a brief overview is provided here for completeness.

In order to arrive at a holistic picture of Hul'qumi'num perspectives on marine conservation a blend of qualitative and quantitative data collection methodologies was used. This blended approach allows the researcher to gather results in a quantitative form and then allows a richer understanding of the issues at hand using qualitative data (Henderson, *et al.*, 1999). The linking of these two forms of data collection allows the exploration of context and the testing of the validity of quantitative data. When both types of data collection are used in a sequential, encapsulated and linked manner it is possible to explore issues with increased depth (Henderson *et al.*, 1999).

The research conducted through this project was participatory in nature and involved community members in all aspects of the research process. The research topic has developed over a six-year relationship with this Coast Salish people that provided an introduction to the culture, the people themselves and the issues they face.

A total of 45 Hul'qumi'num participated directly in this project, either through three focus groups or face-to-face interviews, and provided a rich information source from which to compile an analysis of Hul'qumi'num perspectives. As First Nations' issues with marine conservation are not easily understood, this study represents one reflection on Hul'qumi'num perspectives of marine conservation. This study does not attempt to explain influences of colonization, the degradation of language and

culture or barriers caused by residential schools or poverty that may influence current access to traditional marine resources.

The research included both qualitative and quantitative methods, in the form of a literature review, in-depth focus group interviews, survey questionnaires and a field trip conducted with knowledgeable community members and elders. A Hul'qumi'num research assistant was hired to help conduct the face-to-face interviews. Figure 1.3 outlines the research process used in this thesis.

Ethnographic literature pertaining to the Coast Salish and Island Halkomelem was reviewed with particular emphasis on the four major traditional management themes described by Berkes (1999). This provided the context to understanding the traditional resource management systems employed by the Coast Salish peoples. A framework of analysis outlined in Berkes (1999) was used to categorize the ethnographic literature (Figure 1.4).

Three focus group meetings with Hul'qumi'num community members were conducted. In the first focus group meeting participants were asked a series of open-ended questions aimed at promoting discussion on the principles, goals and objectives of marine conservation from a Hul'qumi'num perspective and traditional resource management and Hul'qumi'num attitudes towards no-take marine areas (conservation areas where no harvesting is allowed). The main purpose of the first focus groups was to involve the intended audience in defining the problem to solve, and in identifying what information was needed to solve it (Salant and Dillman, 1994) and to determine if the traditional perspectives on marine resources were still important in this century.

The first focus group results were synthesized and a survey questionnaire was developed to help generate Hul'qumi'num principles, goals and objectives for marine resources management, marine conservation, to identify limitations to access and conserve marine resources, and to identify attitudes towards no-take marine areas. The survey questionnaire was then reviewed by focus group one participants to assess the validity of the questions.

The questionnaire (Appendix 3) was administered to 41 Hul'qumi'num community members (including the youth from focus group three) that were

identified using a “snow-ball” sample method (Johannes *et al.*, 2000). The first focus group members were asked to identify community members with knowledge of the marine environment and then each survey respondent was asked for recommendations for whom to survey next. Although, the results of this survey cannot be applied to all Hul’qumi’num community members, based on the non-randomness of the sample, they are likely indicative of general attitudes or “ideal” behaviour and values held by those community members more knowledgeable towards marine conservation.

Survey questions varied from open-ended to closed-ended with ordered responses. Open-ended survey question results were typed into a MS Word document and analyzed for patterns of responses. Closed-ended (or quantitative) survey questions were analyzed using SPSS and mean responses and standard deviations were generated for each response category where appropriate (Appendix 7 provides means and standard deviations in tabular format for each quantitative question).

A second focus group session was conducted with four Hul’qumi’num youth (aged 18-25). These individuals were chosen through referrals from other survey participants and because of their involvement with the Hul’qumi’num Treaty Group Youth Committee, a group of youth who regularly meet to discuss issues related to the Treaty. Focus group participants were first asked to complete the same questionnaire administered to other participants (Appendix 3) without verbally communicating with each other. Once all participants finished the questionnaire a general discussion on marine conservation was held. The researcher asked the group general questions and recorded responses on a digital cassette recorder.

A field trip was conducted with eight participants of the previous survey to Saltspring Island to generate dialogue relating to traditional use and on-the-ground issues faced by participants (or the Hul’qumi’num community) today allowing an opportunity for participant observation. Field trip participants were chosen based on familiarity with Saltspring Island and surrounding waters and to achieve a range of ages (3 youth, 2 middle age and 3 elders) and gender, although six of the eight participants were male. Participants were video taped and digitally recorded and a transcript of the day was produced and is archived with the Hul’qumi’num Treaty Group.

2.6 Results

2.6.1 *Hul'qumi'num Principles for Marine Conservation*

The four major traditional management themes in the framework provided by Berkes (1999) (Figure 1.4 in the previous chapter) were present in the ethnographic literature on Coast Salish peoples reviewed for this study. The major ethnographies reviewed (Suttles, 1974, 1987a, 1987b and 1987c; Richardson, 1982; Onat, 1989; Kew and Griggs, 1991), describe traditional economies, kin-group relationships, subsistence and abundance and prestige. Variations in cultural specialization in relation to abundance of resources highlighted the four main themes described by Berkes (1999): worldviews; social institutions; land and resource management systems; and, traditional ecological knowledge. Richardson (1982) and Onat (1989) discuss the relationship between cultures and control of resources or social institutions on the Pacific Northwest. Kew and Griggs (1991) describe worldviews in relation to sustainability.

Similarities between traditional resource management systems of knowledge-practice-belief, as outlined in the literature, and contemporary First Nation perspectives on marine resource conservation were difficult to assess fully in a focus group setting. Results from the initial focus group sessions indicated similarity in data themes when compared to themes in the literature. Table 2.1 highlights the relationships between the themes identified in the framework by Berkes (1999) and themes resulting from the focus group session. Focus group participants indicated that respect for resources was very important. How important this worldview and traditional management practices were to maintain in contemporary relationships to resources was then tested in the survey questionnaire administered to 41 Hul'qumi'num members (Appendix 3). Participants were also asked in the survey to define marine conservation. Qualitative responses on the definition of marine conservation are summarized in Appendix 9. The majority of participants responded that "respecting marine resources" and "taking only what is needed" defined marine conservation.

Figure 2.1 lists the relative importance of principles for marine conservation identified by survey participants. The principle of "maintaining populations of all

native species” had the highest relative importance of the principles listed, with 92.7% of respondents indicating that it was extremely importance. These results were expected as Hul’qumi’num diet, culture and management have evolved around the suite of native species present in this area.

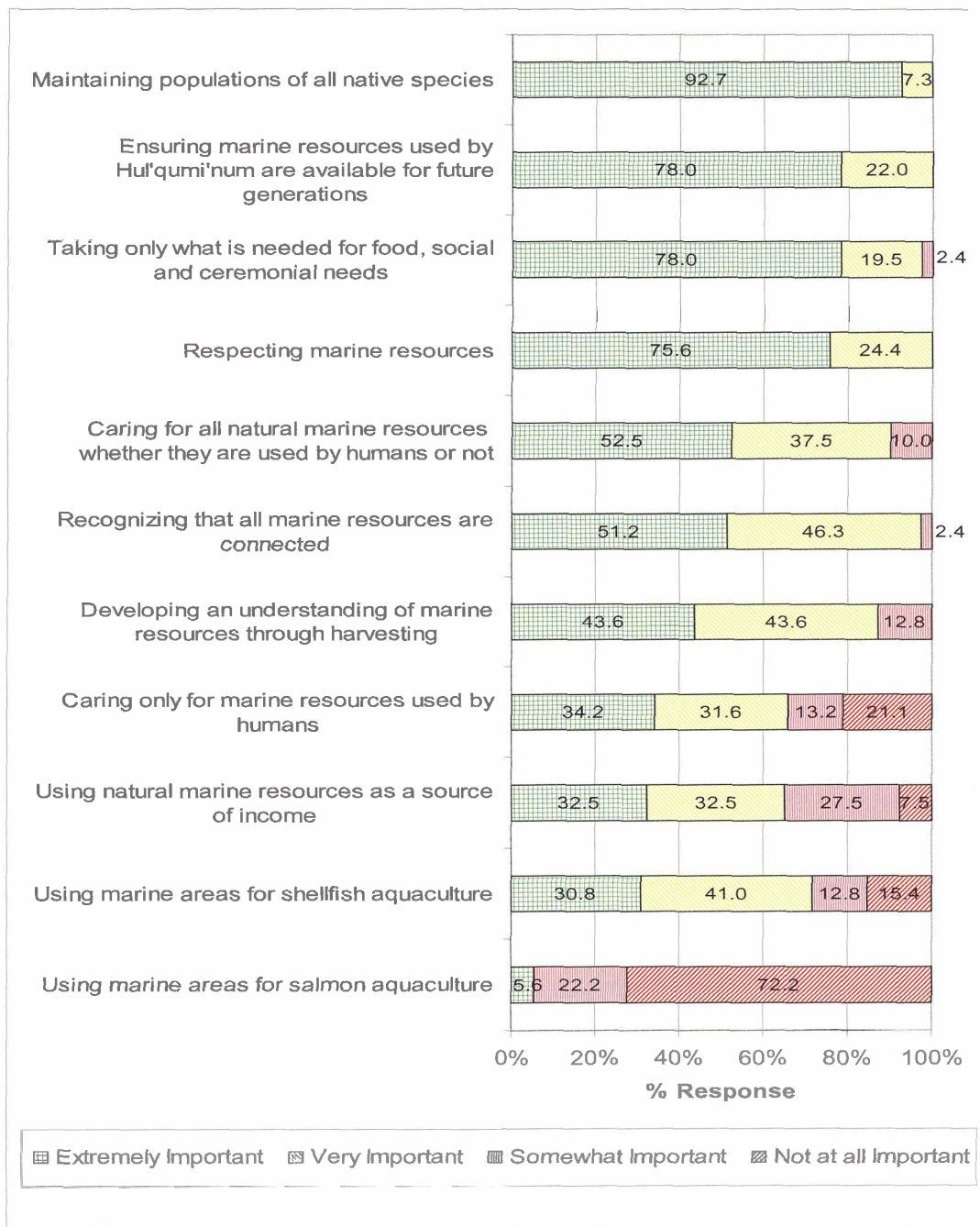
Table 2.1: Themes identified in literature and first focus group session

<u>Major Theme in Literature</u>	<u>Theme of Focus Group</u>	<u>Example (quote)</u>
Worldview - Ethic of Reciprocity	Everything is connected; Respect	“the stories I hear from my grandfather are about wolves or killer whales and how they either taught us or became part of the family and gave people the gift of being able to hunt in the ocean or hunt on land. By watching and observing and being near all of these things, that is how they gained all of their information and their traditional knowledge and the ability to do things that were done in the past.”
Social Institutions – Potlatch	Resource Sharing; Trade and Barter	“all our Hul’qumi’num tribes traveled over to the Fraser River and you as First Nations people shared not only within our own families but we traded.”
Land & Resource Management System of Tenure	Family Group Ownership; Shifting Harvest Areas; Take only what is needed	“Everyone would respect different practices or different boundaries or other peoples family areas. Each group had their own fishing stations and you weren’t allowed to go there. Within our own tribes we respected our own traditional areas to harvest.”
Local Knowledge	Understanding resources and relationship between resources	“That knowledge has supported and created all of the historical knowledge that is passed down from generation to generation. You know when the alder buds come out it is time to go out to Pender Island to fish for sockeye. It is developing that understanding of what is there so you know when changes are happening.”

Interestingly, the principle that had the highest number of participants indicating that it was extremely important, “maintaining populations of all native species”, is one found in most marine conservation strategies worldwide (Kelleher, 1999). This similarity is discussed further in Section 2.7.1. “Ensuring marine resources used by Hul’qumi’num are available for future generations” and “taking only what is needed” were chosen by 78% of survey participants as extremely important. The similarities and dissimilarities between these two principles (available for future generations and taking only what is needed) and the government principle

of sustainable development (listed in Canada’s Oceans Strategy) and other global marine conservation strategies are discussed more fully in Section 2.7.1. “Respecting marine resources” was considered extremely important by 78% of participants. (The lack of congruency between this principle and current government marine conservation principles is discussed in Section 2.7.5.).

Figure 2.1: Relative Importance of Principles of Marine Conservation



Recognizing that all marine resources are connected” and “caring for marine resources whether they are used by humans or not” were chosen as extremely important by half, 52.5% and 51.2% of survey participants respectively, whereas, “caring only for marine resources used by humans” was considered not at all important by 21.1% of participants. “Using marine areas for salmon aquaculture” was considered not at all important by over 70% of respondents.

Hul’qumi’num attitudes towards marine practices such as salmon aquaculture and only caring for marine resources used by humans are compared to the principles in Canada’s Oceans Strategy (Canada, 2002a) that advocate sustainable development and the precautionary approach in Section 2.7.2. The Oceans Strategy principles of integrated management, including ecosystem-based management, provide additional correlation and support for Hul’qumi’num attitudes towards what they consider potentially un-sustainable practices.

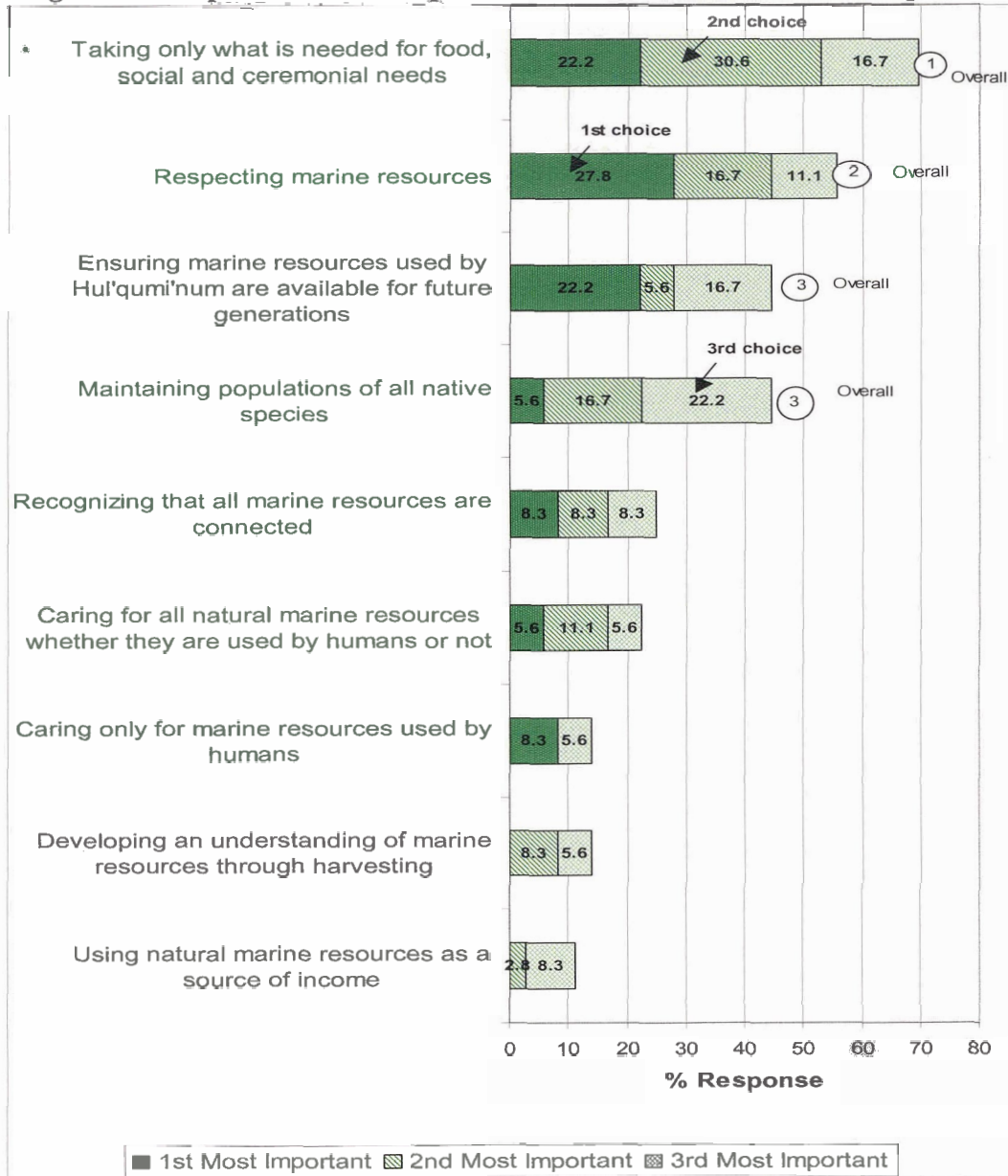
In order to provide further information on the importance of principles, participants were asked to rank the top three principles (from those listed in Figure 2.1) they felt were most important for marine conservation (see survey questionnaire in Appendix 3, Question 12). As some participants considered all marine conservation principles shown in Figure 2.1 extremely important, ranking principles allows further investigation and identification of the most important principles for marine conservation. Principles ranked first, second and third most important are provided in Figure 2.2 with relative percentages of participants choosing each.

“Respecting marine resources” was ranked first most important by respondents (27.8%), “taking only what is needed for food, social and ceremonial use” was ranked second (30.6%) and “maintaining populations of all native species” was ranked third (22.2%). The overall sum of participants ranking first, second, third or fourth choice for each principle was then calculated and is also shown on Figure 2.2.

“Taking only what is needed for food, social and ceremonial needs” was chosen first overall by participants, “respecting marine resources” was chosen second overall and “ensuring marine resources used by Hul’qumi’num are available for

future generations” and “maintaining populations of all species” were chosen third overall.

Figure 2.2: Top Three Most Important Marine Conservation Principles



Although a higher number of participants (92.7%) chose “maintaining populations of all native species” as an extremely important principle for marine conservation (as shown in Figure 2.1), when asked to choose their most important (or top three principles) (Figure 2.2) it was not ranked as the first most important. However, when the sum of the number of participants that either chose “maintaining

populations of all native species” as their first, second or third most important choice it was third overall (Figure 2.2).

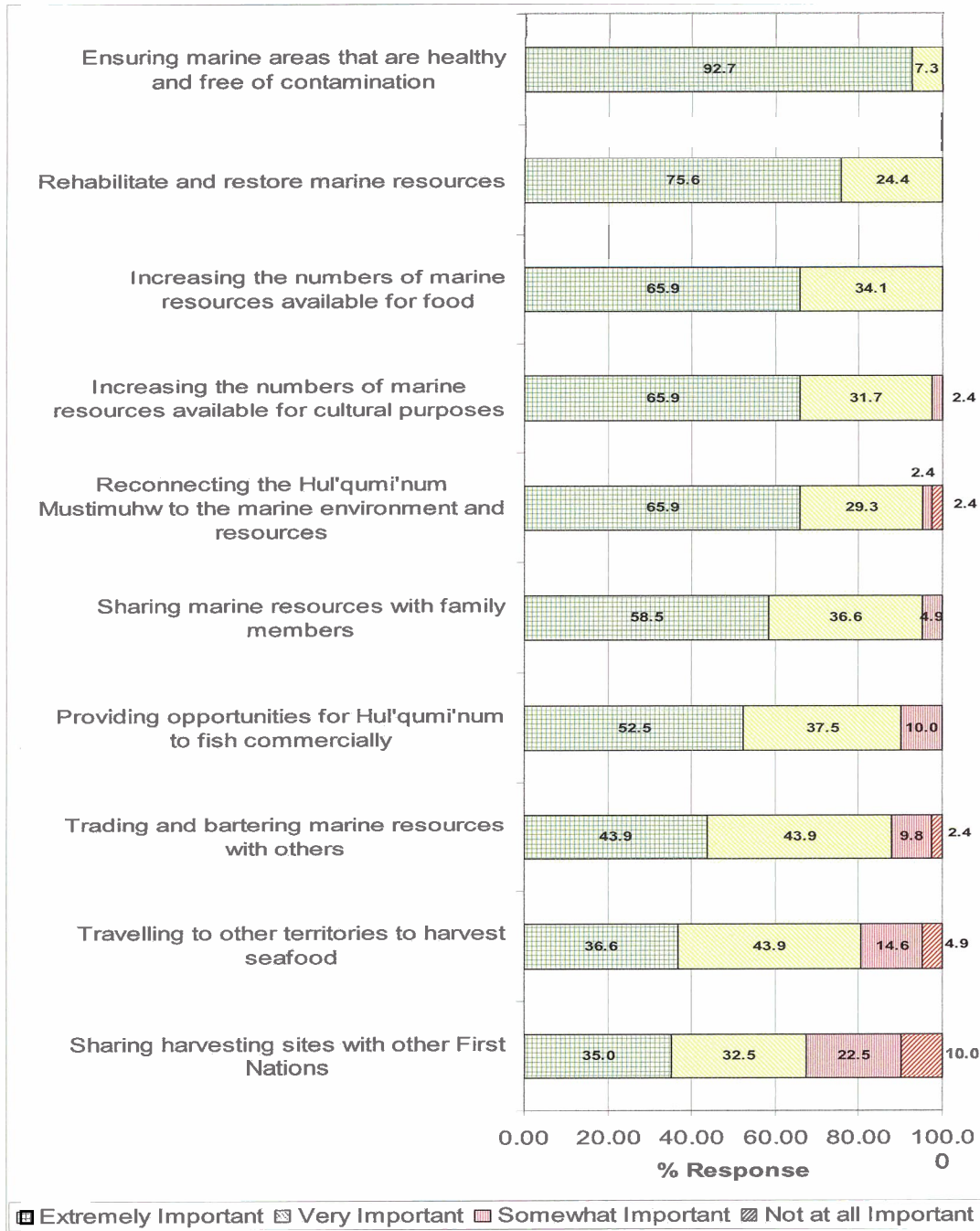
2.6.2 *Defining Hul'qumi'num Goals and Objectives for Marine Conservation*

Defining goals and objectives for marine conservation provided an opportunity for participants to outline their optimum future ideals for marine resources. These goals and objectives differ from the principles of marine conservation in that they represent the future ideals for the marine environment, while principles are the foundational building blocks for achieving marine conservation. Figure 2.3 shows the goals and objectives scored by participants from most important to least important. “Ensuring marine areas that are healthy and free of contamination” was scored extremely high in relative importance by 92.7% of participants. “Rehabilitating and restoring marine resources” had high relative importance to survey participants with 75.6% of participants choosing this goal as extremely important. “Increasing the numbers of marine resources available for food” and “increasing the numbers of marine resources available for cultural purposes” were chosen as extremely important by 65.9% of participants.

Although “trading and bartering with others”, “traveling to other territories to harvest seafood” and “sharing marine resources with other First Nations” (outside of the immediate Hul'qumi'num community) were extremely or very important to 87.8%, 80.5% and 67.5% of participants respectively (see Figure 2.3), some survey participants felt that these principles were not at all important (2.4%, 4.9%, and 10% respectively). This may be due to the alienation from the traditional harvest territory with the advent of reserves and fishing regulations and the potential inability of local fishers to barter and trade in a traditional manner.

Survey participants were asked to rank their top three most important goals and objectives from Figure 2.3 in order to differentiate which principles were the most important. Figure 2.4 provides the ranking of the top three most important goals and objectives for marine conservation.

Figure 2.3: Importance of Marine Conservation Goals and Objectives to Hul'qumi'num



The results in Figure 2.4 are similar to those in Figure 2.3 with the top three goals and objectives listed as extremely important correlating with the ranking of the three most important with 57.1% of participants ranking “ensuring marine areas that are healthy and free of contamination” first. “Increasing the number of marine resources available for food” was ranked second by 28.6% of participants and

“rehabilitating and restoring marine resources” third by 25.7% of participants. The goals and objectives highlighted as the three most important by Hul’qumi’num participants indicate an understanding that there has been a decrease in marine resources available and that marine habitats have been impacted by contamination and need restoration.

Figure 2.4: Percent of Respondents Indicating First, Second or Third Most Important Goal or Objective for Marine Conservation

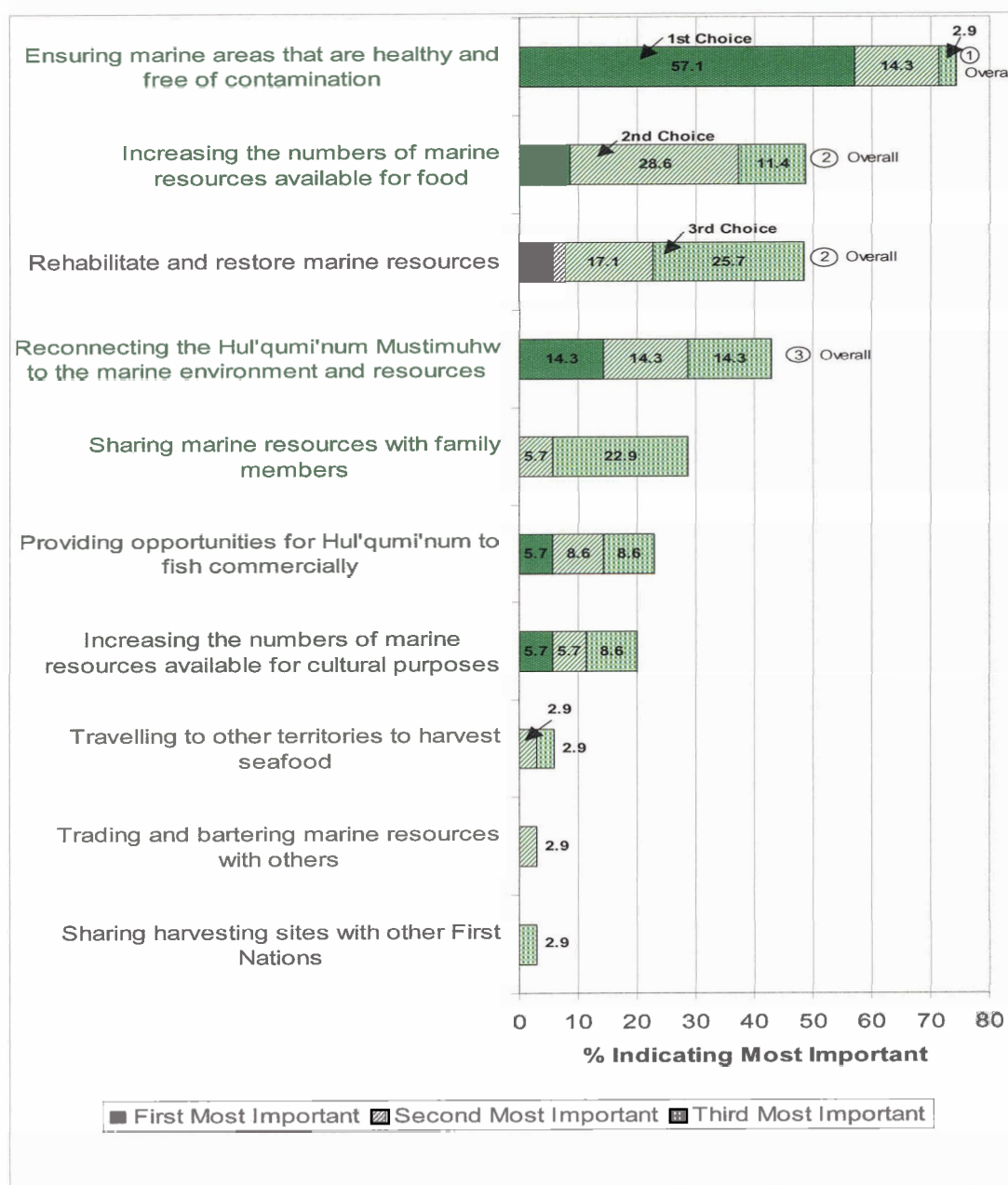


Table 2.2: Youth Focus Group Goals for Marine Conservation and Resources (from Focus Group #3 discussion)

<i>Youth Goals for Marine Conservation</i>	<i>Youth Focus Group Quote</i>
- Restoration of contaminated areas	"Clean-up contaminated areas – re-habilitate"
- Restoring populations of marine animals	"What about bringing back the quantity of them to what it used to be. All the naturally stocked areas, where grandpa used to go down to Cowichan Bay when it was packed full of stuff and now there is nothing there."
- Develop relationships between Hul'qumi'num and non-Hul'qumi'num	"Co-existence between non-Hul'qumi'num people and Hul'qumi'num"
- Practice "taking only what you need"	"What would play a better role is practicing traditional conservation. We have always had a traditional means of conservation. It is not something that we have not traditionally had. Conservation has concerned our people for a long time. It is something that we have always lived by."
- Marine conservation education	"Even the younger ones need to understand why a conservation method is being used they need to have a better understanding of why we are doing it. Also they can be there to help teach if there is some conservation issue happening."
- Institution development	"There needs to be a conservation core. Not so much a governing body but something in general."
- Using traditional knowledge	"The elders should be a guideline of where we are going."
- Using scientific knowledge with Traditional Knowledge	"I think it would be good to have aboriginal scientists...I think they [traditional knowledge and scientific knowledge] would jive pretty well...We have to acknowledge the scientific part of it, if we didn't we would be reductionists, that would play a key role in our own downfall. Not all of our traditional teachings necessarily apply today. But then there are important ways and teachings that could and will play an important role."
- Providing a balance between commercial, personal and traditional harvests (including moderate livelihood)	"...my immediate family rely on the summer in the Fraser to provide for their family for the whole year. They rely on that money to bring them through the whole winter months." "Providing alternative sources of income [is important]."
- Re-connection of Hul'qumi'num to marine resources	"Re-introducing the people to the marine resources, because that was how we lived...we know the seasons and what was in season, so we did our gathering and know what plants were in, what fish and you know where to go..."
- Community based management	"make it a requirement that the people managing all the resources live in our area...have to be from our area."
- Responsible conservation	"I believe that because our communities have a lot more involvement with the marine life and biology, basically all of our staple foods are marine based, that we should also adopt those ideas both within the community and outside, because we reap a lot more benefits out of it. We depend more on it...our initiatives on our behalf should be more so than everyone else."
- Responsible waste management	"those found not to have responsible waste management will have to pay the price."

The goal of “ensuring marine areas that are healthy and free of contamination” also relates to providing an opportunity to increase or re-establish a relationship and dietary reliance on marine resources. (The similarities and dissimilarities between Hul’qumi’num goals and objectives and that of MPAs are examined in the discussion sections of this paper.)

2.6.3 Goals and Objectives Expressed by the Hul’qumi’num Youth

Evidence of transference of the Hul’qumi’num teachings and principles was exhibited by Hul’qumi’num youth interviewed in the second focus group meeting on traditional marine resource management. Results show that the transference of cultural teachings, at least in Hul’qumi’num culture, still remains strong. Four youth (aged 18-25) who were interviewed as a group discussed in detail the primary principles of marine conservation that were central to their culture. Table 2.2 provides definitions and comments provided by the youth in the focus group meeting relating to goals for marine conservation.

2.6.4 Hul’qumi’num Principles for Marine Resource Management and the Contemporary Use of Traditional Management Practices

Contemporary use of traditional management practices and the identification of principles for management provide further insight to Hul’qumi’num perspectives of marine conservation. Participants were asked to indicate their agreement or disagreement with the use of past management practices today (Figure 2.5). The use of the traditional management practice of “not harvesting areas for a few years to allow them to recover when marine resources were low” was strongly agreed to by 77.5% of participants. A Hul’qumi’num elder clarified that the principle of taking only what is needed when clam digging also included leaving what was needed for the beach. This past management practice was recognized as very important to use in today’s world. Participants highlighted the role of elders in management when 75% and 25% respectively either strongly or somewhat agreed with “elders in the community providing their knowledge and helping to manage”. This highlights the continued role of elders and the importance of traditional ecological knowledge in managing marine resources. The Hul’qumi’num worldview of “everything is

connected” is reflected in the strong agreement (60%) that “beaches were regularly dug to keep them healthy”. Participants felt that many of the beaches were polluted or un-productive because Hul’qumi’num had lost or limited access to maintain the beach in its healthy state. Participants also strongly agreed (52.5%) that “Hul’qumi’num people that harvested should be managers” recognizing the direct relationship between harvesters and resource management. Interestingly a small percentage of participants disagreed with this statement (10%). It is possible that there is a perception that some Hul’qumi’num are not following the traditional teachings, although this was not tested in this study.

Figure 2.5: Agreement with the Use of Past Management Practices Today

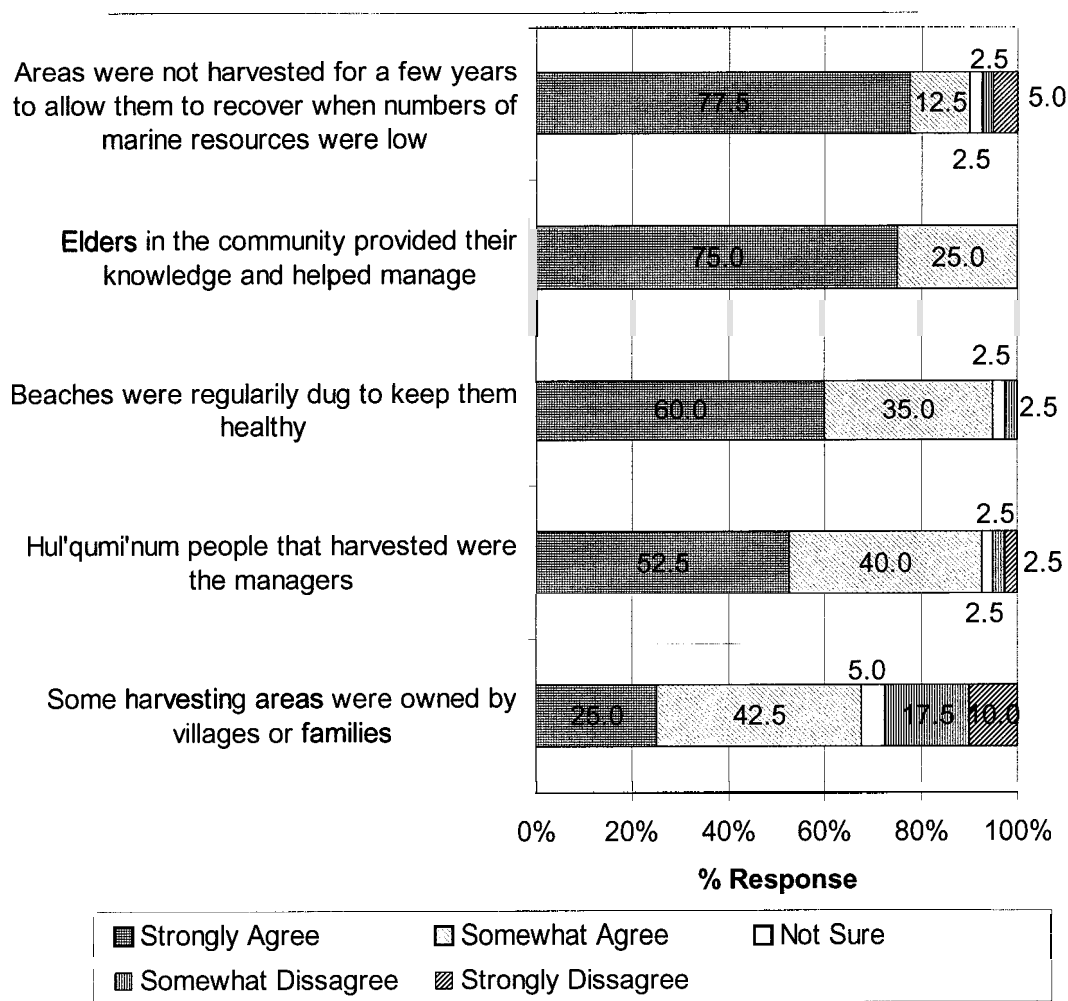
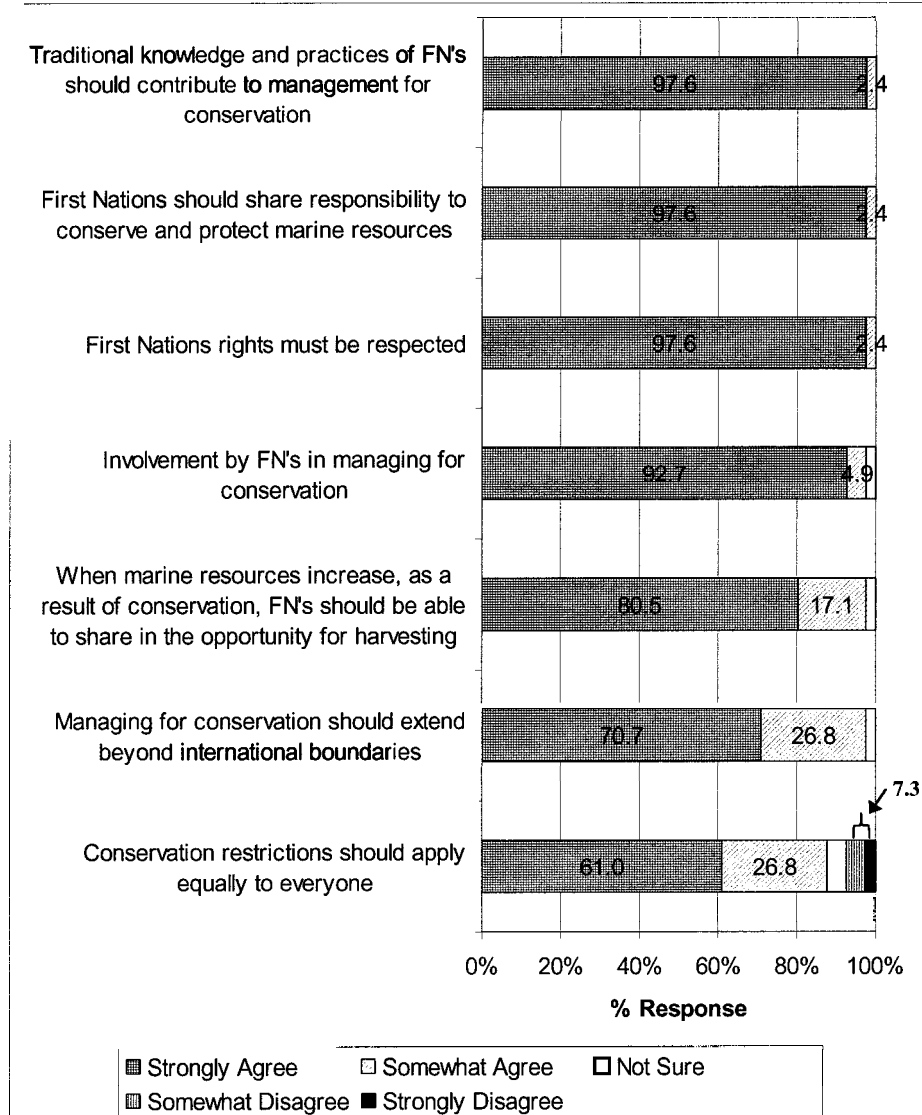


Figure 2.6 depicts the agreement and disagreement with principles for managing marine resources. Management principles strongly agreed to by

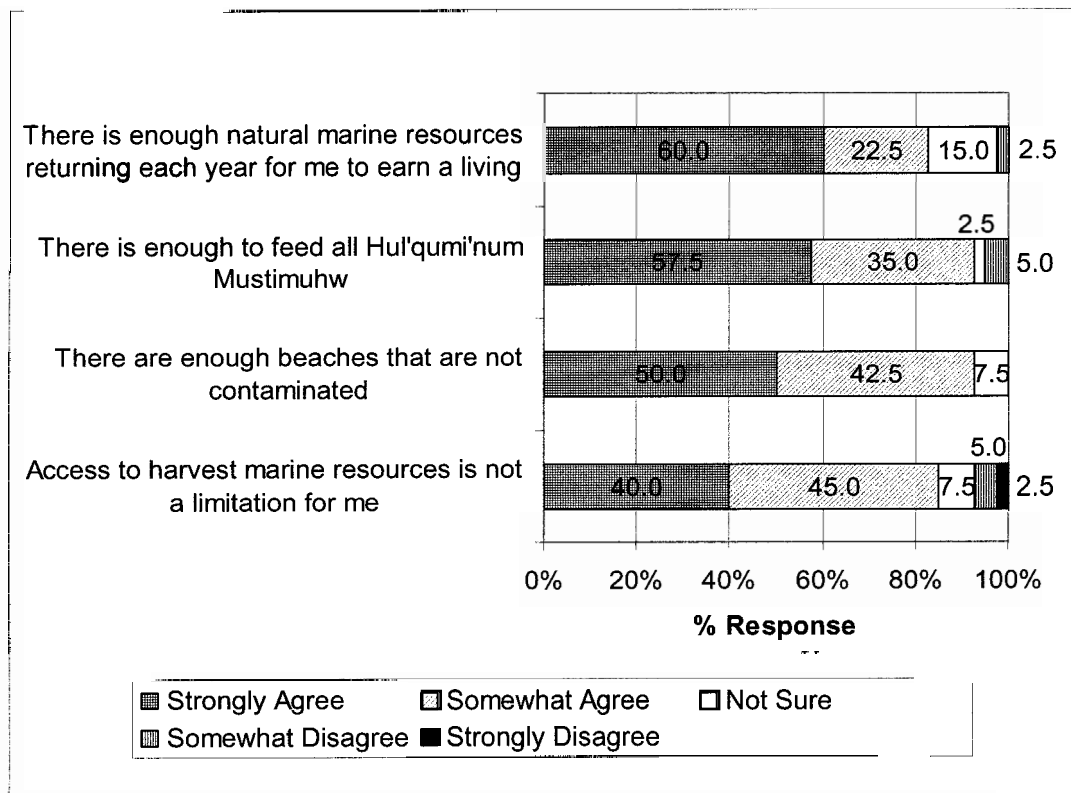
Hul'qumi'num (with 97.6% strongly agreeing with all three) included “using traditional knowledge and practices of First Nations to contribute to management for conservation”; “First Nations should share responsibility to conserve and protect marine resources”; and “First Nations rights must be respected”. “Involving First Nations in managing” was also supported with 92.7% strongly agreeing with this principle for management. Eighty-six percent of participants strongly or somewhat agreed that “conservation restrictions should apply equally to everyone”, although 7.3% of participants disagreed with this statement.

Figure 2.6: Agreement with Principles for Marine Resource Management



Identifying the measures of a successful marine resource management plan provides an understanding of Hul'qumi'num future ideals for management. Figure 2.7 provides participant agreement or disagreement with measures of success. Sixty percent of participants strongly agreed that “enough marine resource returning each year for me to make a living” was a good measure of success. “Enough marine resources to feed all Hul'qumi'num” and “enough beaches that are not contaminated” were strongly agreed to as a measure of success by 57.5% and 50% of participants respectively. Forty percent of participants strongly agreed that the statement “access to harvest marine resources is not a limitation for me” was a measure of success.

Figure 2.7: Agreement with Measures of a Successful Marine Conservation Plan



2.7 Discussion

The concept of marine conservation from a Hul'qumi'num perspective relates to the relationship between resources and humans. Worldviews, or the formation of Hul'qumi'num ideologies relating to marine conservation, are developed through a *knowledge-practice-belief* relationship (Berkes, 1999) with the resources. The ethic of reciprocity, the idea that you treat resources as you would like to be treated,

embodies the Hul'qumi'num worldview. To a Hul'qumi'num elder the teachings of the old days and the culture is tied to the sea.

"The sea is our refrigerator. When we lose our diet we lose our teachings, the teachings of the old." (Penelakut elder)

Traditionally, Hul'qumi'num people could be considered ecosystem people in that they mainly relied on the resources of the area to exist; over-harvesting was often met with social sanctions. One major difference between Dasmann's (1976) theory of ecosystem people and the Hul'qumi'num is the development of elaborate social institutions, which included trade systems up and down the Pacific Coast and interior areas of Western North America. This enabled access to many goods from many different ecosystems. However, the social institutions were built on the principles of conservation listed above, where wealth was derived principally through good husbandry of local resources and the ability to provide resources for kin-group members. Some ethnographers suggest that the influence of the Coast Salish may have at been least partly responsible for the vast wealth in resources the area sustained (Deur and Turner, in press). Many Hul'qumi'num talk about how clams were farmed and salmon runs were enhanced through traditional management activities.

Traditional Coast Salish resource management incorporates a worldview where "all living things are one": this connectedness is a philosophy that is fundamental to the culture. The western science explorations of ecosystem-based management recognize humans as a part of the ecosystem (Grumbine, 1994; Slocombe, 1998; Yaffee, 1999), although management of protected areas is focused to maintain ecological integrity by minimizing human impacts. The concept of ecosystem-based management and how it relates to the Hul'qumi'num principle that everything is connected is reviewed in detail later in the discussion.

When asked to define marine conservation in the first focus group and in an open question in the questionnaire (Appendix 3, Question 6), Hul'qumi'num focus group members and survey respondents indicated that their definitions of conserving marine resources were "respecting marine resources" and "taking only what was needed". The principle that "everything is connected" was also included in the

definition of marine conservation provided by participants and all three definitions are indicative of the Coast Salish worldview.

2.7.1 A Comparison of Principles

A comparison of Hul'qumi'num principles with the Government of Canada's Oceans Strategy (Canada, 2002a), MPAs Strategy (Canada, 1998) and the *National Marine Conservation Areas Act* (Canada, 2002b) is shown in Table 2.3. In the following section each of the Hul'qumi'num principles that were selected as extremely important by more than 50% of the participants (Figure 2.1) will be compared to a principle of either the Oceans Strategy or the MPA Strategy. Following that Hul'qumi'num goals and objectives (Figure 2.3) will be compared to the NMCAs Act goals and objectives. One other Canadian government agency, Environment Canada, also has jurisdiction to establish MPAs for wildlife protection and conservation, although its primary focus is migratory birds. Hul'qumi'num consider marine birds, especially ducks, important marine resources. However, for the purposes of these discussions only agencies responsible for fish and marine habitats will be considered.

Government principles were sourced from *Canada's Oceans Act* (R.S.C., 1996), the Oceans Strategy (Canada, 2002a), including the MPAs Strategy (Canada, 1998) and the *National Marine Conservation Areas Act* (Canada, 2002b).

The Principles of "Maintaining all Natives Species" and the Application of MPAs and NMCAs

"I would like to see my nieces and my kids be able to see (and eat) the same things I have seen in my time" (Chemainus youth).

Maintaining all native species enables Hul'qumi'num's continued connection to the resources. The principle of "maintaining all native species" has similarities to the principles related to the application of MPAs. One mechanism to address uncertainty in management is to create MPAs, essentially parks in the ocean environment. Under the Oceans Strategy (Canada, 2002a) MPAs are for the conservation and protection of:

- commercial and non-commercial fisheries resources;

- endangered and threatened marine species and their habitats;
- unique habitats; and
- marine areas of high biodiversity or biological productivity.

Table 2.3: A Comparison of Canadian Government and Hul'qumi'num Marine Conservation Principles

<i>Hul'qumi'num Principles (Figures 2.3 and 2.4)</i>	<i>Government Principles</i>
<i>Worldviews Social Institutions and Management Systems</i>	<i>Oceans Strategy, MPAs and NMCA(Canada, 1998, 2002a, 2002b)</i>
- Maintaining all native species	<ul style="list-style-type: none"> - Implementation of MPAs and NMCAs - Conservation and protection of unique habitats - Conservation and protection of endangered or threatened marine species and their habitats - Conservation and protection of marine areas of high biodiversity or biological productivity
<ul style="list-style-type: none"> - Ensuring marine resources used by Hul'qumi'num are available for future generations - Taking only what is needed 	- Sustainability and sustainable development
- Respecting marine resources	- Application of MPAs and NMCAs
- Caring for all natural marine resources whether they are used by humans or not	- Conservation and protection of commercial and non-commercial fishery resources, including marine mammals and their habitats
- Everything is connected	- Fostering ecosystem-based management
- Developing an understanding of marine resources through harvesting	- Adaptive management

Parks Canada's NMCAs includes strategies to address the principles of integrated and adaptive management, sustainable development and maintaining ecological integrity related to maintaining all native species. The NMCA Policy lists a selection criterion for a new NMCA as "the importance of an area in maintaining

biodiversity and protecting critical habitats or rare, threatened or endangered species” (Canada, 1994: 50). Ecological integrity is also important in national parks. An area is said to have ecological integrity when it represents the characteristics of the natural region in species composition, abundance of biological communities and rates of change (Woodley, 2002). This concept has evolved from a view that parks were to be maintained in their natural state through a realization that parks are not islands and active management may be required to maintain or restore ecological integrity (Woodley, 2002).

The conservation and protection objectives of the MPA strategy have the potential to relate closely to the Hul’qumi’num principle of “maintaining all native species”. Although, as discussed above, there is a significant difference in the scale of impacts felt in a traditional Coast Salish sense and that of the global impacts humans are having on their environment. Traditional harvesters in the Coast Salish world, through unsustainable management, could have had severe impacts on their environment, though likely limited to a local level. The continued occupation of the traditional Coast Salish world by a very large number of people for the past 4,000 years points to careful, adaptive and deliberate management by the people of the area to maintain native species and ensure the species Hul’qumi’num depended upon were available for future generations. This management was based on the worldview that Hul’qumi’num were an integral component of the ecosystem.

Differences between these principles relate to the Hul’qumi’num worldview of including Hul’qumi’num as an integral component to the function and health of the ecosystem. MPAs may include no-take zones where harvesting of marine resources, such as those Hul’qumi’num traditionally maintained like shellfish resource management (digging over beaches, transplanting shellfish from one area to another, and modifying intertidal zones to increase clam and oyster growing ground), are not permitted. Traditionally, active management to maintain ecological integrity or to protect and preserve biodiversity (i.e. prevent extirpation) is premised on the thought that human impacts must be managed and, where damage has occurred, restoration undertaken. Hul’qumi’num may have left areas fallow for a time to recover. The manner in which this practice was pursued may be different than the concept of

permanent closed areas, wherein Hul'qumi'num were still permitted inside areas left fallow and continued to actively manage. Survey participants objected to permanent no-take zones as having potential to impact aboriginal rights. In order for MPAs to be a mechanism to address the Hul'qumi'num principle of "maintaining all native species," Hul'qumi'num feel they must be involved in planning and implementing these areas, must see the benefits locally, and must relate through their first hand experiences and TEK to how these measures can help maintain all native species.

In contemporary times, MPAs and NMCAs may be useful ways to decrease local impacts on ecosystems and as a management strategy, providing a buffer for the increasing impacts on world ecosystems. However these strategies are inconsistent with Hul'qumi'num worldview where "maintain" in Hul'qumi'num management is coupled with active management in all areas with the goal of increasing resource production. This is dissimilar to MPAs and NMCAs that include no-take areas as a component of management to maintain and protect native species as a function of preventing extirpation. Hul'qumi'num attitudes towards MPAs are explored in more detail in Chapter 3.

The Principles of "Ensuring Marine Resources Used by Hul'qumi'num are Available for Future Generations", "Taking only What is Needed", and Sustainability and Sustainable Development

"Take only what you need, and never abuse what the water gives you. Dig so much and move to another area" (Survey participant).

"Ensuring marine resources used by Hul'qumi'num are available for future generations" is encompassed in fostering sustainability. This principle leads to the principle of "taking only what is needed". The concepts of sustainability and sustainable development are different but interrelated where the former refers to the maintenance of ecological processes indefinitely and the later to ensuring development meets the "needs of the present without compromising the ability of the future generations to meet their own needs" (Brundtland, 1987:8). For Hul'qumi'num, the principle of "taking only what is needed" ensures that there is no waste and that resource harvesting is conducted in a sustainable manner, ensuring the survival of resources (by leaving what is needed for the "beach" as well). Only

resources in excess of what is required for conservation are harvested and shared with kin-group members or used in cultural ceremonies.

The Hul'qumi'num principles of "ensuring marine resources used by Hul'qumi'num are available for future generations" and "taking only what is needed" could have similarities to the government principle of "sustainable development" and "managing for sustainability" (Canada, 2002a).

The principle of sustainability has been recognized as a key principle in protected area legislation from its onset (Canada, 2002a). Similarities between government and Hul'qumi'num principles of sustainable development are also evident in the inter-generational mandate to conserve resources, that there is an economic reliance upon marine resources that needs to be recognized in their management and recognition that use of resources must not impair or impact on ecological processes.

For Hul'qumi'num, an economic component to "need" also exists where local resources were traded, bartered or sold to maintain a moderate livelihood. This relationship to resources still exists in current day Hul'qumi'num culture where many Hul'qumi'num earn a moderate livelihood from harvesting and selling resources. The Gladstone case on the Central Coast of BC determined that the Heiltsuk had the right to take from the fishery enough to secure the basic necessities of food, clothing and shelter, supplemented by a few amenities (*Gladstone*, 1996). The Mik'maq, in Eastern Canada have also secured a right to a moderate livelihood, as provided in their Treaty, in the Marshall Case (*Marshall v. R.*, 1999).

The concept of wealth generation, in a traditional sense, is dissimilar to contemporary government models. Suttles (1987a) describes the redistribution of wealth in the Coast Salish economy, and suggest that the role of gift giving, the relevance of the potlatch, the relationship between wealth and food, subsistence activities and prestige-gaining activities formed a single integrated system within the traditional society (Suttles, 1987c). Productive resource harvesting sites were owned by kin-groups or families within the First Nation and managed under the principles consistent with sustainability (Richardson, 1982). Wealth was traditionally measured in prestige, which was developed based on how much the head of house had available

in support of their kin-group, and excess to give away in potlatch. Social sanctions ensured the resources were not over-harvested. These cultural ways assisted in the balancing of wealth between kin-groups, and reflected the successful management (and conservation) of family resources. The potlatch, as described by Suttles, is one of a group of mechanisms by which resources, primarily food, were shared among affinal communities in times of surplus. This resulted in an overall balancing of the socio-economic systems where one community could “bank” a temporary surplus as credit for food received by other communities where it was not as abundant (Suttles, 1987c)⁶. Chapter 1 examines Coast Salish social institutions, such as the potlatch and its role in resource management in more detail.

Although government recognizes that the economies of coastal communities dependent on marine resources are tied to sustainable resource harvesting, fisheries are currently managed with the goal to extract the greatest economic gain for the needs of the present without impairing the ability of future generations to meet their own needs (sustainable development for an intergenerational mandate) (Canada, 2002a). But this type of sustainable development often misses the mark in supporting local communities, both First Nation and non-First Nation, having historic dependence upon marine resources by decreasing the number of small boat fishers and increasing industrial style fishing (Pinkerton and Weinstein, 1995).

In today's society, First Nations also wish to benefit economically from the resources to which they have not ceded their rights or title to (CSSP, 1995a, 1995b). Hul'qumi'num see current fisheries management strategies as over-exploiting the resources (especially those with quota systems). Under these strategies, a few individuals reap a high economic gain where, traditionally, fewer resources supported whole coastal communities. First Nations argue that an intergenerational mandate to ensure sustainable resource use needs to include the sustainability of coastal communities, such as Hul'qumi'num. A reallocation of resources to local communities and the development of community-based management will increase sustainable development that addresses the community's needs and the sustainability

⁶ This may also explain the large traditional territory (Figure 1.1), as abundance varied across this geographic range, the potlatch system allowed a balancing of resources between areas abundant or scarce in resources from year to year.

of resources (Fauzi and Buchary, 2002). This reallocation would support the principle of “taking only what you need” where resources sustained communities nearby.

As an example, the Land and Resource Management Plans (LRMPs) on the Central Coast and North Coast of B.C. (a primarily terrestrial exercise) are proposing to address First Nations and local community needs. The Coast Information Team (CIT), an independent science body assembled to make recommendations on the land-use in coastal BC, recommends that co-management relationships be developed, that community harvest areas be designated and that sensitive ecosystems be protected in a system of protected areas and through the implementation of ecosystem-based management (CIT, 2001).

Sustainability as a principle provides a mechanism to address the Hul’qumi’num principle of “taking only what is needed” through recognizing the intergenerational mandate of providing resources for future use. However, current definitions of sustainability do not adequately address the sustainability of communities that depend upon resources for sustenance and economic use.

The Principle of “Respecting Marine Resources”

“If you treat that food right by sharing it with those that don’t have anything that helping hand will always come to you” (Penelakut elder).

“My grandparents used to say when you are done eating those clams you should take the shells back down to the beach and put it back where it came from” (Penelakut elder).

“Food comes to you if you treat it right” (Penelakut elder).

Respecting each other and respecting marine resources is fundamental to the traditional Hul’qumi’num culture. This principle is still regarded as extremely important in a contemporary sense, as evidenced in Figure 2.1. The relationship among humans (and their ancestors) has been explained by a Chemainus elder as dependent upon the respect between humans and their resources. The connection to the land and sea and the resources is an important component of the Hul’qumi’num way of life. The principle of “respecting marine resources” does not have a counterpart in Government principles regarding resource management in the same

context as it does for Hul'qumi'num. The sharing of the same essence between human and non-human life forms involved in indigenous worldviews leads to a respectful relationship, and is described as the ethic of reciprocity (a state of mutual exchange) which includes the concept that all life exists on the same level (including humans) (Kew and Griggs, 1991; Berkes, 1999). This practice translates well to a conservation ethic (as articulated by authors such as Aldo Leopold (1966) and Gary Snyder (1990)) where the idea that reduced stocks of resources are the result of improper human behaviour, including over-harvesting, which through adaptive management may lead to encouraging a long-term perspective and wise and judicious use of resources. Government principles demonstrate a commitment to a conservation ethic in Canada's Oceans Strategy, in promoting stewardship defined as "acting responsibly to conserve the oceans and their resources for present and future generations" (Canada, 2002a:vi).

Hul'qumi'num people's sense of place is rooted in their relationships to the land and resources around them (Thom, 2004). Their long history and successful existence in this area provides evidence of a complex understanding and relationship to resources that to date has not been achieved in "western" Canadian populations in the same sense.

The Principles of "Caring for All Marine Resources Whether they are Used by Humans or Not", "Everything is Connected" and Ecosystem-Based Management

"The canoe in the old days would take you anywhere to find your food, it could take you to travel and visit your friends, it could take you and make you play in the races. The cedar can do that, that is why the cedar is so precious to our old people, they put it on as a mask and it teaches you to be humble and kind" (Penelakut elder).

Hul'qumi'num consider themselves as an essential component of the ecosystem within which they live, without which the ecosystem will not function optimally. This relationship does not represent an anthropocentric view that the ecosystem is dependent upon Hul'qumi'num, but rather that the connections between both past (ancestors) and present Hul'qumi'num are dependent upon the respect provided by the resource when Hul'qumi'num show resources respect (i.e. "everything is connected"). "Caring for all marine resources whether they are used

by humans or not supports the Hul'qumi'num worldview of an understanding that all things share the same life force or energy (worldviews and their relationship to traditional management are discussed in Chapter 1). The principle of "everything is connected" is similar to current philosophies in "fostering ecosystem-based management" and "integrated management" of the natural environment. Though similarities in these principles are evident, a fundamental difference in the worldviews between Hul'qumi'num and western science appears to exist. Grumbine (1994) in "*What is Ecosystem Management?*" described humans as embedded in nature. This philosophy is premised by managing human impacts on ecosystems. This approach recognizes the importance of protecting ecosystem integrity and upholds that in order to manage human impacts on the environment, managers must consider all parts of the ecosystem (Stanley, 1995). This is contrasted with the Hul'qumi'num philosophy that humans and the ecosystem are one. Berkes (1999) describes the *knowledge-practice-belief* components of traditional knowledge as being inter-related. For example, when discussing beach resources, such as clams, Hul'qumi'num maintain that without their constant influence of turning the soil and removing the larger clams, the beaches would "die" through over-crowding and de-oxygenation. The *knowledge* is a detailed understanding of clam life history and reproduction. The *practice* is the action of tending the beach (similar to gardening). The *belief* is that without Hul'qumi'num presence the beach would "die". An experienced Hul'qumi'num clam digger knows when to harvest a beach and how to dig without breaking a single clam (Penelakut elder pers. comm., 2004).

The philosophical concepts of embeddedness and connectivity are similar between Hul'qumi'num worldviews and ecosystem-based management. The difference is that Hul'qumi'num see themselves as an integral part of nature, connected at a first hand level, where ecosystem-based management strives to encompass the concepts of embeddedness and connectivity as a means of managing human impacts.

The differences between the Hul'qumi'num and government philosophies could also be interpreted as a difference in scale of impact. Traditional Hul'qumi'num impacts on local ecosystems would be considered many times less in

magnitude than current human impacts on the world biosphere. It is likely that impacts to ecosystems occurred in traditional Hul'qumi'num life, from traditional management practices such as regularly digging clams, creating clam gardens or burning Garry oak meadows for enhancing growth of camas and other culturally important plants, in the production of staple foods, indirectly increasing biological diversity (Deur and Turner, in press). Hul'qumi'num managed these impacts through social sanctions and principles of "taking only what is needed" and "respecting resources".

The Government of Canada in Canada's Oceans Strategy commits that "conservation based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment" (Canada, 2002a:6). Government management systems are tasked with balancing limited funding resources and integrating of resource conservation strategies among agencies. This makes it difficult for managers to allocate resources to develop strategies, effectively monitor and adaptively manage. The development of a Memorandum of Understanding (Canada, 2004) for the implementation of Canada's Oceans Strategy between federal and provincial governments provides an avenue through which to begin ecosystem-based management. However, the development of the MOU had been completed without the participation of First Nations.

Although an improvement over single species management and a potential avenue to address in part, Hul'qumi'num worldview by recognizing the connections between species and ecological integrity, ecosystem-based management does not fully encompass nor reflect the principles outlined in the Hul'qumi'num worldview. It may not be possible to achieve this consistency as the impacts humans now have on ecosystems is at a much larger scale than considered in traditional management and requires more aggressive strategies.

The Hul'qumi'num principle of "everything is connected" has similarities to ecosystem-based management where there is recognition of the interdependence among species (including humans) within an ecosystem. However, the Hul'qumi'num philosophy is nested within their worldview and incorporates the spiritual relationship with the resource. The movement towards contemporary

ecosystem-based management provides an opportunity to include TEK and foster co-management of marine resources where Hul'qumi'num principles can be addressed. Recognizing a meaningful contribution to resource management by including TEK and co-management in the practice of ecosystem-based management will increase its relevance consistent with Hul'qumi'num principles.

The Principle of “Developing an Understanding of Marine Resources through Harvesting” and “Adaptive Management”

“You learn faster if you go along the beach, see the kinds of seaweeds (and other foods) the Indians used to eat” (Penelakut elder).

Hul'qumi'num traditional resource management was undertaken by the resource harvesters applying traditional ecological knowledge (TEK) developed through social and cultural teachings and first hand experience. TEK often provides a more holistic perspective of the complex ecological relationships within one place than does western science (Hipwell, 1998). The scope of this knowledge is broad in a temporal range and qualitative, where often-complex ecosystem processes have been observed and catalogued over extensive periods of time (Kurien, 1998). The principle of “developing an understanding of marine resources through harvesting” relates to Hul'qumi'num's view that the harvesters had a direct relationship with the resources they harvested, developed through years of traditional ecological knowledge, and therefore were best suited (as opposed to non-harvesters) to manage.

The government principle of adaptive management, as a component of integrated management (Canada, 2002a), has similarities to the Hul'qumi'num principle of “developing an understanding of marine resources through harvesting.” Adaptive management is a process whereby as new information is identified and evaluated, a determination is made as to whether or not to adjust the management strategy. It requires a great deal of monitoring and information feedback, combining management, research and monitoring information and allowing management to remain flexible and adaptive (Grumbine, 1994; CSSP, 1995a; Lessard, 1998). Adaptive management is similar, in its practical application, to Hul'qumi'num management, where resource harvesters developed a detailed understanding of resources through harvesting and adapted their management practices over time

(Suttles, 1987c) enabling continued occupation of the area. Flexible and adaptive management, as described in Canada's Oceans Strategy (2002), provides a technique to deal with uncertainty and improvements in the understanding of marine species and ecosystems.

Another similarity between these two principles relates to the consequences of not learning from management mistakes. Consequences for Hul'qumi'num, in traditional times, were great if resource management systems failed. The development of social systems that promoted sharing between affinal groups, provided a means to deal with resource scarcity. Suttles (1987c) describes the times of scarcity as a potential means of explaining the development of elaborate social systems, which included the "search for prestige" (Suttles, 1987b:50). Prestige was measured in part in material wealth that could be traded or gifted to others. Accumulating wealth, in the form of materials to be shared or gifted, promoted traditional adaptive management. "A man who could produce more food could release some of the members of his household from food-producing activities and let them produce wealth, and he could attract more food-producing and wealth-producing persons to his household as wives for himself" (Suttles, 1987c:22). Employing strategies of adaptive management increased the management effectiveness, thus increasing available resources for food helping to gain prestige.

A recent example of scientific management inconsistent with the principles of adaptive management and the practice of ecosystem-based management was witnessed with the collapse of the East Coast of Canada cod fishery, where managers (and fishers in some cases) distorted scientific data, which hindered adaptive management and allowed the fishery to continue in an unsustainable manner (Pinkerton and Weinstein, 1995). This event had huge implications for the economic status of communities on the East Coast of Canada. Current policies of adaptive management adopted in Canada's Oceans Strategy are designed to minimize events like the East Coast cod crisis in the future.

The incorporation of TEK into integrated management that is adaptive will also provide time-tested information from indigenous resource managers who have direct on the ground traditional knowledge. This will complement scientific resource

information for government managers who often rely solely on data collected through scientists and commercial fishers.

In summary, some similarities exist between Hul'qumi'num principles of "developing an understanding of marine resources through harvesting" and the government principle of adaptive management as part of an overall integrated management framework. Hul'qumi'num adaptively managed in the past, in particular response to times of scarcity, and governments are integrating management within different government agencies to allow adaptability through science-based learning. Using TEK will complement science-based knowledge and increase the relevant information used to adaptively manage.

2.7.2 A Comparison of Marine Conservation Goals and Objectives

A number of marine conservation goals and objectives were highlighted as extremely important for more than 60% of survey respondents and included "ensuring marine resources that are healthy and free of contamination", "rehabilitation and restoration of marine resources", "increasing marine resource availability for food and cultural purposes" and "reconnecting Hul'qumi'num to the marine environment" (Figure 2.3). The erosion of the traditional relationship to marine resources through colonization and its effects on the Hul'qumi'num culture may bias Hul'qumi'num goals and objectives for marine conservation and increase the importance placed on availability of marine resources for Hul'qumi'num harvest. For example, loss of access to marine resources can and may influence the degree of importance participants placed on the category "increasing the number of marine resources available for food and for cultural purposes". However, the consistent agreement of survey respondents with survey goals and objectives as ideals may indicate the contemporary strength of the Hul'qumi'num culture and traditional relationship to resources by the continued existence of these ideals. Chapter 3 discusses limitations to access and conserving marine resources highlighted by survey participants in more detail.

The continued transference of marine conservation principles and goals and objectives, as documented in the focus group three with the youth (Table 2.2), was

unexpected given the constraints, poverty, loss of access, disconnection from culture and loss of the Hul'qumi'num language that has resulted since colonization. However, social institutions, such as the Big House (or Long House), remain intact in most communities. In these settings in particular, cultural teachings continue to be passed down to younger generations, mostly through the practice of gathering and harvesting marine resources to take care of family members in the Big House (Chemainus elder, pers. comm., 2004). Marine conservation goals and objectives of the youth, discussed in focus group three indicated similarity between the other survey participants in their desire to restore populations of marine resources, to use traditional knowledge when managing and to re-connect Hul'qumi'num to marine resources. Interesting differences were also noted in an apparent concern that Hul'qumi'num people also need to practice their traditional teachings of taking only what is needed, that there is a need for marine conservation education, institutional development for marine conservation, the use of TEK with scientific knowledge to manage. Although the teachings are being passed down through the big house and families the youth commented that if Hul'qumi'num practiced responsible conservation they would be the ones to benefit the most. This referred to the strong food reliance on marine resources and to recognition that an increase in marine resources, through responsible conservation, will result in more marine foods for Hul'qumi'num. However, the results of focus group three cannot be considered representative of all Hul'qumi'num youth as these participants were chosen based on their involvement in the treaty process. It is also possible that the youth perspectives on marine conservation are influenced at school and through the media. These influences were not explored in this study.

Goals and objectives for marine conservation highlighted by Hul'qumi'num survey participants and the youth focus group have similarities to government goals and objectives for NMCAs (Canada, 1994). The contemporary Hul'qumi'num goals and objectives of "ensuring marine areas that are healthy and free of contamination", "rehabilitating and restoring marine resources", "increasing marine resources available for food and for cultural purposes" and "reconnecting Hul'qumi'num Mustimuhw to the marine environment and resources" are concepts that can be

supported by a NMCA. The goals and objectives supported by over 60% of participants from Figure 2.3 are compared with a NMCA goal and discussed below (Table 2.4).

The Goals of “Ensuring Marine Areas that are Healthy and Free of Contamination” and “Rehabilitate and Restore Marine Resources” and Establishing a System of Marine Conservation Areas to Maintain Healthy Marine Ecosystems

The Hul’qumi’num goals of healthy marine resources that are free of contamination, and to rehabilitate and restore marine resources reflect the understanding of the current state of contamination in the Hul’qumi’num territory. Many traditionally harvested beaches are now contaminated (Figure 2.8), as a result of either industrial or human and animal fecal wastes that are discharged into the marine environment. The traditionally heavy reliance on marine protein by Coast Salish people (Chisholm *et al.*, 1983) if continued today in the Hul’qumi’num territory may result in serious health implications if food was harvested from contaminated areas. The impacts of land-based activities on marine ecosystem health are important to understand when managing marine ecosystems. Marine planning should include the land-water interface. Future goals and objectives for marine resources include rehabilitation and restoration of contaminated or damaged areas. Contamination limits Hul’qumi’num ability to harvest marine resources and is connected to their perception of resource availability.

Establishing a system of marine conservation areas to maintain healthy marine ecosystems may begin to address the Hul’qumi’num goals and objectives. Focusing management efforts on promoting healthy marine ecosystems, rather than industrial development or strictly economic activity is consistent with Hul’qumi’num values.

“Increasing the Numbers of Marine Resources Available for Food and for Cultural Purposes” and Providing Opportunities, through Zoning, for Ecologically Sustainable Use of Marine Resources

As discussed above, availability of marine resources in Hul’qumi’num territory is limited by contamination and habitat impacts. The connection to the sea and its resources for food and cultural purposes is a strong component of the

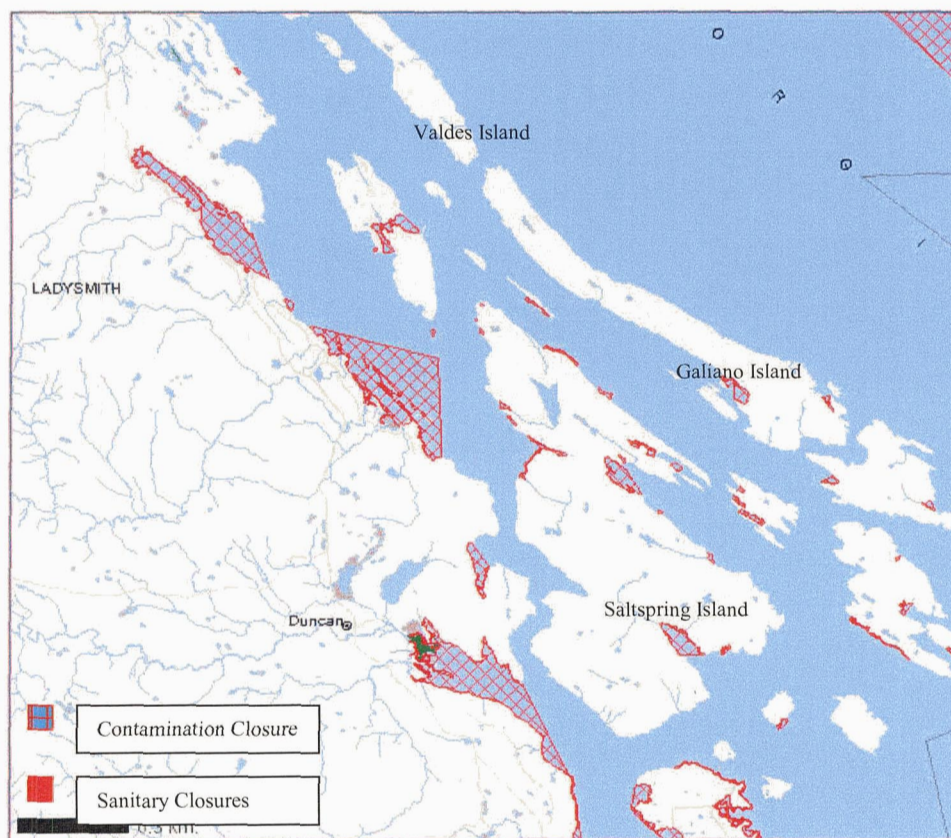
Hul'qumi'num culture. The development of NMCAs may support the Hul'qumi'num goals by managing for sustainable use of marine resources.

Table 2.4: Hul'qumi'num and Government Goals and Objectives for Marine Conservation

<i>Hul'qumi'num Goals and Objectives (from figure 2.5)</i>	<i>Government Goals and Objectives</i>
<i>Traditional Fishing Territory</i>	<i>National Marine Conservation Areas</i>
<ul style="list-style-type: none"> - Ensuring marine areas that are healthy and free of contamination - Rehabilitate and restore marine resources 	<ul style="list-style-type: none"> - Establish a representative system of marine conservation areas to maintain healthy marine ecosystems - Contribute to the establishment of a world-wide network of MPA and consider ecosystem implications
<ul style="list-style-type: none"> - Increasing the numbers of marine resources available for food - Increasing the numbers of marine resources available for cultural purposes 	<ul style="list-style-type: none"> - Provide opportunities, through zoning, for ecologically sustainable use of marine resources
<ul style="list-style-type: none"> - Reconnecting Hul'qumi'num Mustimuhw to marine environment and resources 	<ul style="list-style-type: none"> - Provide opportunities to appreciate and enjoy natural and cultural marine heritage - Consider traditional ecological knowledge in planning and management of marine conservation areas, involving all that are affected

Literature Sources:(R.S.C., 1996;Canada, 1998, 2002a, 2002b,)

It is important to highlight that NMCAs are managed for sustainable use and include extractive uses, differing from national parks that are managed primarily for their ecological integrity (Canada, 1994). Zoning in NMCAs may benefit Hul'qumi'num by increasing the focus on sustainable use and promoting management cooperation among responsible agencies. However, zones under strict protection do not support Hul'qumi'num goals of increasing access to marine resources.



Map Courtesy of MAPSTER, DFO

Figure 2.8: Contamination in Hul'qumi'num Core Traditional Territory

The Goal of “Reconnecting Hul’qumi’num to the Marine Environment and Resources” and Provide Opportunities to Appreciate and Enjoy Natural and Cultural Marine Heritage

Reconnecting Hul'qumi'num to the marine environment and resources will be achieved through a number of different means. Re-habilitating and restoring areas that are contaminated or damaged will increase the availability and possibly the abundance of marine resources. The connection that Hul'qumi'num have to the marine environment is based on a food and cultural dependence (which includes a spiritual context). The goal of providing opportunities for appreciating and enjoying natural and cultural heritage was not an objective highlighted as important by

Hul'qumi'num people surveyed. This could be due to how important marine resources are to the Hul'qumi'num for subsistence, whereas for many tourists marine resources are a curiosity and they do not have a traditional dependence upon them. It also may be due to the fact that in many current Canadian Parks archaeological sites have been impacted, damaged or destroyed by "over-appreciation" resulting from uncontrolled access (McLay, 2002). However, the youth focus group identified the goal of "developing relationships between Hul'qumi'num and non-Hul'qumi'num" that might be addressed in an NMCA zone that promotes appreciation of natural and cultural heritage.

The UNESCO World Heritage Site, "Head Smashed-In Buffalo Jump", located near Fort McCleod, Alberta provides a positive example of an interpretive centre highlighting and protecting an important aboriginal archaeological site of the Siksikay, Kainai and Pekuni Tribes (HSI, 2004). The Haida Nation in BC has also worked cooperatively with Parks Canada to establish the Haida Heritage Site and manage the Gwaii Haanas National Park Reserve minimizing recreational impacts to the area. Visitors are required to complete an orientation session before entering the park and a Haida Guardian program has been established to protect Haida heritage sites and oversee the use of the park (Gwaii Haanas, 2001).

In summary, similar to MPAs, NMCAs seem to provide an opportunity to manage more consistently with Hul'qumi'num goals and objectives for marine resources. Maintaining healthy marine ecosystems supports the Hul'qumi'num goals of maintaining marine resources that are free of contamination and rehabilitating and restoring marine resources. Dissimilarities are noted between the goal of "re-connecting Hul'qumi'num to marine resources" and MPA and NMCA goals of creating areas or zones of strict protection and the use of marine areas for appreciating and enjoying natural and cultural heritage.

2.7.3 Traditional Management Systems Informing Current Management Regimes

In the contemporary world, resource managers deal with the conflict in seemingly opposing objectives - ensuring ecological conservation while providing for economic development opportunities. Extraction of "goods" from the marine

environment often does not take into account the effect on the ecosystem or food-chain, although Fisheries and Oceans Canada policy (Canada, 1998) is based on the concepts of ecosystem-based management and the precautionary principle. The extraction of resources without regard to other predator-prey or food-chain effects would appear to conflict with the worldview of taking only what is needed and that everything is connected. The traditional principle or customary law of taking only what is needed was determined by the resource harvester. Harvest levels were determined through individual assessment. If an excess of resources was available for harvest, they were shared among community members or house groups. Excess resources were also traded and bartered. Although an economic relationship to marine resources still exists today for First Nations, fundamentally different values than those in contemporary society drive the relationship. Social institutions, such as the potlatch system of wealth redistribution were based on a concept of sharing that led to prestige rather than wealth accumulation. Wealth in resources translated to prestige as that wealth was re-distributed throughout the relationships of a family kin group.

First Nations today seem caught in a paradigm shift, where holding true to traditional values and taking only what is needed and sharing wealth, is contrary to an approach that attempts to maximize economic yield. The separation between food, social and ceremonial fishing and that of wealth generation fishing is an artifact of western management regimes where maximizing economic gain from management activities is optimal when managers are trying to extract the maximum value from fisheries (Deweese, 1998; EcoTrust, 2004).

Overcoming the inherent conflicts between proposed systems of ecosystem-based management and maximizing economic gain from resource extraction will require a significant shift in government policy and management of marine resources including expanding mechanisms to transfer economic gain from resource harvesting to local communities. Traditional systems of management will also have to adapt to new understandings in science on ecosystems and to cope with the level of anthropogenic impacts caused by the increased human population in the Coast Salish area. The relationships between resource management and traditional ecological

knowledge (TEK) are discussed by Berkes (1999). In his paper he explores the system of *knowledge–practice–belief*, which led to adaptive management, in the definition of cultural and social systems. Worldviews, social institutions, land and resource management systems and local knowledge form a framework for analyzing TEK (Berkes, 1999). Berkes (1999) comments that the four levels (worldviews etc.) are often not distinctive and that cross-over occurs between social institutions and management systems. Also, as local knowledge increases management systems evolve. Worldview may also evolve as adaptive management is applied. The Coast Salish peoples also exhibited adaptive management strategies (Suttles, 1974) and will continue to be adaptive in contemporary time.

Traditional management systems, worldviews and contemporary measures of successful marine resource management provide insight for current government management regimes. It is interesting to note that there was strong agreement for using past management practices today, including not harvesting areas for a few years to allow marine resources to recover and including elders from the Hul'qumi'num community in management (Figure 2.5). Regularly digging beaches potentially enhanced resource production, increasing the food sources available in the area. Although ownership of harvesting sites, vested in communities or family groups, was a well-known Coast Salish practice, only 25% of survey participants agreed with using this practice today. This may be due to the current limitations to accessing marine resources and participants' experience with not being able to harvest from community beaches that were not their own communities or from lack of access caused by aquaculture or other foreshore leases.

Principles for management strongly agreed to by survey participants (Figure 2.6) were primarily focused on the involvement of First Nations in present day management. This is consistent with the goals and objectives for managing NMCAs that include considering traditional ecological knowledge in planning and management of marine conservation areas (Canada, 2002b). Participants highlighted including traditional knowledge, sharing the responsibility for conserving and protecting marine resources, respecting First Nations rights and involving First Nations in managing for conservation. Interestingly, there was strong agreement

(70%) that management should extend beyond international boundaries, which coincides well with ecosystem-based management. Survey participants also strongly agreed that conservation restrictions should apply equally (61%) to everyone, underscoring their role in conserving marine resources. This result may also be explained through the perception that, based on traditional teachings, when Hul'qumi'num learn that marine resources are low in an area they voluntarily conserve while other non-First Nations do not. However, as the traditional teachings are eroded or lost and Hul'qumi'num are influenced by biosphere people perspectives and continually have to assert aboriginal right to marine resources, voluntary conservation is often strongly opposed.

Understanding how Hul'qumi'num would measure the success of a marine conservation plan (Figure 2.7) provides management direction both for government and for managers internal to the Hul'qumi'num nations. The Hul'qumi'num fishing economy, supported by marine resources, has declined over the past 100 years. Survey participants indicated a measure of success would be an increase in marine resources sufficient enough to allow living to be earned from harvesting. Restoring marine resource production in the Hul'qumi'num territory to enable enough marine resources to be harvested to feed all Hul'qumi'num was also a measure of success highlighted by survey participants. However, the ability to harvest marine resources for food is also contingent on having enough beaches that are not contaminated and that access is not limiting.

Although some contemporary principles for management were expressed, such as "conservation restrictions should apply equally to everyone", the principles, goals and objectives for marine resource management were strongly tied to traditional management systems. How worldviews, social institutions, traditional land and resource management systems and traditional ecological knowledge can inform current management of marine resources is discussed in the following sections.

Worldviews and Ecosystem-based Management

Ecosystem-based management and initiatives towards conservation in marine environments include concepts similar to First Nations' worldviews and require the incorporation of First Nations needs in resource management (Gardner, 2001). Berkes *et al.*, (1998), describe ecosystem management-like concepts existing among traditional people of the Pacific Northwest of Canada, where nature is often defined with geographic boundaries, such as watersheds and all abiotic and biotic components are considered linked (Berkes *et al.*, 1998). Worldviews are described by Berkes *et al.*, (2000: 1259) as rounding out the *knowledge-practice-belief* concept by providing "appropriate environmental ethics". The current shift of conventional science towards an ecosystem approach offers an opportunity to integrate TEK into current management systems and understand and restore complex ecosystems to achieve sustainable use of resources (Turner *et al.*, 2000). However, a difference would appear to exist in how First Nations view themselves as an integral component of the ecosystem and the current ecosystem-based philosophies that provide adaptive strategies to minimize human impact on the environment. It is clear that in today's world, humans are having a dramatic impact on the world environments; therefore management of these impacts is required. Traditional societies likely managed impacts through social sanctions, harvesting restrictions and the use of TEK. Incorporating the ecosystem supporting activities undertaken by First Nations into ecosystem-based management philosophies will provide benefits to resources and human communities.

Traditional Social Institutions as a Movement towards Closing the Commons

The dependency of First Nations communities on resources through time, over many generations, resulted in an evolution of social institutions to reflect the needs of the resources (Weinstein, 2000). The potlatch system was, in effect, among other roles, a regulatory mechanism that ensured that resources were not over-harvested (Onat, 1989). Wealth and prestige were obtained by sustainable harvest whereby resource harvesters had a stake in maintaining healthy resources. Redistribution of wealth encouraged community well-being and led to an advanced economic

relationship to resources (Suttles, 1987b). Accumulation of prestige, related to the giving of wealth, was a priority.

This vision of what defines “wealth,” as the ability of an individual to share and give, significantly differs from contemporary western society. The open commons system employed during colonization led to a free-for-all attitude and a competition-based approach to the harvest of marine resources. This phenomenon promoted the offloading of management costs and resource impacts to society while individuals were able to pursue private benefit (Berkes, 1985). This often resulted in over-harvesting and un-sustainable fisheries. To regulate harvests and avoid the tragedy of the commons (Hardin, 1968) governments have created regulatory quota systems or harvest restrictions for some fisheries that are managed to maximize a sustainable yield where individuals or corporations can “own” the harvesting rights to specific resources. Current management policies result in a race for the fish, which has increased fishing capacity beyond sustainable levels and has led to the collapse of many fish populations (Pinkerton and Weinstein, 1995; Pauly *et al.*, 2002). The open commons system and the development of private property rights that benefit an individual contrast sharply with the communal social institutions of Coast Salish peoples.

New policies for the establishment and management of marine parks and protected areas may provide an opportunity for current social institutions to reflect traditional resource management. MPAs, created under Canada’s *Oceans Act*, provide a means to close a part of the commons and move back to a more traditional management level of pressure on the resources of the area. Although these areas may not be held in tenure by communities, First Nations, with constitutionally protected rights to harvest marine resources, will be the only user group still permitted to harvest within MPAs. However, the governments’ vision of MPAs includes zones where even First Nations would not be able to harvest.

NMCAs provide an integrated approach to managing marine habitats and sensitive areas. The goals and objectives of NMCAs appear to move government closer to a worldview more consistent with that of Hul’qumi’num. Management

philosophies for NMCAs, such as ecologically sustainable use and ecosystem-based management begin to address the worldview that everything is connected.

Traditional Land and Resource Management Systems as Community-based or Co-management Regimes

Traditional resource management systems included ownership of productive resource harvesting locations by communities or family groups (Deur and Turner, in press). This is similar to other indigenous resource tenure systems in other parts of the world, such as Oceania and New Zealand (Adams, 1998; Lam, 1998). Establishing areas where communities can benefit from and manage resources surrounding them through a system of tenure or community ownership, provides a mechanism to effect a community management regime. To reflect the tradition and culture of the Hul'qumi'num, and to ensure that they gain access, once again, to marine resources, the Hul'qumi'num have considered lobbying to establish a network of Hul'qumi'num Management and Harvest Areas (HMHAs) for the sole use and management of the Hul'qumi'num Mustimuhw. The HMHAs are, potentially, a type of management area where it may be possible to manage on a community-based and ecosystem level by including all species and habitats and to construct a conservation ethic into the management and harvest zoning for the area. Having a traditional focus by incorporating the principles of tenure of marine harvesting areas, these areas have similarities to MPAs but are governed by communal needs and values. HMHAs may provide an opportunity for the Hul'qumi'num to re-introduce traditional social institutions where appropriate. Community-based management (or a type of co-management) and the establishment of First Nations harvest and management areas may provide a vehicle for development of a contemporary version of traditional land and resource management systems, enabling communities that depend upon resources to have a significant role in their management. This concept is explored in more detail in Chapter 4.

Hul'qumi'num traditional resource management practices were built around a primary relationship to the resource. This relationship is direct and usually involved harvesters as the managers. Hul'qumi'num communal systems of resource sharing and the accumulation of wealth through effective stewardship, contrast significantly

with government policies of an overall management system for the good of all Canadians, where marine resources are held in common. Today's system of management is primarily achieved through a top-down approach where management is three steps removed from the marine resource and is often driven by biological and economic information. Communities who directly depend on resources, such as coastal First Nations, are excluded from the management decisions or relegated to compete with other stakeholders who often have strong political voice (Jones and Guénette, 2002). Co-management relationships between governments and First Nations can offset top-down management approaches by recognizing First Nations' inherent rights to resources and accommodating their needs.

Hul'qumi'num community members clearly indicated a desire to be involved in managing marine resources within their traditional territory. Over 97% of survey participants indicated they agreed (strongly or somewhat) with involving First Nations in managing for conservation (Figure 2.6).

Although Fisheries and Oceans Canada is taking the lead role in Canada's Oceans Strategy many overlaps among government departments and between federal and provincial initiatives exist. The recent Canada/BC Memorandum Of Understanding (MOU) on Canada's Oceans Strategy (Canada, 2004) begins to address these overlaps by defining the visions for Federal and Provincial initiatives and outlining subsequent MOUs to be negotiated. If true co-management is to be achieved, as desired by First Nations, governments must begin to include First Nations in decisions and agreements, such as the development of the Canada's Oceans Strategy and the subsequent MOU.

Parallel use of TEK and Western Science to Inform Management

As a traditional science, TEK will help inform scientists using western science in managing human interactions with complex marine ecosystems. The use of TEK has often not been accepted in the scientific community for a number reasons, such as a general resistance to changes required in using TEK in current scientific methodologies and possibly an uneasiness with social science and its applications (Huntington, 2000).

TEK often provides a more holistic perspective of the complex ecological relationships in one place than does western science (Hipwell, 1998). The scope of this knowledge is broad in a temporal range and qualitative where often-complex ecosystem processes have been observed and catalogued over extensive periods of time (Kurien, 1998).

A potential difficulty in using TEK to enhance marine resource management is the focus on location-specific information relating a level of ecosystem connectivity, which is at odds with management regimes currently followed by government. However, the government's Department of Fisheries and Oceans has added to their management approaches principles such as adaptive management, precautionary approach, integrated management, ecosystem-based management and regional flexibility in management regimes (Dearden, 2002). Including local TEK as an equal to conventional science is essential to developing effective co-management arrangements (Hipwell, 1998). TEK provides practical time-proven social adaptation to ecosystem change (Berkes *et al.*, 1998) through environmental feedback mechanisms constructing traditional systems that managed resources in an adaptive way (Berkes *et al.*, 2000).

2.8 Conclusions

Marine conservation from the Hul'qumi'num perspective has similarities and differences when compared to developing western conservation management institutions. Hul'qumi'num principles for marine conservation have similarity to those in an NMCA. The implementation of an National Marine Conservation Area within the core territory of the Hul'qumi'num may provide a means of addressing Hul'qumi'num goals and objectives for marine resources. A similar shift in Parks Canada's strategy for maintaining the naturalness of national parks to maintaining ecological integrity through active management is apparent in the NMCA philosophies. This shift in principles demonstrates an awareness of the dynamic nature of marine ecosystems resulting in a different approach, and, in effect moves government on the spectrum of worldviews more towards Hul'qumi'num approaches.

The difference between worldviews on humanity's "place" in the marine ecosystem and their relationship to marine resources (the ethic of reciprocity and

taking only what you need) creates conflict between government and First Nations when management measures for marine resources, including marine conservation efforts, are proposed in a top-down manner. The movement towards including communities in decisions, co-management of resources, ecosystem-based management and integrated management of marine resources begins to address some of the issues in this conflict. However, the exploration of co-management or community-based management of marine resources, to address the “reconnection of Hul’qumi’num (and other First Nations communities) to marine resources” requires a fundamental shift in current strategies for marine resource management. Examples from other parts of the world, described in Section 2.2.1, provide valuable insight and lessons learned.

The government principle of “sustainable development of resources” has some similarities to the Hul’qumi’num principle of “taking only what is needed”. Ensuring resources are available for future generations is one of the concepts tied to sustainable development, and in a traditional sense “taking only what is needed” also ensures resources were available for the next harvest. *Need* for Hul’qumi’num also included resources that were harvested to trade, barter and sell to neighbouring communities, and represented an integral component of the Hul’qumi’num culture (Suttles, 1974). Government management based on sustainability of fisheries resources should also include sustaining local communities that depend on resources. A movement towards community-based management is consistent with this goal.

Adaptive management principles have similarities to Hul’qumi’num principles of “developing an understanding of marine resources through harvesting” over time, and the inclusion of TEK will increase the knowledge base needed to adaptively manage local resources consistent with the concept of sustainability and ecosystem based management.

Creative solutions are needed to address the Hul’qumi’num principle of “maintaining all native species”. Many current examples of species that were traditionally abundant but are either considered in extreme decline or no longer available in the Georgia Strait already exist in Hul’qumi’num traditional fishing territory eg. humpback whales, halibut (DFO, 2000; Wallace *et al.*, 2002). MPAs and

NMCAs are examples of conservation strategies consistent with this principle. However, opposition from First Nations to the no-take areas has stalled their development on the British Columbia coast. Understanding how the concept of no-take areas is at odds with Hul'qumi'num worldview will provide managers with insight into First Nations' opposition and possibly allow creative, collaborative solutions. Chapter 3 examines Hul'qumi'num attitudes towards the establishment of MPAs.

NMCAs may provide another vehicle where both Hul'qumi'num and government goals and objectives for marine conservation can be addressed. However, the NMCA concept is difficult for First Nations as it includes support for MPAs (which includes zones considered no-take areas), which are generally not supported by Hul'qumi'num (see Chapter 3 for more details on this).

The Hul'qumi'num principle of "respecting resources" does not have a counterpart in government principles, although ecosystem-based management, in its bio-centric sense, does imply an inherent respect for the ecosystems that humans depend upon. Grumbine (1997) defines this respect as a reliance on functioning ecosystems where the needs of the ecosystem must be met first. Hul'qumi'num worldviews include all things as being one, or sharing the same essence, and translates to respect and reciprocity, which in turn leads to a conservation ethic. This Hul'qumi'num principle, along with the others discussed above, help to describe the Hul'qumi'num perspective on marine conservation.

Management of marine resources is, in theory, meant to be moving towards an ecosystem-based framework (Done and Reichelt, 1998). The complex nature of the marine environment makes defining ecosystems difficult. Marine conservation strategies being adopted by government have been to date, ineffective, as evidenced by the continued collapse of marine species (Done and Reichelt, 1998), such as some salmon stocks of the Fraser River. The lack of integrated conservation strategies and cooperation among agencies is costly and inefficient (Slocombe, 1998). All of these factors highlight the need for a new vision, establishing a set of principles from which to view marine resource management that includes First Nations values, culture and traditional ecological knowledge.

As governments are forced to recognize aboriginal rights, as reinforced by recent court cases, treaties and land claims agreements, policies and management will need to adapt. First Nations' traditional knowledge is currently being recognized by levels of government, such as Parks Canada and DFO, as important information to include in planning and management processes (Canada, 1998, 2002a, 2002b). Shifts in management away from institutional to community-based will increase participation of First Nations communities.

Parallels can be drawn between traditional resource management systems and some current management policies, in Canada and in other countries. The use of traditional knowledge in parallel with western scientific knowledge can create a more holistic picture from which to manage. Incorporating a principle of community-based management could provide a mechanism where communities that depend on resources would have responsibility, and therefore stewardship duties, to sustain fisheries because of that dependence. Resource harvest rights or traditional tenures of communities establish a mechanism for resources to be moved away from the open commons and individuals benefiting at the expense of local communities. Incorporating humans as part of the ecosystem and managing on an ecosystem level supports the traditional worldview of the Coast Salish peoples. The ideologies, institutions and practices that embodied Coast Salish culture and marine resource management historically stabilized resource exploitation to sustainable levels. The evolution of current management philosophies consistent with the culture, social systems and traditional ecological knowledge of the Coast Salish can help to develop sustainable marine conservation strategies.

The similarities between Hul'qumi'num and government principles, goals and objectives for marine resource conservation and management, described in this chapter, provide opportunities to establish a foundation and begin to build a "bridge" between western conservation science and traditional resource management systems. These similarities provide avenues to explore the development of a more holistic conservation science in Canada. Resolving the conflict associated with the dissimilarities in worldviews may not be possible. Dasmann's (1976) characterization of indigenous peoples as "ecosystem people" provides context to

understanding the Hul'qumi'num worldview that "everything is connected" and "respecting marine resources". As ecosystem people, traditional management systems were built on ecosystem function. Although Dearden (1996) states that in today's world ecosystem people must not be thought of as static cultures, acknowledgement and recognition of worldviews may further the ability to manage marine resources adaptively, especially if First Nations are fully involved.

3 An Exploration of Hul'qumi'num, Coast Salish Indigenous Peoples' Attitudes Towards the Establishment of MPAs in Georgia Strait, British Columbia, Canada

3.1 Introduction

As we move into an era where governments, planners and the general public are recognizing the anthropogenic impacts to the ocean environment and are focusing their efforts on marine conservation, the past, present and future relationships between humans and the marine environment are being explored. Some indigenous marine resource management practices in the past included humans as an integral part of the marine ecosystem. Marine conservation in today's world can benefit from understanding traditional resource management systems (Berkes, 1999). In Canada opposition from First Nations (indigenous people in Canada) has stalled marine conservation efforts such as the development of marine protected areas (MPAs).

Indigenous people world-wide, have managed and conserved marine resources for centuries by employing systems of marine tenure and customary practices. Scientists are interested in how these ancient systems can inform contemporary marine conservation initiatives and provide insight into the current opposition from First Nations to marine conservation. What limitations to accessing and conserving marine resources are currently faced by First Nations in the Georgia Strait, BC, Canada? Are MPAs viewed as a further limitation or are they viewed as potentially beneficial? Do indigenous people of the Georgia Strait support the application of MPAs, as a management tool for marine conservation? This paper explores these questions through a case study of the Hul'qumi'num, a Coast Salish indigenous people, of Georgia Strait region, British Columbia, Canada.

3.2 Literature Review

3.2.1 Oceans in Trouble

Increasing world demand and reliance on marine foods for protein has resulted in systematic over-fishing of many of the worlds' fish stocks (Pauly and Watson, 2003). Marine ecosystems have been altered through a number of anthropogenic effects to the point where they are no longer recovering at the rate they are being

damaged (Palumbi, 2002). Fishing activities, such as bottom trawling, are having an impact on the ecology of continental shelf regions worldwide (Safina, 1998; Pauly *et al.*, 2002). Fisheries are impacting on ecosystems and biodiversity by reducing the mean trophic levels of fish remaining in the marine food-web and inducing evolutionary changes in the characteristics of populations (Pauly *et al.*, 2002). As technology increases and overcapitalization of fisheries continues, fisheries that were once sustainable, simply due to the inability of the fisher to fish all of the productive locations, are being exploited and historically un-fished refuges are now being accessed (Pauly *et al.*, 2002). Estimates suggest that currently only 0.01% of the world's oceans are under effective protection (Pauly *et al.*, 2002). The disparity between the area of terrestrial habitat protected and that of marine habitat is primarily thought to be due to the view of the resources of the sea as open access (Cocklin *et al.*, 1998). The perception of the vastness of the ocean and its resources has exacerbated the problem. The recognition that oceans are in trouble has led to an interest in protecting marine and coastal environments. There is, therefore, good reason why marine conservation is at the forefront of oceans research and why coastal countries, including Canada, are beginning to move towards ocean conservation strategies. However, a wide array of solutions to effect marine conservation exists.

3.2.2 *MPAs as Part of the Solution*

The World Conservation Union (IUCN) defines MPA's as "any area of inter-tidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical, or cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" (Kelleher, 1999:xi). Scientists, coastal zone planners, resource managers and conservationists have recognized the applicability of MPAs for a broad range of marine conservation goals (Agardy *et al.*, 2003). MPAs are increasingly being used as part of an overall marine conservation strategy in many countries (Day and Roff, 2000). They are used to protect critical habitats, form refuges for over-exploited stocks, provide tourism opportunities and act as buffers for mismanagement or unforeseen events, such as oil spills.

Conserving representative habitats has been recognized as a means to conserve biodiversity and for over 40 years has been a goal of protected areas systems (Day and Roff, 2000). These authors advocate the development of a hierarchical framework for MPA planning based on recurrent geographic and oceanographic features of the marine environment. A similar hierarchical framework was developed by Zacharias and Roff (2000) where the framework is used to identify and suggest how marine conservation strategies could be developed using the compositional, structural and functional attributes of biodiversity at the genetic, population, community-ecosystem and landscape levels of organization (Zacharias and Roff, 2000). The socioeconomic, political and indigenous contributions to effective MPA design and implementation are also recognized as important to the success of MPAs and marine conservation (Agardy, 2000; Zacharias and Roff, 2001; Salomon *et al.*, 2001; NRC, 2001). The role of social science in fisheries management is being explored as managers, academics and communities grapple with the accelerating decline in fish stocks. MPAs that are chosen using science-based criteria are effective in conserving habitats and biological communities (Day and Roff, 2000). However, MPAs need to be nested within a marine conservation framework that protects species and habitats outside of reserves (Allison *et al.*, 1998), and will not alone protect the biological diversity in the oceans (Day and Roff, 2000). Links between parks, whether terrestrial or marine, and their surrounding landscapes/seascapes have led to a widely recognized need for connectivity in planning, management, public support and institutional cooperation. Protected areas, wilderness areas, parks, MPAs and conservation areas are not isolated islands or isolated bodies of water unto themselves. Maintaining ecological values requires connections within the landscape or seascape that allow species to migrate, and for wind, water and animals to distribute genetic material.

The theme of the recent World Parks Congress (2003) held in Durban, South Africa, was "Beyond Boundaries", focusing on the neglected areas of parks, people living next to the park, poverty, and other threats to the viability of parks (McClanahan, 2004). In his editorial, McClanahan (2004:2) states that "perhaps no further conservation can be realistically achieved without supporting the rights of

people that use renewable resources, alleviating poverty, improving measures of management effectiveness” and including communities that depend on the renewable and non-renewable resources in the conservation program. The suggestions for increasing the viability of parks outlined by McClanahan (2004) will be important in moving beyond the conflict between establishing effective protected areas and meeting the needs of local communities. Solutions for conservation are likely to underachieve or fail without the participation of the communities of people that surround them (Agardy, 2000).

At the Federal level three primary agencies in Canada are concerned with marine conservation. Fisheries and Oceans Canada, Parks Canada and Environment Canada have mandates to establish MPAs. Environment Canada has a specific mandate to focus on migratory birds and for the purposes of this study will not be discussed (only agencies concerned with fish and marine resources will be discussed). Table 3.1 (adapted from Dearden, 2002) outlines the powers and mandate granted to each agency for protecting marine areas.

The use of MPAs is a management mechanism that promotes maintenance of native species. There is now considerable scientific consensus on the effectiveness of the conservation role of MPAs (Russ and Alcala, 1996a; Russ and Alcala, 1996b; NCEAS, 2001; Francis *et al.*, 2002; Roberts *et a.*, 2002; Gerber *et al.*, 2002; Halpern and Warner, 2002; Lubchenco *et al.*, 2003; Link and Demarest, 2003; Halpern, 2003; Denny and Babcock, 2004; Gell and Roberts, in press). The effectiveness of marine reserves for increasing fish abundance can be linked to fishing intensity outside of reserves, composition of marine community, habitat characteristics and effectiveness of enforcement (Côté *et al.*, 2001).

Fisheries and Oceans Canada (DFO) has initiated four pilot MPA projects on the West Coast of Canada: Race Rocks; Gabriola Passage; Bowie Seamount; and the Endeavour Hydrothermal Vents. Only one of these pilot projects, the Endeavour Hydrothermal Vents, has been officially designated as an MPA. The proposed MPAs at both Race Rocks and Gabriola Passage have been the subject of opposition by First Nations.

Table 3.1: Federal Statutory Powers for Protecting Marine Areas*

Agency	Legislative Tools	Designations	Mandate
Fisheries and Oceans Canada	Oceans Act Fisheries Act	MPAs Fisheries Closures	To protect and conserve: Fisheries resources, including marine mammals and their habitats; Endangered or threatened species and their habitats; Unique habitats; Areas of high biodiversity or biological productivity; and Areas for scientific and research purposes. Conservation mandates to manage and regulate fisheries, conserve and protect fish, protect fish habitat, and prevent pollution of waters frequented by fish.
Parks Canada	National Parks Act Marine Conservation Areas Act	National Park	To protect and conserve for all time significant marine conservation areas of Canada that are representative of the 29 Natural Marine Regions of Canada, and to encourage public understanding, appreciation and enjoyment.

*Adapted from Dearden (2002) p.357

Source: Canada, 1997, 2002a, 2002b.

Note: The legislative tools, designations and mandate of Environment Canada are not included in the table above (as they were in the original Dearden table) as their focus is on migratory birds which were not included in this study.

Parks Canada's newest marine initiative is called the National Marine Conservation Area and is an effort to further marine conservation in Canadian waters. The Southern Gulf Islands Park Reserve also contains marine components.

3.2.3 Indigenous People and Parks

Around the world, parks are often areas traditionally used by aboriginal peoples (Dasmann, 1976; Elliott *et al.*, 2001; Peepre and Dearden, 2002). This can create conflict, especially if indigenous peoples are not consulted prior to the establishment of a park or are disallowed from practicing traditional activities within the park (Wells and McShane, 2004). A conservation agreement involving the community in sustainable management in Bunaken National Park, Sulawesi, Indonesia, has been developed to share rights and responsibilities in the community (Salm *et al.*, 2000). Salm *et al.* continue by describing the marine plan developed for this park as identifying zones: a core conservation (or sanctuary) zone; a diving zone; a traditional use zone for local communities; and, an industrial fishing zone for small and medium sized fishing boats. In the Philippines, community-based management of coral reef reserves has been on-going for two decades (since 1985) (Salm *et al.*, 2000; White *et al.*, 2002). In the Republic of Palau, in the South Pacific, traditional

leaders exercised their traditions of declaring an area closed. The closure of the Ngeruangel atoll was due to the community's concerns that resources were depleted in the area and to maintain community control over the area (fishermen from outside the atoll were fishing there) (Salm *et al.*, 2000).

The Canadian *National Parks Act* states that Parks, as protected areas, are for the benefit, education and enjoyment of the people of Canada, and that Parks "shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations" (Canada, 2000:4(2)). Only relatively recently has Canadian park creation and management policies recognized indigenous peoples' influence on the landscape and their reliance upon the land and resources (Peepre and Dearden, 2002). Diversity fostered by traditional management practices and the Aboriginal connection to the landscape was lost within parks as managers strove to "protect" the ecological integrity of areas, such as national parks, excluding indigenous people or outlawing traditional practices (Peepre and Dearden, 2002). Adaptive management employed by some indigenous peoples, such as undergrowth burning, was considered an impairment of the natural environment and such practices were not allowed in Parks (Barsh and Youngblood-Henderson, 2003; Jentoft, 2003). In order to allow the establishment of a park in areas that are still subject to a claim of aboriginal rights that has been accepted by the Government of Canada, park reserves are created under the *National Parks Act* (Canada, 2000). The park reserve status is not lifted until the underlying aboriginal title and rights have been addressed. Although, First Nations contend that once a park is established, even if it is a reserve, it is very difficult to change the land status. First Nations with territory designated as national park or park reserve are advocating for co-management arrangements. The *National Parks Act* also makes provision for the Minister to enter into co-operative management arrangements for national parks with local and indigenous groups, although the Minister retains the ultimate authority over park management. This was seen with the recent designation of the Gulf Island National Park Reserve, in Southern Georgia Strait, where an Interim Measures Agreement was ratified under the Treaty process allowing an advisory role in management of the Park Reserve for the Hul'qumi'num Nations.

3.2.4 *First Nations and MPAs*

Today, Canadian coastal First Nations' access to fish and marine resources is difficult and constrained by management decisions that have evolved based primarily on biology and economics of large-scale fisheries. Conventional scientific approaches to managing fisheries have not addressed cultural and socio-economic values of fishing populations sufficiently (Berkes *et al.*, 2001), especially that of First Nations. Access to fisheries resources is considered paramount for many coastal indigenous communities to move towards self-governance and away from dependency on the nation state (Davis and Jentoff, 2001).

First Nations can provide valuable traditional ecological knowledge: they have a continued reliance on marine resources for food, social and ceremonial needs, and have a socially driven desire to move away from economic dependence. Conservation of marine resources is recognized by First Nations as a necessary tool to achieve sustainable use of fish and marine resources. Section 35 of Canada's *Constitution Act* protects aboriginal rights, such as the right to harvest natural resources for food, social and ceremonial use, second only to conservation. Any conservation measure that has the potential to affect these rights, such as MPAs, will thereby have to involve First Nations in the selection, designation and management of new MPAs in British Columbia (Wallace and Boyd, 2000).

Proposed MPAs on the coast of British Columbia, especially in the Strait of Georgia, have met with strong opposition from First Nations (Jones and Guénette, 2002; Morales, pers. comm., 2004). Without the resources and capacity to either shape conservation strategies of their own or assess the impacts and benefits of government strategies, First Nations regard Canadian marine conservation efforts as a further erosion of access to marine resources. As a result, there has been considerable opposition to government marine conservation strategies, particularly MPAs, such as the proposed MPA at Race Rocks.

The area known as Race Rocks is an extremely rich ecological area, consisting of 19 islets (the pinnacle of a large seamount), located at the narrowest point of the Strait of Juan de Fuca, 17 km southwest of Victoria, BC. The government of British Columbia designated one square km, encompassing Race Rocks as an ecological

reserve in 1980. For the Straits Salish First Nations of the area, this region has been a significant part of their fishing territory since time immemorial. With the establishment of the Crown Colony in 1849, Governor James Douglas undertook to establish the Douglas Treaties. During the period of 1850-1854, Governor Douglas made 14 land “purchases” from aboriginal groups on Vancouver Island, including the Coast Salish First Nations of Beecher Bay, Songhees, Esquimalt and T’Sou-ke, whose traditional territories encompass Race Rocks. Other southern Vancouver Island Douglas Treaty groups include Nanoose (Snawnawas), Snuneymuxw, Saanich, Tsarlip, Tsawout, Tseycum, Pauquachin and Malahat. In exchange for cash, clothing or blankets, the Douglas Treaties stipulated that the area in question be surrendered “entirely and forever”. However, the aboriginal groups were to retain existing village sites and the “liberty to hunt over unoccupied lands” and the right to “carry on their fisheries as formerly” (British Columbia, 2005:1).

At the Coastal Zone Canada Conference, September 1998, held in Victoria BC, the then federal Minister of Environment, the Honorable David Anderson, announced that the area known as Race Rocks would become one of the first MPAs in BC. Subsequently a Race Rocks Advisory Board was formed to begin the process of establishing this MPA. The local Esquimalt, Beecher Bay, T’Sou-ke and Songhees First Nations were not substantially included in this process, in a Government-to-Government manner, although one local First Nation person was involved. As a consequence, the local First Nations brought strong opposition when the Government announced the establishment of the MPA, in 2002 (LeRoy, 2002). This resulted in a further eroded First Nations’ trust in government marine conservation efforts and required the Federal Government to call for a halt to the establishment of the MPA.

After two years of subsequent negotiations between the Beecher Bay, Songhees and T’Sou-ke First Nations and the Federal government a draft agreement has been developed outlining a First Nations’ co-management role for Race Rocks (and possibly for an area from Jordan River to Victoria Harbour) although this agreement does not include the Esquimalt First Nations. To date, despite being designated as a provincial Ecological Reserve, the Government of British Columbia has not engaged in the process nor is it proposing to be a signatory to the draft

agreement. First Nations still maintain their Douglas Treaty right to fish “as formerly” in the area of Race Rocks and are therefore opposed to any federally proposed no-take area that infringes upon these rights.

Jones and Guénette (2002) conducted an examination of First Nations’ issues regarding MPAs following the release of the draft of Canada’s Oceans Strategy (which includes the development of a network of MPAs) in 1998. Five workshops were organized by the British Columbia Aboriginal Fisheries Commission (BCAFC) and resulted in the identification of five main issues. First Nations participating in the workshops did not accept that MPAs were the best way to deal with the issue of biodiversity and habitat fishery conservation for a number of reasons. They agreed that:

- Aboriginal Rights and First Nations’ access to marine resources are likely to be affected by MPAs;
- establishment of MPAs independent of the BC Treaty Process may impact future negotiations;
- tourism and recreational use may hinder or conflict First Nations’ objectives;
- Co-management relationships should be established;
- Planning processes should involve First Nations at the outset and provide capacity funding; and,
- Economic impacts to livelihoods as a result of MPAs need to be considered (Jones and Guénette, 2002).

3.2.5 Other Traditional Systems Worldwide

Other examples, worldwide, support the contemporary use of traditional systems as management tools or to address indigenous claims to colonized land and resources and harmonize management. For example, marine resources in South Pacific communities have defined cultures through the use of customary marine tenure systems (CMT) (Lam, 1998) or Territorial Use Rights in Fisheries (TURFs) (Schug, 1996). The re-establishment of CMTs or TURFS is being considered as a vehicle to improving management of fisheries and enforcement. In the South Pacific,

incorporating the use of MPAs into the customary marine tenure system as a management tool will provide a vehicle to affect marine conservation, especially if this is done at a community level (Lam, 1998).

Recent policy initiatives in New Zealand are meant to enable the Maori tribes to rehabilitate and manage their local fisheries according to their customary values and practices using two types of designated fishing areas, the *taiapure* and *mataitai* (Memon *et al.*, 2003). *Taiapure* are local fishing areas that have special seafood, spiritual and cultural values for the Maori. These areas are established to provide a greater say for Maori in their management in collaboration with other stakeholders. This role is seen as advisory to the New Zealand Minister of Fisheries (Memon *et al.*, 2003). *Mataitai*, a second type of designation for fishing areas of special significance and are in effect a co-management arrangement between the Maori and the New Zealand Government, where Maori have the authority to authorize fisheries for cultural purposes and can regulate harvests within the area. These areas provide an authorized management role for the person in the Maori tribe that holds the traditional resource management authority, and generally exclude commercial fishing.

3.3 The Study Area

The marine region occupied by the central Coast Salish people is centered around Puget Sound, the Gulf of Georgia and the Strait of Juan de Fuca located on the North Western Coast of North America in Canada. Puget Sound and the Gulf of Georgia are shallow productive water bodies characterized by large fresh water inputs from the Fraser River, the Skagit River, the rivers of Southeastern Vancouver Island (including the Cowichan, Chemainus, Nanaimo, and Qualicum), and the various smaller streams and rivers entering the area. The Strait of Juan de Fuca connects the area to the open Pacific Ocean (Figure 1.1). The large fresh water inputs, shallowness and protected nature result in estuarine-like conditions (Wallace *et al.*, 2002; Masson, 2002), which are well recognized as among the most productive ecosystem complexes in the world. The Gulf Islands in the Gulf of Georgia stretch from the south-eastern side of Vancouver Island from Saanich northward to Comox, is the traditional territory of the Hul'qumi'num Nations a Coast Salish peoples (Figure 1.1).

This multitude of islands form many productive channels that result in increased velocity and water exchange through tidal currents.

In recognition of the uniqueness and biological diversity of the Strait of Georgia and Gulf Island Region, Parks Canada has recently designated the Southern Gulf Islands National Park Reserve that encompasses much of the southern portions of the Hul'qumi'num core territory. A second initiative of Parks Canada, to conduct an NMCA feasibility study, is currently being undertaken for the majority of the core Hul'qumi'num territory in the Gulf Islands.

3.4 The Coast Salish

For centuries the Coast Salish peoples have focused their lives around the Fraser River and the Gulf Islands in the Gulf of Georgia, the Strait of Juan de Fuca and Puget Sound. Generally, it is thought that the Coast Salish are biologically part of one single population (Suttles, 1987a). The Hul'qumi'num, a Coast Salish people of the Cowichan area of Vancouver Island and the Georgia Basin/Puget Sound region are the focus of this study. Culturally Coast Salish were characterized as having a complete dependence on hunting, fishing and gathering, although elaborate social systems including a system of land and sea tenure distinguishes the Coast Salish from other hunter-gatherers (Richardson, 1982; Thom, 2004). Coast Salish groups displayed ideologies and social institutions that provided incentives to accumulate prestige and in having a socio-economic system that exhibited territoriality (Suttles, 1987a). Important characteristics of Coast Salish life include kin groups based on bilateral descent with the possibility of multiple kin-group membership, patrilocal residence, leadership through seniority, sharing of access to resources among kin-groups, exchange of food for wealth and sustenance, and redistribution of wealth through the potlatch (Suttles, 1987a).

During colonization of Canada, the existing First Nation management, including the system of tenure was overtaken by colonial ownership, where the sea and ocean resources were deemed the "property" of the crown, held in trust for all Canadians. Western coastal First Nations in Canada have a long, time-tested relationship to marine resources. The high dependence on the marine environment was recognized by colonizing forces and generally resulted in small land reserve sizes

for coastal First Nations. However, the establishment of small Indian reserves did not recognize the dependence upon the land and is viewed by Hul'qumi'num First Nations as an alienation from their territory. Since colonization, a continued erosion of access to marine resources for both food, social and societal needs and for economic gain has occurred for many coastal First Nations. Despite this, coastal First Nations still have a strong connection to the marine environment and continue to assert title and right to the ocean, seabed and resources within.

3.5 Methods

Detailed methodology for this paper can be found in the introductory chapter of the thesis. As each chapter is meant to be a stand-alone paper, a brief overview is provided here for completeness.

A total of 45 Hul'qumi'num participated directly in this project, either through three focus groups or face-to-face interviews, and provided a rich information source from which to compile an analysis of Hul'qumi'num perspectives. A Hul'qumi'num research assistant was hired to help conduct the face-to-face interviews.

Ethnographic literature pertaining to the Coast Salish and Island Halkomelem was reviewed with particular emphasis on four major traditional management themes as outlined by Berkes (1999): worldviews; social institutions; land and resource management systems; and, traditional ecological knowledge. This provided the context for understanding the traditional resource management systems employed by the Coast Salish peoples. A framework of analysis outlined in Berkes (1999) was used to categorize the ethnographic literature (Figure 1.4).

Three focus group meetings were held with Hul'qumi'num community members. In the first focus group meeting participants were asked a series of open-ended questions aimed at promoting discussion on the principles, goals and objectives of marine conservation from a Hul'qumi'num perspective and traditional resource management, limitations to accessing and conserving marine resources and Hul'qumi'num attitudes towards no-take marine areas (conservation areas where no harvesting is allowed).

The first focus group results were synthesized and a survey questionnaire was developed to help understand Hul'qumi'num principles, goals and objectives for

marine resources management and marine conservation, to identify limitations to access and conserve marine resources, and to identify attitudes towards no-take marine areas. The survey questionnaire was then reviewed by focus group one participants to assess the validity of the questions.

The questionnaire (Appendix 3) was administered to 41 Hul'qumi'num community members (including the youth from focus group three) that were identified using a snow-ball sample method (Johannes *et al.*, 2000) where the first Focus Group members were asked to identify community members with knowledge of the marine environment and then each survey respondent was asked for recommendations for whom to survey next. Although, the results of this survey do not necessarily represent the views of all Hul'qumi'num community members, based on the non-randomness of the sample, they are likely indicative of general attitudes or "ideal" behaviour and values held by those community members more knowledgeable in marine conservation.

The survey questions varied from open-ended to closed-ended with ordered responses. Open-ended survey question responses were transcribed into a Microsoft Word document and analyzed for patterns of responses. Closed-ended (or quantitative) survey questions were analyzed using SPSS software (Statistical Package for Social Science) and mean responses and standard deviations were generated for each response category where appropriate (Appendix 7 provides means and standard deviations in tabular format for each quantitative question).

A second focus group session was conducted with four Hul'qumi'num youth (aged 18-25). These individuals were chosen through referrals from other survey participants and because of their involvement with the Hul'qumi'num Treaty Group Youth Committee, a group of youth who regularly meet to discuss issues related to the Treaty. Focus group participants were first asked to complete the same questionnaire administered to other participants (Appendix 3) without verbally communicating with each other. Once all participants finished the questionnaire a general discussion on marine conservation was held. The researcher asked the group general questions and recorded responses on a digital cassette recorder.

A field trip was conducted with eight participants of the previous survey to Saltspring Island to generate dialogue relating to traditional use and on-the-ground issues faced by participants (or the Hul'qumi'num community) today allowing an opportunity for participant observation. Field trip participants were chosen based on familiarity with Saltspring Island and surrounding waters and on achieving a range of ages (3 youth, 2 middle age and 3 elders) and gender, although six of the eight participants were male. Participants were video-taped and digitally recorded and a transcript of the day was produced.

3.6 Results

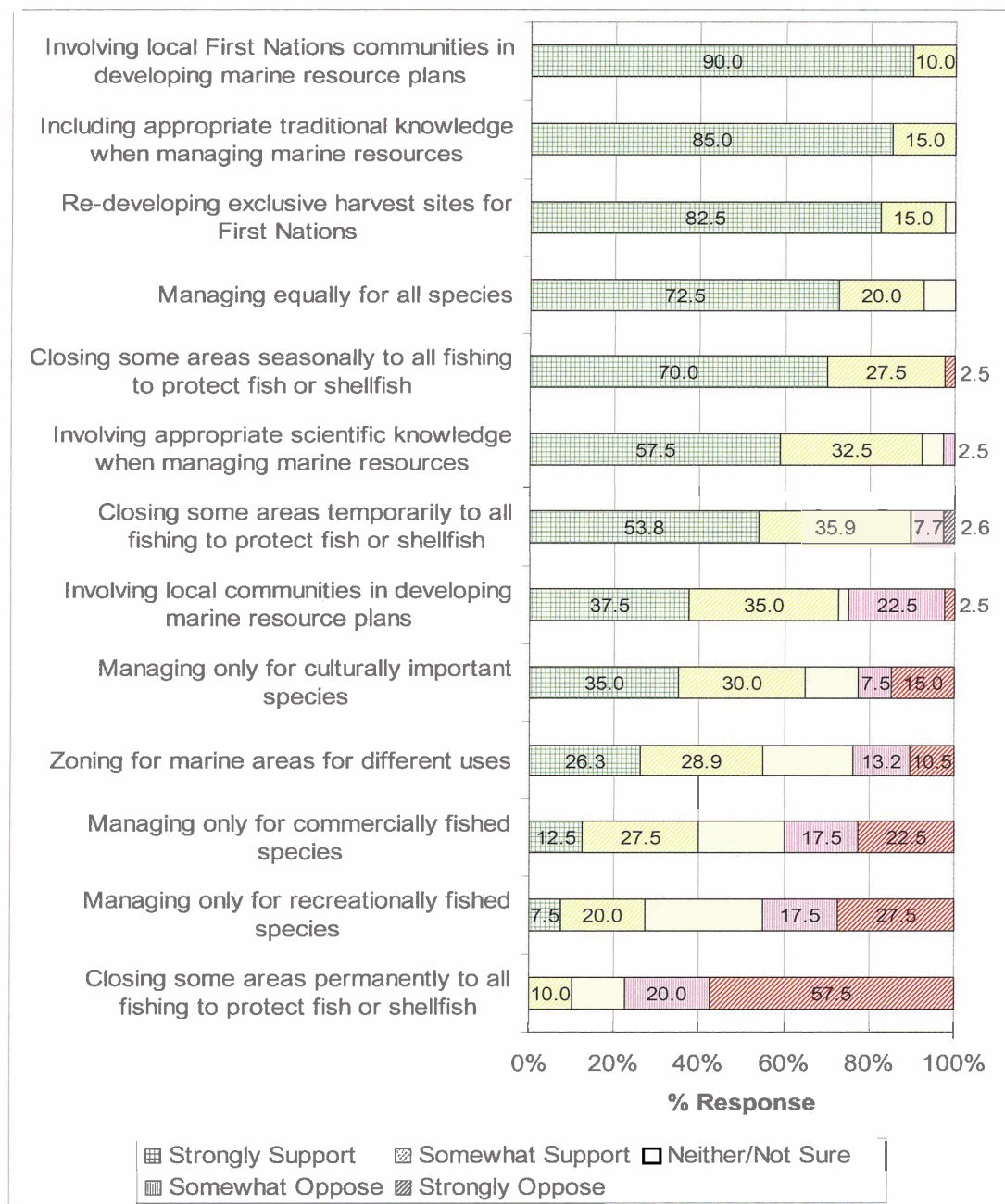
3.6.1 Attitudes towards Approaches to Protecting Marine Resources

Survey participant responses to the questions relating to attitudes towards approaches to conserving marine resources are summarized in Figure 3.1. "Involving local First Nations communities in developing marine resource plans" was strongly supported by 90% of participants as an approach to marine conservation, while "closing some areas permanently to protect marine resources" was opposed by 77.5% of participants. However, 10% of respondents somewhat supported permanent closures. These respondents were elders in the community who had experience in management or were traditional fishers. An additional 12.5% neither supported nor opposed or were unsure regarding this approach.

Although the attitudes towards approaches to marine conservation were relatively positive, some opposition to "managing only for commercial species", managing only for commercially fished species" and "closing some areas permanently to all fishing to protect fish or shellfish". Interestingly, some participants supported "closing some areas seasonally to all fishing" or "closing some areas temporarily to all fishing" as a conservation approach. Participant support for permanent, temporary and seasonal closures may be due to the perception that resources are being over-fished by commercial and recreational fishing which has resulted in a decrease in fish and shellfish available to First Nations. The approaches of "including traditional knowledge" and "including appropriate scientific knowledge" when managing marine resources, were strongly supported by 85% and

57.5% of participants respectively. “Re-developing exclusive harvest sites for First Nations” was strongly supported by 82.5% of participants.

Figure 3.1: Attitudes towards Approaches to Protecting Marine Resources



Some ambiguity is shown in the results regarding support for “managing only for culturally important species” versus “managing only for commercially or recreationally important species” in the percent of participants responding neither or

not sure and the divided support and opposition. It is thought that these results arose from participants not being clear on the question or statement. Most participants required clarification on this particular question and it was not clear that all achieved the same understanding. However, 72.5% strongly supported the approach of “managing equally for all species”.

3.6.2 *Limiting Factors for Accessing and Conserving Marine Resources*

The current consumption of marine resources is does not meet the desired consumption for some Hul’qumi’num community members (Table 3.2). Most survey participants indicated they consumed marine resources between one and four days a week. When asked to indicate desired consumption of marine resources most participants indicated between three and four times a week (41.5%), although a higher number (47.5%) of participants consumed marine resources three and four times a week in the winter. Table 3.3 provides the results on the number of participants desiring the same, more or less marine resources than either their summer or winter consumption rates. Only two participants indicated they desired lower amounts of marine resources than current in the summer. Three participants indicated they desired less seafood in the winter than they were currently consuming.

Table 3.2: Percentage of Participants Consuming Marine Resources in Summer and Winter per week and Desired Consumption per week

Consumption of Marine Foods	Never	Response (%)				
		1-2 times/month	1-2 times/week	3-4 times/week	5-6 times/week	Every Day
A Summer Consumption	2.4	2.4	39.0	39.0	9.8	7.3
B Winter Consumption	2.5	2.5	32.5	47.5	5.0	10.0
C Desired Consumption	0.0	2.5	17.5	41.5	19.5	19.5

Table 3.3: The Number of Participants indicating a Change in Preference of Desired Consumption

Consumption of Marine Foods	Preferred Amount of Fish		
	Same	More	Less
A Summer Consumption	23.0	16.0	2.0
B Winter Consumption	21.0	17.0	3.0

Limitations to accessing marine resources were explored in focus group one and in the survey questionnaire. Focus group one members were asked to comment

on limiting factors to explore this issue and develop appropriate questions for the survey. Their detailed responses are provided in Table 3.4.

Table 3.4: Factors Identified by Focus Group one Participants as Limiting Access to Marine Resources and Resulting Condition

Limitation	Description/ Result	Quotation
Loss of access	Alienation from resources, inability to harvest	"If you don't have a canoe or you don't have a boat or you don't have the money for gas, how do you get out there? Before you could walk to anywhere and go to a beach, now where can you go?"
Government Regulations	Perception that harvesting for sustenance and culture is illegal	"But there is also mental access. My aunty is a good example of someone who is very respectful in how she does things and makes sure that as well as her teachings that she does things according to the law. One day she was talking about going and getting some reeds and going and getting bark and she was saying "well I don't know if I can do that but I though I just had to". She felt guilty actually, she thought she might be breaking the law by going out and getting reeds and going and getting bark to teach kids about traditional resources at a nearby school." "Now we are limited, you can't go and dig unless you have an Aboriginal Clam Licence or some sort."
No involvement in management	Feelings of ownership and responsibility removed	"Before the responsibility was with the family and with the resources now the responsibility is with DFO and overall society. That has really changed the structure."
Loss of traditional knowledge	Disconnection from resources	"The younger generations don't know what xixwe (red urchin) tastes like. That don't even know what skwi'itthi' (green urchin) is. They don't think of it as good food."
Limitations on harvesting	Time limitation on fishing days, limitation on numbers to harvest	"historically, years back, our people went as a whole to the Fraser by canoes and the need was met for each group or each family before they journeyed back home." "Historically years back we had no numbers on what we could catch and now we have set numbers on all of us of what we can catch."
Lack of Resources	Inability to sustain as a food source	"Years back we were able to harvest anything that we wanted crab, clams, oysters, xixwe (red urchin), skw'itthi' (green urchin), kq'i'mukw (octopus). My late father, once a week or once every two weeks or so when he was eating kq'i'mukw he would go down and grab one, but you can't do it now."
Contamination	Inability to sustain as a food source	"There is pollution fronting all of our reserves."
Loss of family structure/ responsibility	Relationship to resources eroded, family units threatened, culture affected	"historically our ancestors used and harvested all different types of marine resources. How resources were prepared is also being lost."
Loss of Knowledge	Lack of knowledge about where to go fishing or even how to process fish. Community depends on band office to deliver fish.	"I think it is the teachings of the old fisheries [that are lost], it seems like we're fishing for everybody else. No one is going fishing on their own anymore. Seems like they depend on us to catch their fish."
Loss of Trade and Barter	Relationships between First Nations and families eroded	"There is not the same understandings that were in the past. People don't know their families, they don't know a lot of their history, its not their fault, it's the way things have happened. Before the responsibility was with the family and with the resources and now the responsibility is with DFO and overall society. You know that has really changed the structure".

The limiting factors identified by the first focus group were used to develop a series of survey questions for understanding factors limiting access. A single answer question was asked regarding the overall satisfaction with accessing marine resources. Over 71% of participants were somewhat or very dissatisfied with their ability to access marine resources (Table 3.5).

Table 3.5: Percent of Participants who were Satisfied or Dissatisfied with their Ability to Access Marine Resources

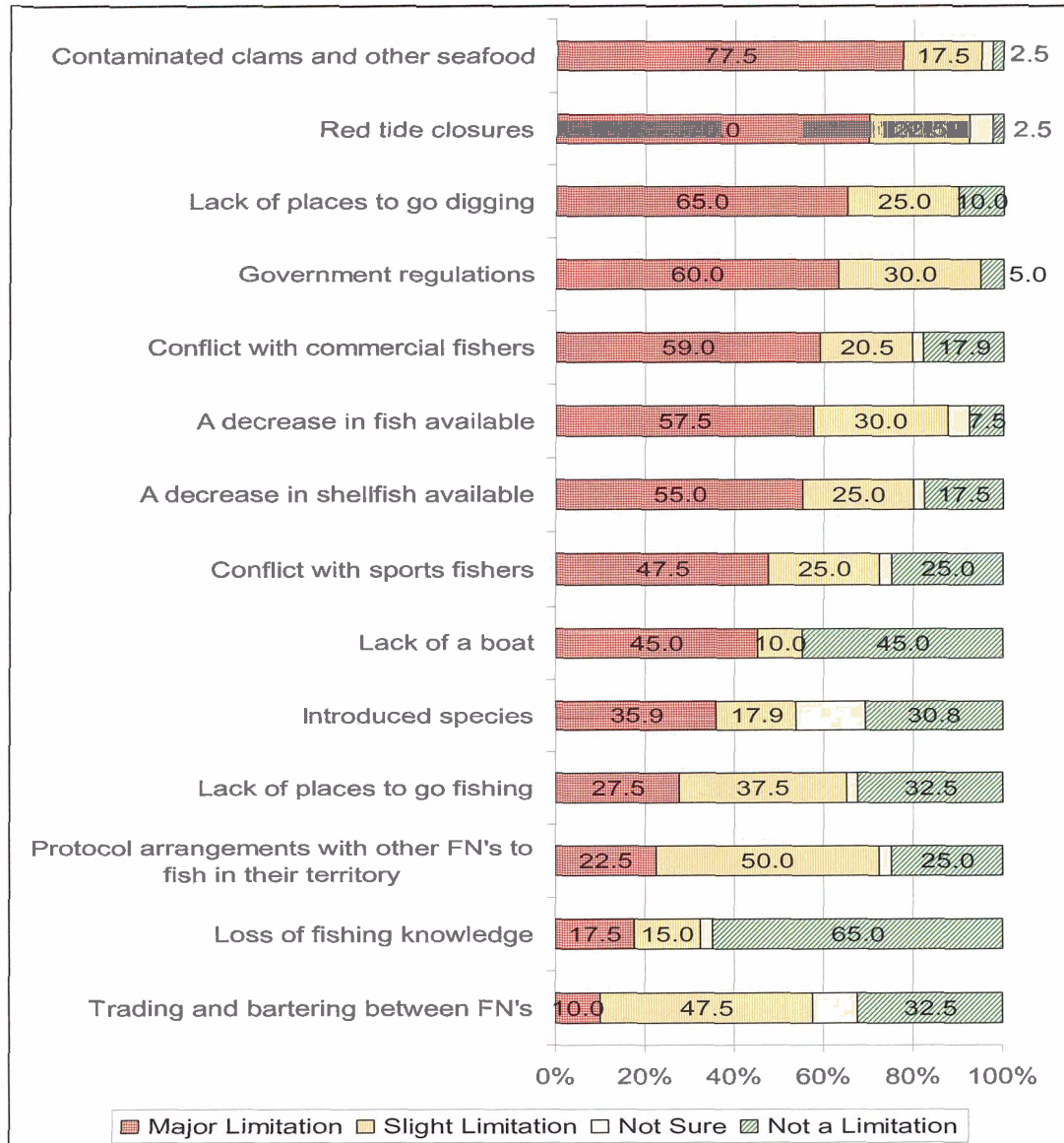
Overall	Response %
A Very Dissatisfied	30.8
B Somewhat Dissatisfied	41.0
C Somewhat Satisfied	20.5
D Very Satisfied	5.1
E Not Sure	2.6

To further explore the limitations to accessing or conserving marine resources, identified by the first focus group members (Table 3.4), survey participants were asked to indicate whether or not a given factor was a major limitation, a slight limitation or not a limitation at all (additional limiting factors were added to the questionnaire through my knowledge of potential limitations expressed by community members over the six years I have worked with them). Figure 3.2 depicts the percentage of participants indicating the degree to which a factor was limiting their ability to access or conserve marine resources. A wide range of factors existed that limited Hul'qumi'num access or conservation of marine resources on various levels. "Contamination of clams and other seafood" had the highest number (77.5%) of participants indicating this as a major limitation to accessing marine resources. "Red tide closures", "lack of places to go digging clams" and "government regulations" followed with 70%, 65% and 60% of participants indicating these as major limitations to accessing marine resources respectively.

Some participants chose every factor listed in Figure 3.2 as a major limitation to accessing or conserving marine resources. In order to understand which factor was the most limiting for accessing or conserving marine resources, participants were asked to choose one or two most limiting factors, (if two limiting factors were chosen

they were added together to provide a measure of the most limiting factor) (Figure 3.3).

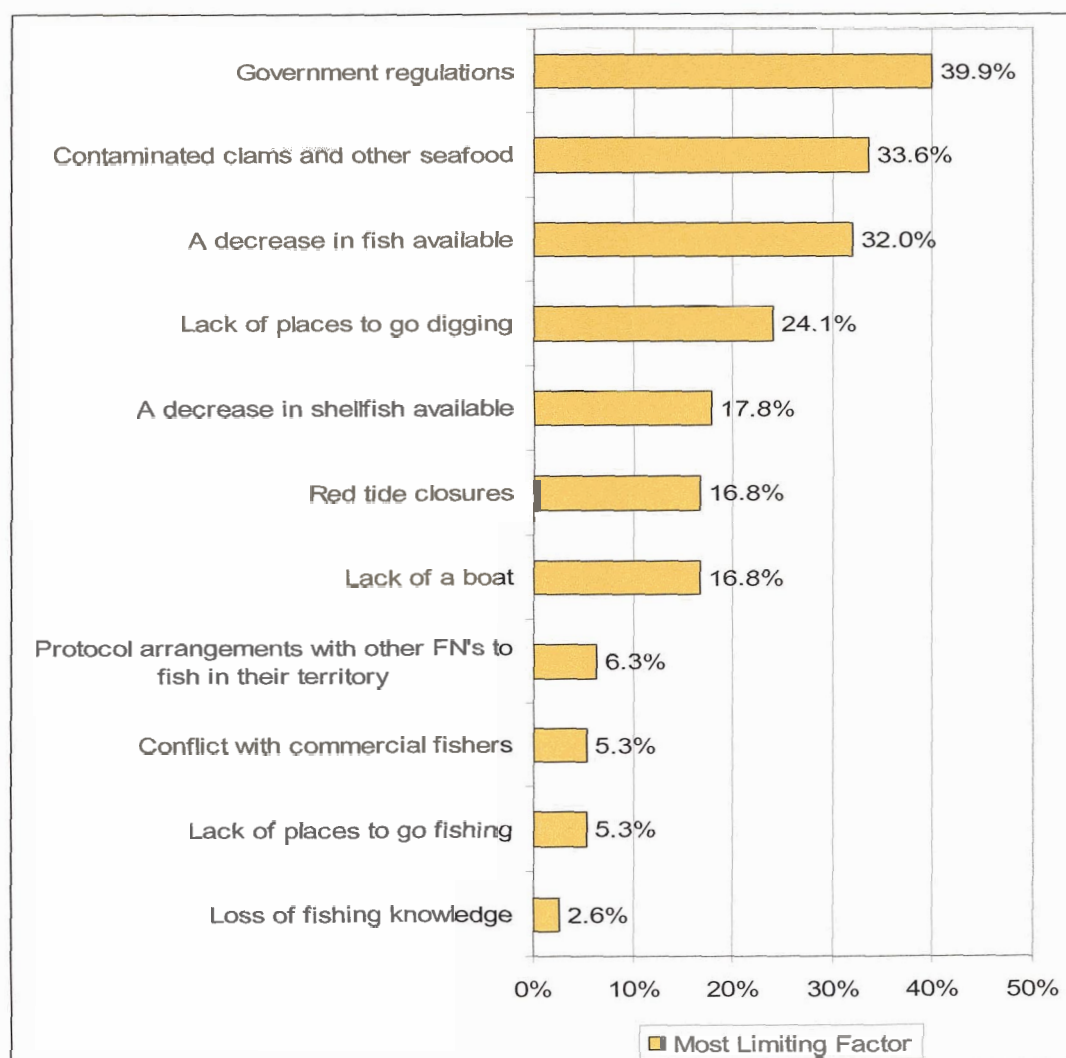
Figure 3.2: Percent of Participants Indicating a Limitation to Accessing or Conserving Marine Resources as a Result of the Given Factor



“Government regulations” and “contaminated clams and seafood” were identified as the most limiting factors for 39.9% and 33.6% of participants respectively. A “decrease in fish available” was seen to be the most limiting factor for 32.0% of participants. “Lack of places to go digging clams” was the most limiting factor for 24.1% of participants. Only 2.4% of participants chose “loss of fishing

knowledge” as the most limiting factor. This was expected, since participants were chosen for this survey based on their substantial knowledge of fishing and traditional practices.

Figure 3.3: Percent of Participants Ranking Factors as Most Limiting to Accessing or Conserving Marine Resources



3.6.3 Attitudes Towards Permanent No-Take Zones

In order to explore further the overall attitudes towards the establishment of no-take zones, a set of single answer questions were asked (Appendix 3, Questions 27-30). Results of this exercise are provided in Table 3.6 (Appendix 10 provides original data). Overall attitude towards the establishment of some permanent no-take

zones varied, with 35% of participants opposing and 47.5% of participants supporting the establishment of some permanent no-take areas. An additional 17.5% of participants neither supported nor opposed the establishment of some permanent no-take areas. Further, support varies depending on the level of Hul'qumi'num involvement in the establishment, use and management of the areas. Support varied from 47.5% (no involvement) to 88.9% (high involvement)

Table 3.6: Overall Agreement with No-Take Zones and Agreement with No-Take Zones if Established by Hul'qumi'num

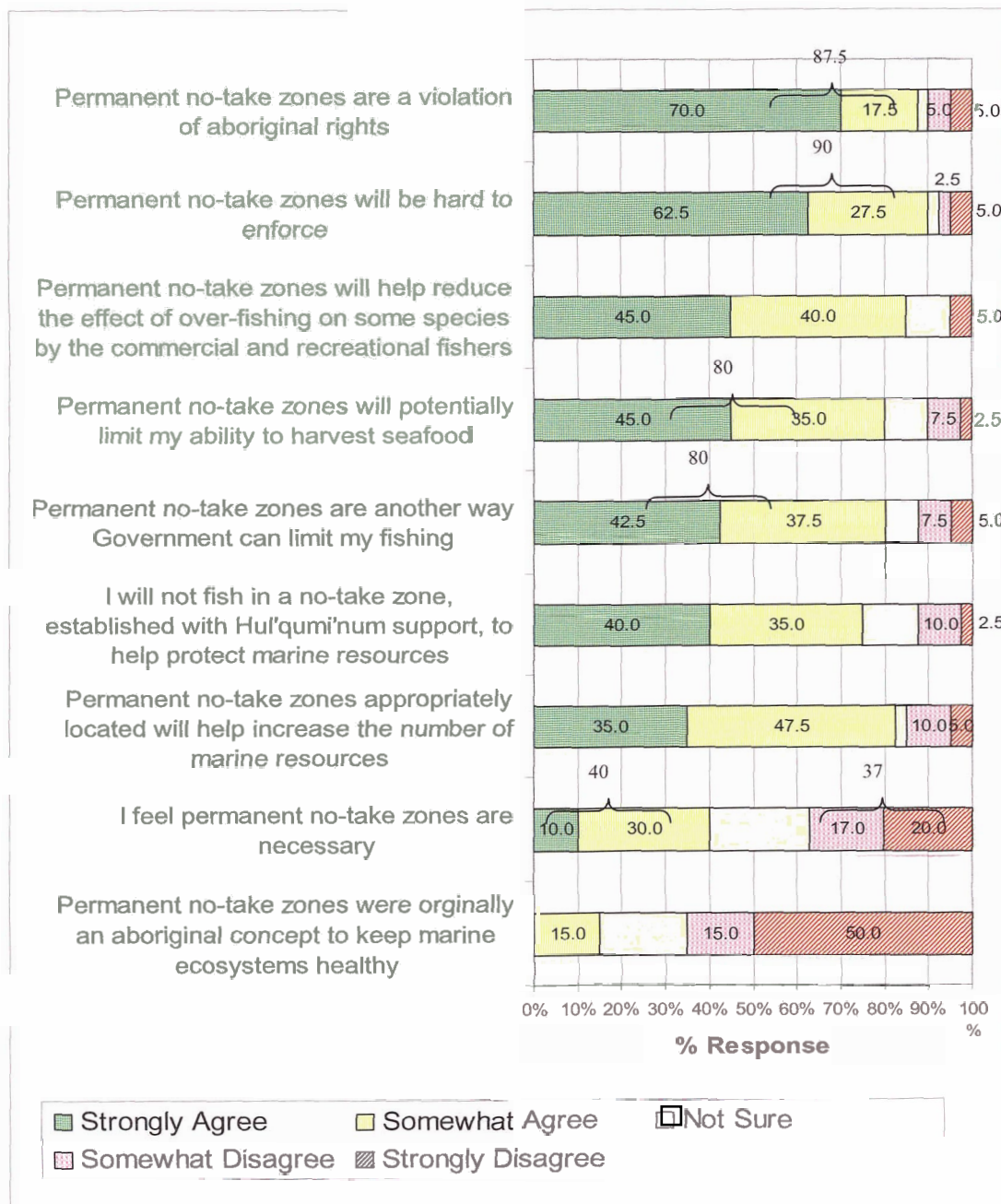
Statement	Response (%)		
	Support	Oppose	Neither
Overall agreement with the establishment of some permanent no-take zones (agree – disagree)	47.5	35.0	17.5
Agreement with the establishment of some permanent no-take zones if managed by the Hul'qumi'num (agree-disagree)	75.0	15.0	10.0
Agreement with no-take zones if Hul'qumi'num were still allowed to fish inside the no-take zones (yes-no)	87.2	12.8	-
Agreement with no-take zones if established by the Hul'qumi'num (yes-no)	88.9	11.1	-

A further exploration of beliefs that may influence a participants overall attitude towards the establishment of no-take zones was measured using a Likert-like scale that requires participants to indicate the extent to which they agreed or disagreed with a set belief statements (McDougall and Munro, 2003). Belief items were developed to express possible positive and negative outcomes thought to be associated with no-take areas. Also, the series of belief statements (Appendix 3, Question 27) reflected the limitations to access previously outlined in the survey questionnaire and used First Nations issues with MPAs identified by Jones and Guénette (2002). Results from this exercise are shown in Figure 3.4.

Overall attitude to the establishment of permanent no-takes zones is thought to be influenced by the negative belief items such as the percent of participants who agreed (somewhat or strongly) that “permanent no-take areas were a violation of

aboriginal rights” (87.5%), that “permanent no-take zones would be hard to enforce” (90%), that “permanent no-take zones would potentially limit their ability to harvest seafood” (80%) and were “another way government can limit their fishing” (80%).

Figure 3.4: Percent of Participants Agreeing or Disagreeing with Statement Regarding No-Take Zones



The influence of positive belief items or attitudes to no-take zones can be summarized as follows “permanent no-take areas would help reduce the effects of over-fishing by commercial and recreational fishers” (45% agreement); “permanent no-take zones were necessary” (40% agreement); “permanent no-take zones were originally an aboriginal concept” (15% agreement); “would not fish in a no-take zone established with Hul’qumi’num support” (70% agreement).

To determine why some participants supported and some participants opposed no-take zones, belief statements were compared with overall attitude (support or oppose no-take zones) to determine whether or not a difference existed between the mean scores for each belief item for those that overall supported or opposed the establishment of no-take zones (see Table 3.7). The “support” group was defined as respondents who agreed (somewhat or strongly) with the statement “Overall would you strongly agree, somewhat agree, neither/not sure, somewhat disagree or strongly disagree with the establishment of some permanent no-take areas in the traditional territory”. The “opposed” group was defined as respondents who disagreed (somewhat or strongly) with this statement. Also attached to the opposed group were those respondents who responded “neither/not sure” to this statement. The rationale for including the neither/not sure group with the opposed portion of the sample was related to the consensus aspects of decision making in Hul’qumi’num culture.

The belief items that seem to show a difference between those who overall supported and those that overall opposed no-take zones include:

- 1) permanent no-take zones appropriately located will help increase the number of marine resources;
- 2) I feel permanent no-take zones are necessary;
- 3) permanent no-take zones will potentially limit my ability to harvest seafood;
- 4) permanent no-take zones are another way government can limit my fishing; and
- 5) permanent no-take zones are a violation of aboriginal rights.

Statistical tests were not performed on this data because (a) the sample was not randomly selected and (b) the sample size was not very large (n=41), compared to

the population (n=5918). Therefore caution needs to be used in applying or generalizing these sample results to the population. However, fishers from the Hul'qumi'num community were selected as the sample based on their ability to describe and relate the values or ideal behaviours related to marine conservation. The extent that these values and behaviours are shared with the Hul'qumi'num population can only be determined through a larger sample.

Table 3.7: Comparison of Likert-like Scale Measuring Attitude to Establishing No-Take Zones and Overall Attitude

	Statement	Mean Agreement Score ¹	
		Who Support No-take n=19	Who Oppose No-take n=21
<i>A. Positive Attitudinal Beliefs</i>			
A	Permanent no-take zones appropriately located will help increase the number of marine resources	4.42	3.57
B	Permanent no-take zones will help reduce the effect of over-fishing on some species by the commercial and recreational fishers	4.42	4.00
C	I feel permanent no-take zones are necessary	3.79	2.14
D	I will not fish in a no-take zone, established with Hul'qumi'num support, to help protect marine resources	4.16	3.56
<i>B. Negative Attitudinal Beliefs</i>			
E	Permanent no-take zones will potentially limit my ability to harvest seafood	3.57	4.62
F	Permanent no-take zones will be hard to enforce	4.42	4.38
G	Permanent no-take zones are another way Government can limit my fishing	3.53	4.52
H	Permanent no-take zones are a violation of aboriginal rights	4.11	4.71

¹ Mean computed from response to each item, where 1= Strongly Disagree; 2=Somewhat Disagree; 3=Not Sure; 4= Somewhat Agree; and, 5=Strongly Agree

These beliefs potentially explain why some people have an attitude that supports no-takes and some people oppose no-take zones. These results indicate that even though there is opposition to the creation of no-take zones the opposed group did not disagree that these zones would help to increase the number of marine resources. This provides context for understanding how beliefs affect overall support for the establishment of no-take zones.

3.7 Discussion

Case law has established that the Crown must “properly consult with and accommodate the interests of First Nations, before proceeding with the development on their traditional territory” (BCTC, 2004:5). Marine conservation planning should involve consultation with First Nations in a manner that is mutually acceptable and addresses and accommodates First Nations’ inherent aboriginal rights. Many approaches to conserving marine resources are available. Integrating MPAs within a marine conservation framework that protects species and habitats outside of the MPAs (Allison *et al.*, 1998) and addresses biological diversity within the oceans, as a whole, should be a priority (Day and Roff, 2000). Involving First Nations in establishing a framework for marine conservation should also be a priority.

3.7.1 Approaches to Protecting Marine Resources

Jointly planning marine conservation initiatives between governments and First Nations will provide an opportunity for First Nations’ interests to be accommodated. Involving First Nations in marine resource planning was highlighted by participants in this study as key to conservation and protection of marine resources. This approach has worked in other areas of the world, such as the Philippines, Oceania and New Zealand (Schug, 1996; White and Vogt, 2000; Dearden, 2002; White *et al.*, 2002).

Ambiguity exists in the attitudes towards establishing no-take zones. Overall, 47% of participants strongly or somewhat agreed with the establishment of permanent no-take zones, although 35% either strongly or somewhat disagreed (Table 3.6). However, survey participants supported closing some areas seasonally or temporarily to conserve and protect marine resources and over 80% of participants either strongly or somewhat supported the concept that marine reserves appropriately located would help increase the numbers of marine resources (Figure 3.5). These results indicate that participants are aware that closures can have positive effects on increasing marine resources. The positive effects of MPAs on fish assemblages, biodiversity and productivity have been documented in other areas of the world (Russ and Alcala, 1996a; Côté, 2001; Francis *et al.*, 2002; Gell and Roberts, in press; Halpern and

Warner, 2002; Halpern, 2003; Lubchenco *et al.*, 2003; Denny and Babcock, 2004). As outlined by Jones and Guénette (2002) there are many issues affecting First Nations attitudes towards no-take zones the least of which is the current lack of First Nations access to marine resources for food, social, ceremonial and economic needs. It is unclear if opposition to MPAs is primarily a result of First Nations maintaining their right to access and harvest marine resources in their entire territory or if other beliefs not measured in this study are affecting overall attitude towards MPAs.

The establishment of areas within the marine environment where harvesting of resources is not allowed, such as components of MPAs, is not a concept that resonates well with the Hul'qumi'num. When discussing no-take areas or MPAs one elder related that:

"Parks are like a red blanket in front of a bull. As soon as you say "lets save it for a park", it really goes against us right now, particularly because we think that parks are being set up to exclude us and parks are taking up all the good, wonderful old sites. It is always after the fact, they say ok here is a nice spot for a park and then they say can you guys stay out of here because it is a park. It doesn't really connect" (Chemainus elder pers. comm., 2005).

Although community members recognize the decline in marine resources, they appear to be of the opinion that it is the result of mis-management and impacts caused by other user groups or industrial and residential development in the area and are not willing to bear the costs of these impacts.

Hul'qumi'num principles of conservation, discussed in Chapter 2, include taking only what is needed, respecting resources and recognizing that everything is connected. This relationship applies to both sustenance and earning a living from marine resources. Hul'qumi'num believe "the ocean is our refrigerator" and if you respect resources and treat them right you will be provided for. Respecting marine resources includes not over-harvesting. This philosophy has provided built-in management mechanisms to conserve marine resources, such as social institutions like the potlatch that included sanctions (e.g. loss of ownership privileges) if resources were not stewarded. Management based on the principle of only taking what you need (and leaving enough for the beaches) precluded the necessity of setting areas aside as parks or protected areas.

As evidenced in this paper, First Nations' view the no-take zones within MPAs as limiting their aboriginal rights to fish for food, social and ceremonial needs. Jones and Gu nette (2002) proposed First Nations opposition to MPAs being related to a number of traditional, social, political and economic factors, including the perception that MPAs will further alienate ocean areas and resources prior to the settlement of treaties. The results of this study indicate that the Hul'qumi'num nations see no-take zones as violating their aboriginal rights, limiting their ability to access marine resources, as another way government can limit their fishing, and being hard to enforce. However, a significant relationship was demonstrated between attitudinal beliefs and overall support for no-take zones. Therefore, as highlighted by Jones and Gu nette (2002), marine conservation planning needs to involve First Nations in a meaningful manner. The results of this study indicate support for protecting some marine areas if these are developed and managed by the Hul'qumi'num.

Participants supported the development of exclusive harvest areas for First Nations. MPAs may provide a similar concept, where zones exclude all others besides First Nations. Chapter 4 explores the concept of Hul'qumi'num Management and Harvest Areas as a potential conservation zoning mechanism.

3.7.2 The Effect of Factors Limiting Access to Marine Resources

Limitations to accessing marine resources have forced Hul'qumi'num harvesters into an ethical situation where they must curtail their own harvests to avoid resource depletion.

“They (government) are using our own teaching to conserve, we will stop first and then everyone else stops. That is really true, I see it happen all the time. They are happy when we stop, but all it does is open up the resource for other people”. (Chemainus Elder, pers. comm.)

Today Hul'qumi'num, through trade and barter of marine resources and some commercial fishing, maintain an economic relationship to resources. Although, this relationship has been significantly eroded over time through increases in commercial and recreational fishing, government policies and licensing systems and political decisions that have impacted Hul'qumi'num fishers. Members of the Hul'qumi'num

community still earn their livelihood through harvesting and selling marine resources. The establishment of no-take areas within protected areas suggests an imposition of further limits to harvesting and is viewed as violating aboriginal rights. MPAs, currently being proposed through a bilateral process between the Federal and Provincial levels of government, are viewed by the Hul'qumi'num as "another way the government can limit our fishing". Overcoming this perception will require a significant effort to include First Nations in marine conservation planning.

Contamination and the lack of shellfish and fish resources within the Hul'qumi'num traditional territory, increases the perception that the establishment of MPAs will further limit Hul'qumi'num. To overcome this perception and increase support for MPAs, marine resource plans should clearly indicate restoration efforts, as well as highlighting the documented increases in fish populations near and within marine reserves in other parts of the world.

3.7.3 Other Factors Affecting Attitudes towards Establishing No-Take Areas

Canada's Oceans Strategy includes the objective of increasing opportunities for tourism and outdoor recreation (Canada, 2002a). Some Hul'qumi'num are concerned that the development of MPAs in their traditional territory will increase an already "healthy" tourism industry in Georgia Strait and the Strait of Juan de Fuca without any benefits accruing to Hul'qumi'num. In addition, impacts to archaeological sites will potentially increase through increasing access to foreshore areas, such as ocean-front parks, as well as establish further third party interests in their territory (guides and outfitters).

The establishment of MPAs in Hul'qumi'num Traditional Territory has been opposed in the past. Fisheries and Oceans Canada undertook an initial assessment for the establishment of a candidate marine protected area at Gabriola Passage, within the Hul'qumi'num core territory (Canada, 1998). Numerous letters of opposition to the establishment of Gabriola Passage as a candidate MPA, were written by the Hul'qumi'num nations to the Minister of Fisheries and Oceans. The primary concern, at this time, was alienation of an area within the traditional territory (Cowichan Tribes member, pers. comm., 2004). Other MPAs in Hul'qumi'num traditional territory,

proposed by government, will likely meet the same opposition. However, if planning processes for marine conservation are undertaken with true meaningful involvement of First Nations it is possible that support for some type of MPAs may be garnered. After significant opposition from First Nations against MPAs, a collaborative approach was seen for another candidate MPA at Race Rocks where First Nations were involved in a second process after a relationship between DFO and the First Nations had been established.

Incorporating marine resource management philosophies and traditional ecological knowledge when choosing areas and establishing a management role for Hul'qumi'num will aid in the acceptance of marine conservation efforts such as MPAs. Chapter 2 addresses how traditional management systems of the Coast Salish can inform current marine resource management regimes. For example, proposed MPAs contain zones or areas where the desire is for no harvesting or extractive activities. The government is currently maintaining that no-take zones will not apply to First Nations, however they encourage voluntary compliance. Closing areas to harvesting on a permanent basis is contrary to Hul'qumi'num worldviews where they view their presence as integral to the function of the ecosystem and has often resulted in enhanced production of certain species. In fact, survey respondents supported the development of exclusive First-Nations-only harvesting areas. These areas, at face value, seem to be similar to MPAs (except HMHAs would allow extraction). However, HMHAs would provide opportunities to practice traditional management by including an increased management role for Hul'qumi'num, increasing harvesting opportunities and access. Chapter 4 provides more detail on these areas.

If planning processes include meaningful involvement by Hul'qumi'num in developing marine conservation strategies for their territory some form of MPAs may be supported. A reciprocal protection of traditional harvest areas and recognition of unequal impacts to Hul'qumi'num communities through the establishment of MPAs (Jones and Guénette, 2002), would need to be explored.

Establishing MPAs prior to completion of the negotiation on the Final Agreement of a Treaty is seen as alienating parts of the ocean bottom (Jones and Guénette, 2002) and could result in precluding treaty options. Jones and Guénette

(2002) suggest establishing Interim Measures Agreements (IMAs) to address MPAs within the Treaty framework. IMAs for each Treaty table to address issues of MPAs are likely not a viable solution given current economic constraints on governments. The recently formed “coalition” of Vancouver Island First Nations could provide an avenue to begin dialogue. Hul’qumi’num are frustrated that their individual concerns and issues with MPAs and the Oceans Strategy are not being addressed. A Vancouver Island initiative may provide a means of getting governments to recognize the importance of First Nations’ issues and allow exploration of the relationship between aboriginal treaty rights in fisheries and parks and protected areas (including MPAs).

3.8 Conclusions

Government regulations, contamination, lack of resources and lack of access were identified as limitations to accessing and conserving marine resources. It is likely that these limitations influence attitudes towards MPAs. The application of MPAs in Hul’qumi’num territory was not fully supported unless Hul’qumi’num were directly involved in planning and management of the MPA or if Hul’qumi’num were the ones to designate an MPA. Hul’qumi’num relationships to marine resources are based on a worldview that is different from the western science perspective. It includes an embeddedness of humans in the ecosystem and adaptive ecosystem management performed by humans. The current concept of MPAs as refugia for biodiversity and fisheries protection is somewhat at odds with this worldview. The establishment of management areas for the exclusive use of Hul’qumi’num (and other First Nations) may provide a similar outcome to MPAs although issues around maintaining biodiversity will need to be addressed. Examples from other parts of the world, such as New Zealand, where Maori have gained customary title to the foreshore and have established customary areas that are co-operatively managed, provide avenues for exploration.

Marine conservation in Canada that includes the establishment of MPAs as part of an overall strategy will need to include First Nations in a meaningful role at the beginning of the planning process. Some potential avenues exist for exploring and learning from other MPAs worldwide that involve indigenous people in the

establishment and management of MPAs. Successful efforts in establishing and maintaining the Apo Island MPA, demonstrate the positive social and ecological benefits of an MPA using community-based management with Apo Island villagers (White *et al.*, 2002). This provides an example of a win-win situation that could be applied in Canada. The food, social, ceremonial and economic relationships to resources that are maintained by Hul'qumi'num, need to be recognized as a high priority that are supported by marine conservation efforts, such as MPAs, and not further eroded.

4 Conclusions, Lessons Learned, Recommendations and Future Research Suggestions

An exploration of Hul'qumi'num perspectives on marine conservation provide context relating to why current Canadian marine conservation strategies are at odds with First Nations' views of marine resource management. It also highlights areas of similarity and difference among government and Hul'qumi'num principles, goals or objectives and management of marine resources and determined Hul'qumi'num attitudes toward permanent no-take zones. Understanding the cultural nuances, worldviews and traditional management systems of Hul'qumi'num provides a window into the First Nations' perspectives on marine conservation. The holistic nature of the relationship between Hul'qumi'num people and the resources and habitats in which they are embedded is richly imbued with culture and a philosophy that everything is one. Stewardship of resources is informed by the principles of respect and taking only what is needed. The Hul'qumi'num view is that "the ocean is our refrigerator" and will always provide for their needs if they share with each other and treat each other (and the resources) well. The tending of the relationships between humans and resources and among resources themselves provides Hul'qumi'num with a rich understanding of the ecosystems in which they live. The direct relationship between resources and Hul'qumi'num enabled the development of sophisticated systems of management that enhanced production and allowed an increased reliance upon those resources. This relationship facilitated the development of elaborate social systems that evolved through the ownership, control and successful management of resource harvesting sites.

Contemporary Hul'qumi'num principles for marine resource conservation, as outlined in this study, are similar to traditional perspectives. "Maintaining populations of all native species", "ensuring marine resources used by Hul'qumi'num are available for future generations", "taking only what is needed" and "respecting marine resources" were listed by over 70% of participants as extremely important principles relating to marine conservation. Goals and objectives for marine conservation included "ensuring marine areas that are healthy and free of contamination", "rehabilitate and restore marine resources", "increasing the numbers

of marine resources available for food and for cultural purposes” and “reconnecting Hul’qumi’num to the marine environment” were extremely important to over 60% of survey participants. The Hul’qumi’num principle of taking only what is needed and its applicability to leaving what is needed for the resource is a concept similar to the government’s principle of sustainability. However, fisheries management is an inexact science, often operating in data-poor environments. Determining what is needed to sustain the ecosystem is a difficult task. The government principle of taking the precautionary approach provides a mechanism to work towards sustainability even when information is lacking.

The erosion of access to marine resources for Coastal First Nations has impacts on the lifestyle, nutrition, and culture of these coastal peoples. Eliminating barriers to harvesting and restoring access to marine resources for First Nations will help to increase the willingness to explore non-traditional conservation measures.

Strong agreement was shown by survey participants for the use of past management practices today such as “areas were not harvested for a few years to allow them to recover when numbers of marine resources were low”, “elders in the community provided their knowledge and helped manage”, “beaches were regularly dug to keep them healthy” and “Hul’qumi’num people that harvested were the managers”. Some participants (10%) strongly disagreed that the practice of “some harvesting areas were owned by villages or families” should be used today. Principles of management included “traditional knowledge and practices of First Nations should contribute to management for conservation”, “First Nations should share responsibility to conserve and protect marine resources”, “First Nations rights must be respected”, “involvement by First Nations in managing for conservation”, “when marine resources increase as a result of conservation, First Nations should be able to share in the opportunity for harvesting”, “managing for conservation should extend beyond international boundaries” and “conservation restrictions should apply equally to everyone” were strongly agreed to by over 60% of participants.

Including traditional knowledge of indigenous peoples in marine resource management can provide valuable data on past levels of production, species compositions and ecological relationships. This will increase the ability of the

government to manage adaptively. Enriching the concepts of ecosystem-based management to include humans as an integral component of the ecosystem instead of an impact or management challenge, shifting management from a top-down approach to a community-based regime and re-developing a community based system of resource ownership will increase the overall success and acceptance of government marine conservation concepts to First Nations.

Establishing areas where no harvesting is allowed on a permanent basis ("no-take zones), as a component of MPAs or NMCAs, was opposed by 35% of survey participants. The worldview that humans are an integral component of the ecosystem is at odds with the concept of protection zones, such as the portions of MPAs that are no-take zones, where humans are excluded. However, 75% of participants agreed to the establishment of permanent no-take zones if managed by the Hul'qumi'num. Overcoming the opposition of a government driven process will be a significant task. Developing mutually agreed upon consultation strategies which include a significant role in planning marine conservation strategies and management of resources will begin to address First Nations concerns.

The objectives of a National Marine Conservation Area (NMCA) are more suited than MPAs to the principles, goals and objectives of marine conservation from a Hul'qumi'num perspective. Zoning under the NMCA can accommodate First Nations' principles for marine conservation. Engaging First Nations early in the NMCA feasibility process in a meaningful way will be paramount to its success and provide an opportunity for First Nations to influence the NMCA planning process. The inclusion of sustainable use as a principle moves government strategies closer to that of First Nations, establishing a foundation and continuing to build a bridge between First Nations and government marine conservation goals and objectives.

4.1 Other Significant Issues and Recommendations

- 1) **Access:** The lack of Hul'qumi'num access to marine resources, as mentioned above, is a significant barrier to moving government marine conservation forward on the British Columbia coast. First Nations view any marine conservation effort of government as a further limitation. Aboriginal rights, as protected under Section 35(1) of the *Constitution Act* (1982), are subject to conservation

limitations, although First Nations do not agree that they should have to bear the costs of government management mistakes. The historic relationship to marine resources provides a “corporate memory” where First Nations have witnessed the decline of marine resources and watched other non-First Nations benefit. Setting aside areas for First Nation only harvests, shifting marine resource harvests to local small-scale opportunities and focusing on restoration of contaminated or degraded areas may provide mechanisms to increase access for First Nations to marine resources.

- 2) **Economic Constraints:** Over 30% of Aboriginal women and men living on the reserve are unemployed and average annual incomes for women and men living on Indian Reserves are just over \$11,000. The economic constraints caused by high unemployment and low incomes create increased opposition to marine conservation efforts. The relationship between communities and fish stocks is often described as healthy coastal communities requiring healthy fish stocks. Jentoft (2000) maintains that “*healthy fish stocks require healthy communities*” Providing economic opportunities for First Nations, such as jobs in management and enforcement and commercial harvesting, will help reduce economic hardships that resulted from loss of access and increase the palatability of marine conservation strategies.
- 3) **Lack of Trust:** The relationships between governments and First Nations have often been adversarial (R. Morales, pers. comm., 2004). Many First Nations in BC have never ceded title and right to land and resources to the government. This historic struggle and continued oppression of First Nations peoples results in a complete lack of trust. Building relationships through Treaty and other mechanisms, such as planning for marine conservation, provide opportunities to establish a mutually beneficial relationship. Supporting First Nations’ driven or bottom-up approaches to marine planning, identification of areas for conservation and different mechanisms for marine conservation such as First Nations only harvest areas will induce relationship building.
- 4) **Meaningful Involvement and Consultation:** Many Supreme Court challenges relating to the lack of meaningful involvement in decisions related to land and

resource management have been brought by First Nations. A mutually defined consultation strategy and co-management relationship for marine resource management needs to be developed.

- 5) **Space for TEK:** Traditional Ecological Knowledge provides time-tested information that is often location specific. TEK to First Nations is not just information but a body of knowledge that incorporates cultural meaning and relationship to land and resources. Providing equal space for TEK (not just considering and incorporating) and traditional management practices in managing marine resources will increase the acceptability of government marine conservation to First Nations.
- 6) **Development of Hul'qumi'num Management and Harvest Areas (HMHAs):** The Hul'qumi'num culture is tied to marine resources. Hul'qumi'num communities continue to insist on involvement in management of fisheries resources. HMHAs provide a vehicle to increase access to marine resources, and establish co-management relationships. Survey participants in this study supported the establishment of exclusive harvest areas for First Nations but maintained that all of the marine environment should be managed (or co-managed) by, and be accessible to, Hul'qumi'num. Areas that are set aside for "First-Nations-only" harvests, to be managed by, and for First Nations, in cooperation with government, will re-establish cultural and social connections to marine resources in First Nations communities. Planning processes for these areas could explore the development of conservation zones. These areas could be similar in some aspects to MPAs and offer an additional approach for marine conservation. Establishing areas of exclusivity in the marine environment could be thought of as akin to the setting aside of Aboriginal reserve areas. When reserves were established they were to preserve the First Nations communities. Small reserves were established on the coast by colonizing forces contending that coastal First Nations were more dependent on marine resources than resources from the land (although First Nations would argue that their dependence upon the land and sea cannot be separated). The lack of comparable reserves in the marine environment has resulted in a continued decline in First Nations' access to the

resources they traditionally depended upon. Establishing marine areas for the exclusive use by First Nations could be explored as a new type of zone through NMCA's.

7) **Education Components of Marine Conservation**

Hul'qumi'num survey participants indicated the need to provide education opportunities for both Hul'qumi'num and non-Hul'qumi'num in marine conservation. Elders in the Hul'qumi'num community continually express a concern that the teachings of the old are being lost or not transferred down to the younger generation. In part the loss of access to marine resources has eroded at this transference. Establishing a "Hul'qumi'num fishing school" will augment the teachings that are available through the Big House, and focus younger Hul'qumi'num again on the resources of the sea. The education focused on increasing of awareness of First Nations' use of the land and sea for non-Hul'qumi'num living in the traditional territory is also seen as important. Many Hul'qumi'num relate stories of "rich people who live on the edge of the sea" chasing them off the beach when they are digging for clams or harvesting seaweed. Conflict between recreational and commercial fishers and Hul'qumi'num fishers has also occurred where traditional fishing spots, often fronting reserve are heavily harvested by non-Hul'qumi'num.

4.2 *Limitations and Future Research Potential*

Limitations

Opinions expressed by participants in this study are likely influenced by high unemployment rates and severe social conditions. This reality for many First Nations impacts upon their ability to maintain a relationship with marine resources and will potentially influence how participants respond to issues related to marine conservation. Mitigating the influence of these conditions is unlikely in this type of study, although recognizing the identification of the limitations as result of the study and understanding the potential limitations of the data is important.

Other cultural barriers to providing traditional knowledge to researchers also were apparent. The lack of trust of "government-like" researchers may influence how

participants answered questions. My six-year relationship with the Hul'qumi'num community will help lessen this limitation, although many of the participants were unknown prior to the interview. Hiring a Hul'qumi'num research assistant also helped by providing a familiar face in the interviews.

It is also possible that my previous relationship with the Hul'qumi'num has influenced my ability to bring an "objective" perspective to the question, although this relationship enabled a deeper understanding of the issues and a participatory nature to the research where a question relevant to the Hul'qumi'num information needs was addressed. Other researchers addressing the same problems would likely not achieve the same results.

The small sample size of 41 interview participants could also be viewed as a limitation and precluded more advanced statistical analysis. However, the robust nature of the information collected provided a depth to the data that a larger single method approach may not. Obtaining information in a cross-generation setting, such as the field trip and focus group three was limited by traditional protocol. If an elder is present, it is not culturally appropriate for younger members of the group to speak unless the elder granted permission. Hosting a youth only focus group allowed youth to communicate their attitudes and beliefs about marine conservation, without breaking protocol.

The loss of traditional knowledge regarding the marine environment in the Hul'qumi'num community is also a likely limitation of this study. Focusing the survey and information collection on known community fishers helped to lessen this impact.

The current politically-charged treaty environment is also likely to distort results, as First Nations see the establishment of MPAs and NMCAs as precluding treaty options.

Finally, many participants are not actively fishing at present due to lack of access to marine resources, including economic barriers. This lack of access is generally perceived as a result of government regulation and mismanagement. Participant attitudes towards no-take marine areas may have been influenced by this

causing a higher negative response to the attitudinal section of the questionnaire relating to permanent no-take zones.

Future Research Potential

Marine conservation is a large field with many possibilities for academic exploration. Understanding First Nations' perceptions of marine conservation is equally large and will vary somewhat depending on geographic location and impacts to local marine resources that limit access. Exploration of the cross-section of perspectives within coastal First Nations in British Columbia and other similar countries, such as New Zealand, would provide a broader basis to understanding how to meaningfully engage First Nations in marine conservation.

Berkes' (1999) model of traditional ecological knowledge being formed through *knowledge-practice-belief* appears to have some resemblances to social theory on the formation of attitudes and beliefs and should be explored further.

On the ground examples of true co-management of a marine area will empower First Nations to undertake marine conservation and help to strengthen their legitimate role in managing marine resources. Undertaking a pilot project or study to implement an HMHA or other similarly designated area could provide an avenue to explore a true co-management relationship. Understanding the legal mechanisms and possible changes to the legislation to effect true co-management will be required. Policy research needs to identify options to accommodate First Nations' interests in true co-management setting.

4.3 Conclusion

The philosophical differences I've outlined between "western" and First Nation's cultural views on marine conservation provides an argument for First Nations' opposition to government initiatives, and can be used as critical information to address these differences. The rapid decline in species diversity and production of the worlds' oceans today speaks to a current relationship based on western views and science that is out of balance and impacting on resource sustainability. First Nations view that traditional knowledge and conservation philosophies are appropriate

strategies to slow or stop this decline; this will require a fundamental shift in how oceans are managed.

The theory of conservation in western science has its underpinnings in the creation of a land ethic (Leopold, 1966). Expanding this ethic to marine regions of the world has proven challenging to governments responsible for managing public resources. Marine environments, especially the foreshore, are not as easily defined as land units that have geographic boundaries (watersheds) or geological differences. The fluid nature of the ocean and limited scientific knowledge of marine ecosystems makes the application of a land derived conservation theory somewhat impractical to a marine environment. Ecosystem-like concepts in traditional societies provide a means to further expand the understanding of ecosystems leading to more effective conservation (Berkes *et al.*, 1998). Exploring indigenous resource management philosophies for the marine environment expands on the First Nations' views on the conservations of marine ecosystems, and helps to confirm and advance conservation theory in several key ways:

- 1) **Worldviews, embeddedness and ecosystem-based management** - The worldview expressed by Hul'qumi'num of "everything is connected" and the expression of their pivotal role in maintaining healthy ecosystems leads to redefining western views on ecosystem-based management to include humans as truly embedded in the ecosystem, and not just as an agent to lessen impacts. Given First Nations' current dissociation with traditional ways, re-establishing the connection of aboriginal people to marine resources through co-management relationships can provide key insight into maintaining marine ecosystems.
- 2) **Examining traditional tenure systems as a type of conservation unit on the Northwest Coast** - Traditional tenure systems of the Hul'qumi'num people were advanced social institutions, used in managing, enhancing and harvesting marine ecosystems sustainability for thousands of years. The tenure system established a type of conservation unit where productive resource sites were stewarded by kin-groups and communities. The group that was surveyed maintains that re-establishing a type of tenure system for

First Nations in the marine environment will enhance access to marine resources for First Nations and provide an opportunity to increase conservation by increasing the management role of the communities that are dependent upon those resources. This has been shown to be effective in other areas of the world, such as Oceania, with the re-introduction of the Territorial Use Rights Fisheries and in Japan with the Japanese fisheries cooperatives. It is possible that if the proposed Hul'qumi'num Management and Harvest Area was provided for in the Treaty process, parts of these areas could be set aside for conservation or "leased" back to general society for conservation purposes. Establishing a tenure system in the commonly held marine environments in Canada may require litigation by First Nations for recognition of their aboriginal rights to the ocean and seabed as it did in New Zealand.

3) **The focus on MPAs as the solution to marine conservation, instead of the development of institutional arrangements for conservation -**

Although there is apparent consensus between western scientists on the use of MPAs as an effective means to increase abundance and protect marine ecosystems, there is much scientific debate on where to establish MPAs, what is being protected inside an MPA, how much MPA area is needed to be effective in protecting marine ecosystems, etc. This uncertainty on where, how and how much, as well the added opposition of First Nations to the potential infringement on aboriginal rights and title by protected areas makes establishing MPAs increasingly difficult. Establishing co-management or community-based management institutional arrangements between governments and First Nations (or coastal communities) is proposed as a mechanism to build conservation strategies from both a bottom-up (community-based) and top-down (government) approach. Management objectives expressed by Hul'qumi'num in this study were focused on their involvement as a key to the success of local marine conservation efforts.

This thesis contends that the principles upon which government marine conservation strategies are premised are consistent with the principles of the Hul'qumi'num, although some differences occur in worldviews. However, the strategies proposed for marine conservation, such as the development of no-take zones in MPAs, are not. First Nations feel that there is valuable information in traditional tenure systems and resource management strategies on how to manage and conserve marine resources. First Nations maintain that their information must be considered in parallel with scientific information, and requires their involvement in managing marine resources.

In British Columbia, significant progress in implementing marine conservation measures has been impacted by the lack of First Nations support. From the Hul'qumi'num perspective, establishing a legitimate, meaningful relationship with First Nations for effective marine conservation is a priority. Establishing areas for the use of, and management by, First Nations could be examined, and has potential as a new type of zone in government's current proposal for NMCAs. Exploring new ways to accommodate First Nations' and indigenous peoples' worldviews, principles, goals and objectives with respect to marine resource environments will be necessary to begin to address this gap and allow the much-needed focus on marine conservation in Canada and other marine regions of the world.

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Appendix 1: Research Agreement

Research Agreement

Between

The Hul'qumi'num Treaty Group

and

Cheri Ayers, M.Sc. Candidate, University of Victoria

This agreement is intended to outline the relationship between the Hul'qumi'num Treaty Group (HTG) and Cheri Ayers in a collaborative research project.

Research Intention - The intention of the Hul'qumi'num Treaty Group in this undertaking is to gather information related to Hul'qumi'num traditional and contemporary views on marine planning. Cheri Ayers is undertaking this study to develop an understanding of the relationship Hul'qumi'num Mustimuhw have to marine resources within their traditional territory. The research will focus on understanding Hul'qumi'num marine conservation and stewardship principles, goals and objectives. Her intention is to write a thesis as partial fulfillment of a Masters degree at the University of Victoria.

Relationship – During the period of this research, Cheri Ayers, will no longer act as the Fisheries Consultant to HTG, unless agreed to by the parties. Robert Morales will provide advice and collaborate on the development of the survey and reviewing of the report. Cheri Ayers will consult with Robert Morales before undertaking research to discuss research goals, designs and workplans, and to explore how any proposed research activities may be mutually beneficial.

Discussions between HTG and Cheri Ayers will be held to identify suggestions and concerns to be followed up and considered in the research design, research workplan, interpretation of data, and publication and dissemination of research findings.

Remuneration and In-Kind Support - It is understood by all parties that Cheri Ayers is undertaking this research on her own accord and will not receive payment or compensation for the research conducted under this agreement directly from the HTG, unless outside funding is obtained. The HTG will administer any funding jointly obtained for this project (for a nominal administration fee), provide office space and the use of meeting rooms (when convenient to HTG) for conducting interviews with focus groups and research participants.

Copyright and Intellectual Property Rights – each Hul'qumi'num Mustimuhw participating the research shall do so only after an informed consent letter outlining any restrictions they might wish on the use of the information is signed by that participant. Originals of any audio tapes (digital and analogue formats) and maps and copies of

surveys and any notes collected by Cheri Ayers will be deposited with HTG once the research is completed and used in accordance with HTG policy. Copies of audio tapes and maps and the originals of surveys and field notes collected will be kept by Cheri Ayers. Data collected from individual interviewees during the survey will be anonymous unless permission is given by the interviewees for its public use. HTG and Cheri Ayers will keep the identifiers (information containing participant names) separate from the data to protect anonymity of participants. Cheri Ayers agrees to treat the knowledge, in its unwritten form, gleaned through this process, with respect and as the intellectual property of the participants. Use of the information in the future for another purpose (i.e. as part of a different study, etc.) beyond that outlined in this agreement will be with the permission of the HTG.

Outcomes - A report will be generated, separate from Cheri Ayers's academic work, and made available for a 4 week period for review and comment by HTG relating to the accuracy of the interpretation of the data and that the content correctly represents Hul'qumi'num views. The report copyright will be jointly held by Hul'qumi'num and Cheri Ayers. The report will be used by Cheri Ayers to guide the development of a thesis. Any information, relating to the interpretation of the information collected during this study, that is not contained in the report, used in the thesis will be subject to similar review and comment, as described above, by HTG prior to the publishing of the thesis. Portions of the report may be used directly in the thesis. HTG hereby grants Cheri Ayers licence to publish for scholarly and educational purposes all information collected during this project that relates to the research intention, except where individual participants have explicit restrictions described in the informed consent letter.

The thesis, any scholarly papers or publications, conference proceedings or presentations arising from this research will remain the intellectual property of Cheri Ayers and any co authors, and the authors will be free to communicate and disseminate their scholarly works. HTG will be acknowledged in the publication of any work related to this project. Copies of the thesis and all scholarly works will be made available to HTG.

Signed by:



 Hul'qumi'num Treaty Group

June 7/04
 Date



 Cheri Ayers, University of Victoria

June 7/04
 Date

Appendix 2: Summary of Focus Group One

Focus Group Session #1 – July 7th, 2004

Process and Questions

A. Start process with a few minutes of discussion about traditional and current uses of marine resources

1. How are the numbers of marine resources caught/harvested in the past different from today?
 - o *New rules and regulations have limited the fishery. SARA is going to limit FSC fishing, especially if more than salmon is listed.*
 - o *In the past, there were no limits or set numbers, people took what they needed. They traveled to the FR by canoe and fished until they got what they needed.*
 - o *Sharing and trading was also a big part of the past. Today, sharing is not happening like it used to.*
 - o *Also, the teachings of the past are being lost. No one is going fishing on their own anymore. Depending on guardians to catch their fish.*
 - o *The loss of the teachings and the changes in the numbers is due to a number of different factors:*
 - *Residential schools*
 - *Removal from the Gulf Island (except from Kuper)*
 - *Access is also a big problem. You used to be able to walk to most beaches. Now most beaches are only accessible by boat or a canoe.*
 - *The time it takes to go is also a problem. Most people have to stay home and work.*
 - *Also stocks are limited. Catching fish using traditional methods is not very successful because there just isn't enough fish now.*
 - *Also, mental access is a big part of it, when people think it is against the law to go fishing or gathering food in the marine environment they don't go*
 - *Changes in the sharing practices where fishing occurred near other communities (i.e Campbell River).*
 - *Changes in access to family members in the states.*
 - *Changes in the management structure. Before it was the responsibility of the family now it is with DFO and overall society.*
 - *Pollution is also a problem (especially in front of reserves)*
 - *Sports and commercial fisherman also a problem.*
 - *New diseases in fish and other animals is also a concern*
 - *Introduced species displacing native species*
 - *Habitat destruction (cities built on streams)*

- *Familial ties are also mostly gone. Example: Lummi – when you went you visited and if you didn't know where to harvest they told you where to go.*

B. Use questions below to discuss other uses of the ocean environment both in the past and currently

1. Other than fishing, what did Hul'qumi'num use the ocean for in the past?
 - *Drying and preparing fish and clams*
 - *Used marine resources to trade, barter and sold to make a living.*
 - *Many different things were harvested and gathered along the way (not just marine resources)*

C. Use questions below to discuss what protection measures they think are appropriate to conserve marine resources

1. What was traditional done by Hul'qumi'num to manage marine resources?
 - *People, in the past, if they were able, used to travel a long way away to harvest foods. This meant that those that couldn't travel could harvest closer and also it allowed resources that might be impacted to recover.*
 - *Respect was one of the biggest things. People only took what they needed. They also respected each others areas and only harvested from their own areas. Everyone knew who's areas were what and respected that.*
 - *Traveled to many different areas to make sure they didn't take too many species out of one area.*
 - *Streams were tended and prepared for salmon to come back to spawn.*
 - *People also had an in depth working knowledge of the resources that isn't seen today with fisheries managers and other academics.*
2. How did the traditional management deal with over-fishing?
 - *See above*
3. What should be done today to protect marine resources?
 - *Having a greater role in management for Hul'qumi'num. This could happen through the Treaty process*
 - *Hul'qumi'num should also have a say in the creation of marine parks*
 - *Sports fishers should also be managed with set quota's*
 - *Revenue from sports fishing should be shared with the First Nations (at least 50%)*

D. Discuss the meaning of conservation to Hul'qumi'num.

1. What is your understanding of the meaning of conservation?
 - o *Historically, the first salmon runs were let through until there was enough fish on the spawning grounds before they were taken in the weirs.*
 - o *Older people who knew and understood the runs and had thousands of years of historical knowledge, were the ones that managed and watched the weir.*
 - o *Again, practical knowledge about all the relationships between species and what each species needs to survive is not there like it used to be. This enables you to generate an understanding of what there is so you know when changes occur.*
 - o *Timing is also important. Historically there were set times for harvesting certain things. This aided in their conservation.*

E. Have a discussion on the current Parks Canada zoning strategy. Describe to participants the three types of zones that Parks uses.

1. What do you think about the three types of zones Parks Canada uses?
 - o *Don't like the proposed zones, especially the areas that are "protected". The important thing is to have the relationship to the resource strengthened. This can only happen through access. For example, beaches that are not regularly harvested will get over populated and the population will crash or sediment will become anoxic and nothing will grow there.*
 - o *The sentiments in this section, did not support the zoning of areas for complete protection. The thoughts seem to be that it is important to have access so people can be familiar with the resource, monitor it, steward it.*
 - o *Also, seemed to be a fear that these areas would be closed to First Nations in the future, even if the Government is saying that they won't be.*
 - o *Concern was expressed that by closing off areas there would be a disconnect between the people and the resources. The traditional knowledge that built up through generations of using resources allowed even subtle differences in populations to be noticed and management actions taken. An example was given of a beach that became over populated and all the clams died. This might have been avoided if someone had been regularly tending to the beach (like they did historically).*

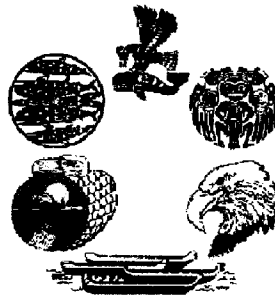
2. What can Hul'qumi'num do to contribute to managing marine resources?
 - o *Comments were made regarding the connection to the resources. Again the example of the beach. If Hul'qumi'num were able to dig over even closed areas the pollution would not set in.*
 - o *Sports fisheries should be licensed similar to commercial fisheries with designated areas and harvest limits (designated tones).*
 - o *Also and interested in Hul'qumi'num issuing sports fishers licenses and regulating the fishery*
 - o *Hatchery production should be allowed to return to the rivers to increase the overall production.*

F. Discuss the next meeting

- o I will organize information that I have heard into major themes
- o We will get together and review the information
- o Also next meeting will be used to review a draft survey questionnaire that I will be taking out into the Hul'qumi'num community.

Appendix 3: Survey Questionnaire

Participant No: _____



**Hul'qumi'num Marine Conservation
A Survey on the Development of Hul'qumi'num
Marine Conservation Principles, Goals and
Objectives**

**Cheri Ayers - Masters of Science Research
July 20, 2004**

INTRODUCTION

The Hul'qumi'num Treaty Group and Cheri Ayers are undertaking a survey of Hul'qumi'num members to gather information for the protection of marine resources like fish, seafood and shellfish. We would like to ask you a few questions to help us understand the basic things Hul'qumi'num Mustimuhw would do to keep marine resources healthy. Some band members have been able to maintain an active involvement in the use of marine resources, but other band members are no longer as involved. However, for the purposes of this study, the opinions of all band members are important.

This information will be kept confidential, which means your name would not be given out or connected to any answer you provide. The information will be used by the Treaty Group and by Cheri Ayers as part of her masters' degree research at the University of Victoria. The information will also be shared with each of the Hul'qumi'num member nations (band office). Parks Canada and DFO will be provided a summary of appropriate information to help them develop marine plans that consider Hul'qumi'num interests.

YOUR USE OF FISH AND MARINE RESOURCES

Q1 On average, how many times **a week in the summer** do you eat fish, or marine resources either at home or at soccer games, etc. (please circle the number of your answer)?

1. NEVER
2. 1-2 TIMES A WEEK
3. 3-4 TIMES A WEEK
4. 5-6 TIMES A WEEK
5. EVERY DAY OF THE WEEK

Q2 On average, how many times **in a week in the winter** do you eat fish, or marine resources either at home or at the big house, soccer games, etc. (please circle the number of your answer)?

1. NEVER
2. 1-2 TIMES A WEEK
3. 3-4 TIMES A WEEK
4. 5-6 TIMES A WEEK
5. EVERY DAY OF THE WEEK

Q3 On average, how often **in a week** would you like to have fish and seafood as a part of your diet? (please circle the number of your answer)

1. NEVER
2. 1-2 TIMES A WEEK
3. 3-4 TIMES A WEEK
4. 5-6 TIMES A WEEK
5. EVERY DAY OF THE WEEK

Q4 Which of the following fish and seafood have you eaten **in the past 12 months?** (please circle **all** that apply)

- | | | | | |
|------------|------------------|-------------------------|------------------|------------------|
| 1. SOCKEYE | 6. STEELHEAD | 11. MANILA/LITTLE NECKS | 16. GREEN URCHIN | 21. HERRING EGGS |
| 2. SPRING | 7. SOLE/FLOUNDER | 12. BUTTERS | 17. RED URCHIN | 22. OCTOPUS |
| 3. CHUM | 8. HALIBUT | 13. COCKLES | 18. OYSTERS | 23. SEAWEED |
| 4. COHO | 9. LINGCOD | 14. CRAB | 19. SCALLOPS | 24. OTHER _____ |
| 5. PINK | 10. ROCKFISH | 15. PRAWNS | 20. HERRING | |

Q5 What other activities do you do out in the ocean or on the islands? (please circle the number(s) of your answer)

1. VISITING THE BEACH
2. SITE SEEING IN A BOAT
3. CANOEING
4. HARVESTING PLANTS
5. PICNICING
6. OTHER: _____ (please list)

Q6 Please tell us how you would define marine conservation (please write a sentence or two below).

Q7 If salmon runs were disappearing, would you harvest the last male and female salmon? (please circle the number of your choice)

1. NO
2. YES

Q8 Which is more important to you? (please circle the number of you choice)

1. FISHING FOR FOOD, SOCIAL AND CEREMONIAL NEEDS
2. FISHING COMMERCIALY TO EARN A LIVING
3. BOTH

Q9 Are you or were you a commercial fisher? (please circle the number of your choice)

1. NO
2. YES

Q10 Are you or were you a traditional fisher? (please circle the number of your choice)

1. NO
2. YES

CONSERVATION OF FISH, SEAFOOD AND THE MARINE ENVIRONMENT

Q11 Some members feel that looking after (or conserving) marine resources is an important part of Hul'qumi'num culture and way of life, but others feel that this is no longer an important tradition. We want your opinion. Please indicate how important each statement is to you (circle the number of your choice).

STATEMENT	NOT AT ALL IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	NOT SURE
A Respecting marine resources	1	2	3	4	5
B Recognizing that all marine resources are connected	1	2	3	4	5
C Taking only what is needed for food, social and ceremonial needs	1	2	3	4	5
D Using natural marine resources as a source of income	1	2	3	4	5
E Using marine areas for shellfish aquaculture	1	2	3	4	5
F Developing an understanding of marine resources and the relationships between different animals through regularly harvesting marine resources	1	2	3	4	5
G To ensure that marine resources used by Hul'qumi'num are available for future generations	1	2	3	4	5
H To maintain populations of all native species	1	2	3	4	5
I Caring for all natural marine resources whether they are used by humans or not	1	2	3	4	5
J Caring only for marine resources used by humans	1	2	3	4	5
K Using marine areas for salmon aquaculture	1	2	3	4	5

Q12 From the above list please provide your top 5 statements that you feel are most important. Please rank the statements in order of most important to less important (**place the letter** of each principle in the space provided)

Statement 1 _____ (most important to me)

Statement 2 _____

Statement 3 _____

Statement 4 _____

Statement 5 _____ (less important to me)

GOALS AND OBJECTIVES FOR CONSERVING MARINE RESOURCES

Next we would like to ask you about what things you would like to see happen (goals and objectives) to conserve marine resources.

Q13 Listed below are some goals and objectives for marine conservation. In your opinion how important is each one?

GOAL / OBJECTIVE	NOT AT ALL IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	NOT SURE
A To ensure marine areas that are healthy and free of contamination	1	2	3	4	5
B To increase the numbers of marine resources available for food	1	2	3	4	5
C To reconnect the Hul'qumi'num Mustimuhw to the marine environment and resources	1	2	3	4	5
D To rehabilitate and restore marine resources	1	2	3	4	5
E Sharing marine resources with family members	1	2	3	4	5
F Sharing harvesting sites with other First Nations	1	2	3	4	5
G Traveling to other territories to harvest seafood	1	2	3	4	5
H Trading and bartering marine resources with others	1	2	3	4	5

I To increase the numbers of marine resources available for cultural purposes	1	2	3	4	5
J To provide opportunities for Hul'qumi'num to fish commercially	1	2	3	4	5

Q14 Are there any other goals or objectives that you would like to see happen to conserve marine resources? (please write your answer in the space provided)

Q15 From the list provided please provide your top 5 goals and objectives that you feel are most important. Please rank the goals and objectives in order of most important to less important (**place the letter** of each goal and objective in the space provided)

- Goal 1 _____ (most important to me)
- Goal 2 _____
- Goal 3 _____
- Goal 4 _____
- Goal 5 _____ (less important to me)

YOUR THOUGHTS ON MANAGING MARINE RESOURCES

Q16 Who should be involved in managing marine resources in Hul'qumi'num traditional territories? (please circle **all that apply**)

- 1. PROVINCIAL GOVERNMENT
- 2. RECREATIONAL FISHERMAN GROUPS
- 3. OTHER FIRST NATIONS WITHIN TT
- 4. LOCAL GOVERNMENT
- 5. FEDERAL GOVERNMENT (DFO)
- 6. HUL'QUMI'NUM GOVERNMENT
- 7. COMMERCIAL FISHERMAN GROUPS
- 8. CURRENT BAND OFFICES
- 9. ENVIRONMENTAL GROUPS
- 10. LOCAL COMMUNITY GROUPS

Q17 Fisheries management includes ensuring conservation of fish and shellfish.
Please indicate whether or not you agree or disagree with the following
principles for management. (please circle the number of your choice)

PRINCIPLE	STRONGLY DISAGREE	SOMEWHAT DISSAGREE	NEITHER	SOMEWHAT AGREE	STRONGLY AGREE
A First Nations rights must be respected	1	2	3	4	5
B Involvement by First Nations in managing (inventories, fishing plans, monitoring, enforcing) for conservation	1	2	3	4	5
C Traditional knowledge and practices of First Nations should contribute to management for conservation	1	2	3	4	5
D First Nations should share responsibility to conserve and protect marine resources	1	2	3	4	5
E Conservation restrictions should apply equally to everyone	1	2	3	4	5
F When marine resources increase, as a result of conservation, First Nations should be able to share in the opportunity for harvesting	1	2	3	4	5
G Managing for conservation should extend beyond international boundaries	1	2	3	4	5

Q18 Listed below are a number of management practices used in the past by Hul'qumi'num to manage marine resources. Please indicate whether you agree or disagree with the use of these practices in today's world (please circle the number of your choice)

	STATEMENT	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NEITHER	SOMEWHAT AGREE	STRONGLY AGREE
A	Areas were not harvested for a few years to allow them to recover when numbers of marine resources were low	1	2	3	4	5
B	Beaches were regularly dug to keep them healthy	1	2	3	4	5
C	Hul'qumi'num people that harvested were the managers	1	2	3	4	5
D	Elders in the community provided their knowledge and helped manage	1	2	3	4	5
E	Some harvesting areas were owned by villages or families	1	2	3	4	5

Q19 How do we know whether or not we are doing a good job of managing marine resources? Please indicate whether you agree or disagree with the following measures of a successful marine conservation plan (please circle the number of your choice)

	STATEMENT	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NEITHER	SOMEWHAT AGREE	STRONGLY AGREE
A	There is enough to feed all Hul'qumi'num Mustimuhw	1	2	3	4	5
B	Access to harvest marine resources is not a limitation for me	1	2	3	4	5
C	There are enough beaches that are not contaminated	1	2	3	4	5
D	There is enough natural marine resources returning each year for me to earn a living	1	2	3	4	5

Q20 Are there any other measures of a successful marine conservation plan that you would like to add? (please list below)

FACTORS THAT MAY LIMIT YOUR RELATIONSHIP WITH MARINE RESOURCES

Q21 Certain factors may be currently limiting the ability of Hul'qumi'num to look after (or conserve) or to access marine resources within their territory. Please indicate whether or not the following factors are limiting your ability to look after or to access marine resources.

FACTOR	NOT A LIMITATION	SLIGHT LIMITATION	MAJOR LIMITATION	NOT SURE
A Lack of a boat	1	2	3	4
B A decrease in fish available	1	2	3	4
C A decrease in shellfish available	1	2	3	4
D Lack of places to go fishing	1	2	3	4
E Lack of place to go digging	1	2	3	4
F Loss of fishing knowledge	1	2	3	4
G Contaminated clams and other seafood	1	2	3	4
H Red Tide closures	1	2	3	4
I Conflict with commercial fishers (competition and hassling)	1	2	3	4
J Conflict with sport fishers (competition or hassling)	1	2	3	4
K Government regulations (such as fishing gear, closed areas)	1	2	3	4
L Protocol arrangements with other First Nation's to fish in their territory	1	2	3	4
M Trading and bartering between First Nations	1	2	3	4
N Introduced species (e.g. varnish clam)	1	2	3	4

Q22 Is there anything else you would like to tell us about limiting factors or your access to marine resources?

Q23 Please indicate your overall satisfaction with your ability to access to marine resources?

- 1 VERY DISSATISFIED
- 2 SOMEWHAT DISSATISFIED
- 3 NEITHER/NOT SURE
- 4 SOMEWHAT SATISFIED
- 5 VERY SATISFIED

Q24 What is you most limiting factor (s) for accessing or looking after marine resources? (Place the letter of your choice from the list above on the line)

1. ___ 2. ___

APPROACHES TO PROTECTING MARINE RESOURCES

Q25 There are many different approaches to protecting marine resources. The following lists some examples. Please tell us whether you support or oppose the statements below. (circle the number of your choice)

STATEMENT	STRONGLY OPPOSE	SOMEWHAT OPPOSE	NEITHER	SOMEWHAT SUPPORT	STRONGLY SUPPORT
A Including appropriate traditional knowledge when managing marine resources	1	2	3	4	5
B Involving appropriate scientific knowledge when managing marine resources	1	2	3	4	5
C Involving local First Nations communities in developing marine resource plans	1	2	3	4	5
D Involving local communities in developing marine resource plans	1	2	3	4	5
E Re-developing exclusive harvest sites for <u>First Nations</u>	1	2	3	4	5
F Closing <u>some</u> areas seasonally to all fishing (including First Nation harvesting) to protect fish or shellfish	1	2	3	4	5

G	Closing <u>some</u> areas temporarily to all fishing (including First Nation harvesting) to protect fish or shellfish	1	2	3	4	5
H	Closing <u>some</u> areas permanently to all fishing (including First Nation harvesting) to protect fish or shellfish	1	2	3	4	5
I	Managing only for commercially fished species	1	2	3	4	5
J	Managing only for recreationally fished species	1	2	3	4	5
K	Managing only for culturally important species	1	2	3	4	5
L	Managing equally for all species	1	2	3	4	5
M	Zoning marine areas for different uses	1	2	3	4	5

Q26 From the above list please provide your top 5 approaches that you feel are most important. Please rank the goals and objectives in order of most important to less important (**place the letter** of each principle in the space provided)

Approach 1 _____ (most important to me)

Approach 2 _____

Approach 3 _____

Approach 4 _____

Approach 5 _____ (less important to me)

Thank you for your information. From the reading I have done it appears that historically Hul'qumi'num families or communities might have established areas where fishing was reduced or not allowed to protect certain runs of fish or when it was thought that numbers of a certain type of marine resource was low. Currently fisheries managers are proposing to establish areas where no one fishes to ensure fish and shellfish are protected and aren't over-fished. We would like your opinion on the establishment of No-Take zones in the marine environment.

YOUR OPINION ABOUT NO TAKE ZONES

Q27 Permanent No-take zones might also be in place to protect sensitive areas. Please indicate the extent to which you AGREE or DISAGREE with each statement (please circle number).

	STRONGLY DISAGREE	SOMEWHAT DISSAGREE	NEITHER	SOMEWHAT AGREE	STRONGLY AGREE
A Permanent no-take zones were originally an aboriginal concept to keep marine ecosystems healthy	1	2	3	4	5
B Permanent No-Take zones are a violation of aboriginal rights	1	2	3	4	5
C Permanent No-Take zones appropriately located will help increase the number of marine resources	1	2	3	4	5
D Permanent No-Take zones will potentially limit my ability to harvest seafood	1	2	3	4	5
E Permanent No-Take zones will help reduce the effect of over-fishing on some species by the commercial and recreational fishers	1	2	3	4	5
F Permanent No-Take zones will be hard to enforce	1	2	3	4	5
G I feel permanent No-Take zones are necessary	1	2	3	4	5
H Permanent No-Take zones are another way Government can limit my fishing.	1	2	3	4	5
I I will not fish in a No-take zone, established with Hul'qumi'num support, to help protect marine resources	1	2	3	4	5

Q28 Overall, would you say that you STRONGLY AGREE, SOMEWHAT AGREE, SOMEWHAT DISAGREE or STRONGLY DISAGREE with the establishment of some permanent No-take zones in the Hul'qumi'num Traditional Territory.

- 1 STRONGLY AGREE
- 2 SOMEWHAT AGREE
- 3 NEITHER/NOT SURE
- 4 SOMEWHAT DISAGREE
- 5 STRONGLY DISAGREE

Q29 Would you agree or disagree with the establishment of some permanent No-Take Zones, if these areas and the fish and marine resources within the No-Take zones were managed by Hul'qumi'num?

- 1 STRONGLY AGREE
- 2 SOMEWHAT AGREE
- 3 NEITHER/NOT SURE
- 4 SOMEWHAT DISAGREE
- 5 STRONGLY DISAGREE

Q30a Would you agree with permanent No-Take Areas if Hul'qumi'num were permitted to harvest for food social or ceremonial fish in-side the areas?

1. No
2. Yes

Q30b Would you agree with permanent No-Take Zones if they were proposed by the Hul'qumi'num?

1. No
2. Yes

ABOUT YOU

Finally, we would like to ask a few questions about you.

Q31 What is your household size (i.e. how many people stay/live in your house on a regular basis?).

_____ PEOPLE/PERSON

Q32 Are you male or female? (please circle the number of your answer)

- 1 MALE
- 2 FEMALE

Q33 Do you live on the reserve? (please circle the number of your answer)

- 1 NOT AT ALL
- 2 LESS THAN 50% OF THE LAST 12 MONTHS
- 3 BETWEEN 50%-100% OF THE LAST 12 MONTHS

Q34 If you live on the reserve please tell us which reserve you live on (circle the number of your choice)

- | | |
|----------------|------------------|
| 1 SHELL BEACH | 8 THEIK |
| 2 KULLETT BAY | 9 KOKSILAH |
| 3 KUPER ISLAND | 10 CLEM CLEM |
| 4 QUAMICHAN | 11 WESTHOLME |
| 5 COMEAKIN | 12 LAKE COWICHAN |
| 6 SOMENA | 13 OTHER _____ |
| 7 TUSSIE | |

Q35 Which band do you belong to?

- 1 CHEMAINUS
- 2 PENELAKUT
- 3 LYACKSON
- 4 LAKE COWICHAN
- 5 HALALT
- 6 COWICHAN
- 7 OTHER _____ (please list)

Q36 Are there any comments you would like to add about the survey or marine resources?

Q37 Who would you recommend that we interview next? _____

Thank you for your time.

Appendix 4: Focus Group #2: Hul'qumi'num Youth

September 8, 2004

5:00pm – 9:00pm

AGENDA

1. Have participants complete the Questionnaire
2. Break for Dinner 6:15 – 6:45
3. Planning for Marine Conservation 6:45 – 9:00
 - Select a goal/objective from the list below and discuss how Hul'qumi'num could plan to accomplish it.
 - Generate an action plan for each goal
 - Discuss who should be involved in this

4 GOAL / OBJECTIVE	
A	To ensure marine areas that are healthy and free of contamination and rehabilitate and restore marine resources
B	To increase the numbers of marine resources available for food and cultural purposes
C	To reconnect the Hul'qumi'num Mustimuhw to the marine environment and resources
D	Sharing harvesting sites with other First Nations and Traveling to other territories to harvest seafood
E	Trading and bartering marine resources with others
F	To provide opportunities for Hul'qumi'num to fish commercially

Appendix 5: Focus Group #3 Process

Marine Conservation Project Focus Group #3, November 12, 2004 Hul'qumi'num Treaty Group Office

Background

The purpose of this meeting is to talk about how you would manage and conserve marine resources in your territory. The Treaty Group has put forward in the negotiations that there should be areas within the Hul'qumi'num traditional territory that are for the exclusive use and management of Hul'qumi'num Mustimuhw. These areas might be places like Sansum Narrows, Kullett Bay, the waters surrounding some of the Islands, Polier Pass and Active Pass, Cape Kepple and Ladysmith Harbour. The Hul'qumi'num would be responsible to look after these areas. I would like the discussion today to focus on what Hul'qumi'num would do to conserve and manage marine resources in an area like Sansum Narrows.

Hul'qumi'num Marine Conservation Principles, Goals and Objectives Learned through the first Focus Group and the Community Survey

Top 5 Guiding Principles

1. Take only what is needed
2. Respecting marine resources
3. Maintaining populations of all native species
4. Ensuring marine resources used by Hul'qumi'num are available for future generations
5. Recognizing all marine resources are connected

Top 5 Goals and Objectives

1. Ensuring marine areas that are healthy and free of contamination
2. Increasing the numbers of marine resources available for food
3. Rehabilitate and restore marine resources
4. Reconnecting the Hul'qumi'num Mustimuhw to the marine environment and resources
5. Sharing marine resources with family members

Some Questions to Think About

If Hul'qumi'num had an area like Sansum Narrows that you were responsible for managing how would you answer the following questions?

1. Who would be the managers?
2. Would non-Hul'qumi'num be involved in managing marine resources?
3. How would harvesters be involved in managing, or would they be involved?
4. How would Hul'qumi'num managers make sure that marine resources were not being over-harvested?
5. How would you decide what was "needed" (principle 1 above)?
6. How would you ensure equitable access to marine resources among Hul'qumi'num?
7. Would areas be set aside or protected where no harvesting would happen?

8. Would these areas be permanent or just for as long as needed?
9. What is the role of traditional knowledge in managing the area?
10. What is the role of scientific knowledge in managing the area?
11. In the past if someone broke the rules what was done?
12. Would that still apply today?

Appendix 6: Ethics Review Approval



University of Victoria


Human Research Ethics Board
 Office of Research Services
 University of Victoria
 Room A240 University Centre
 Tel (250) 472-4545 Fax (250) 721-8960
 Email ovprhe@uvic.ca Web www.research.uvic.ca

Human Research Ethics Board Certificate of Approval

<u>Principal Investigator</u> Cheri Ayers Graduate Student	<u>Department/School</u> GEOG	<u>Supervisor</u> Philip Dearden
<u>Co-Investigator(s)</u>		
<u>Project Title</u> : Marine Conservation from a First Nations Perspective		
<u>Protocol No.</u> 285-04	<u>Approval Date</u> 17-Aug-04	<u>Start Date</u> 13-May-04
		<u>End Date</u> 16-Aug-05

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Subjects.



Dr. Richard Keeler
 Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the procedures. Extensions or minor amendments may be granted upon receipt of a "Research Status" form.

285-04 Ayers, Cheri

Appendix 7: Participant Consent Form

UNIVERSITY OF VICTORIA
OFFICE OF THE VICE-PRESIDENT, RESEARCH
HUMAN RESEARCH ETHICS COMMITTEE

Participant Consent Form

Marine Conservation from a First Nations Perspective

Participant:

Name: _____

Date of Interview: _____

Address: _____

Location: _____

Phone Number: _____

You are being invited to participate in a study entitled "Marine Conservation from a First Nations Perspective" that is being conducted by Cheri Ayers. This study is being conducted in collaboration with the Hul'qumi'num Treaty Group. Cheri Ayers is a graduate student in the Department of Geography at the University of Victoria and you may contact her if you have further questions by visiting or calling her at the Hul'qumi'num Treaty Group office (250-245-4660). As a graduate student, I am required to conduct research as part of the requirements for a Master's degree in Science.

The intention of this survey is to gather information for the protection of marine resources like fish, seafood and shellfish. Research of this type is important because it will help to increase the knowledge about the marine environment and provide information on how to better protect it.

You are being asked to participate in this study because you are a Hul'qumi'num member. You were selected because of your knowledge of the marine environment, or because of your position as a chief, council member or technical representative.

If you agree to voluntarily participate in this research, your participation will include a single interview and/or participation in a 1-2 day focus group meeting.

As a participant I have been fully informed of the following points prior to the interview or focus group:

- (1) My participation in this research is voluntary, and I understand the intent and purpose of this research.
- (2) My time commitment involved in this project is between 0.5 and 2 days. I will be compensated for my time at \$40 per half day or \$100 per full day.
- (3) If I decide to participate and then change my mind, I am free to withdraw from the survey interview/focus group at any time. I can refuse to answer any question. If I do withdraw from the survey I understand that my data will not be used in the analysis and will be destroyed immediately (if I prefer).
- (4) I understand that it is my responsibility not to share information considered sacred or confidential by my family or community.
- (5) The interview/focus group recordings (written or audio) or resulting transcripts may be used for the following purposes (*Participant should cross out any uses not permitted and these should be initialled by both participant and interviewer*):

- (a) Preparation of a report that will be provided to Hul'qumi'num member communities and the Hul'qumi'num Board of Directors;
 - (b) Inclusion of information into the Treaty Process;
 - (c) The development of marine resource strategies and assessing proposed government plans for marine resources;
 - (d) Inclusion of survey questionnaire, and audio tapes from focus groups in the Hul'qumi'num Treaty Group archive;
 - (e) Cheri Ayers will retain a copy of all of audio tapes and the original survey questionnaires in a secure location;
 - (f) The preparation of a report of appropriate information on Hul'qumi'num marine conservation principles, goals and objectives to be given to Fisheries and Oceans Canada (DFO) and Parks Canada;
 - (g) Academic research and publication, including scientific articles and a Masters thesis, and conference presentations and/or proceedings;
 - (h) Policy, education and position papers on marine conservation from a First Nations perspective.
- (6) I am aware that the survey questionnaire or transcripts of a focus group interview will be kept in secure and private storage by Cheri Ayers at the University of Victoria and the Hul'qumi'num Treaty Group office.
- (7) I have been advised that Cheri Ayers and the Hul'qumi'num Treaty Group will have copyright to the tapes and transcripts of the interview/ focus group and that they will not use this information for purposes other than those set out above without my permission.
- (8) Other conditions for my participation in this research include:

(9) Acknowledgment:

I am willing to be acknowledged by name as the source of this information (with exception as noted). Yes No

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

I agree to participate in the project described above:

Signed: _____ Printed name: _____

I acknowledge receiving a copy of this consent form.

Signed: _____ Date: _____

Note: In addition to being able to contact the researcher at the number listed above, you may also contact her supervisor Dr. Phillip Dearden, University of Victoria (250)721-7335 if you have any concerns. You may also verify the ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice-President, Research, University of Victoria (250)472-4362.

Appendix 8: Survey Results

Table 1: Consumption and Desire of Marine Foods by Hul'qumi'num over a One-Year Period (Q1-3)

Consumption of Marine Foods	Response (%)					Every Day
	Never	1-2 times/month	1-2 times/week	3-4 times/week	5-6 times/week	
A Summer Consumption	2.4	2.4	39	39	9.8	7.3
B Winter Consumption	2.5	2.5	32.5	47.5	5	10
C Desired Consumption	0	2.5	17.5	41.5	19.5	19.5

Table 2: Percent of Hul'qumi'num Community Members who have Eaten Marine Foods in the Past 1 Year (Q4)

Fish	Response %	Shellfish & Other Invertebrates	Response %
A Sockeye	95.10	M Crab	95.10
B Lingcod	78.00	N Butter clams	82.90
C Spring	75.60	O Oysters	78.00
D Herring Eggs	73.20	P Prawn	78.00
E Herring	58.50	Q Manila/Littleneck clams	68.30
F Halibut	53.70	R Red Urchin	63.40
G Chum	51.20	S Cockles	53.70
H Coho	46.30	T Octopus	53.70
I Rockfish	41.50	U Green Urchin	41.50
J Pink	34.10	V Other	41.50
K Sole/Flounder	22.00	W Seaweed	22.00
L Steelhead	19.50	X Scallops	19.50

Table 3: Percent of Hul'qumi'num Respondents who Pursue Other Activities out on the Ocean or on the Islands (Q5)

Activities	Response %
A Visiting the Beach	85.40
B Site Seeing in a Boat	61.00
C Canoeing	29.30
D Harvesting Plants	31.70
E Picnicing	53.70
F Other	58.50

Table 4: Relative Importance of Principles of Conservation of Fish, Seafood and the Marine Environment (Q11)

Principle	Response %				Mean	SD
	Extremely Important 4	Very Important 3	Somewhat Important 2	Not at all Important 1		
A Using marine areas for salmon aquaculture	5.60	0.00	22.20	72.20	1.39	0.78
B Using marine areas for shellfish aquaculture	30.80	41.00	12.80	15.40	2.87	1.03
C Using natural marine resources as a source of income	32.50	32.50	27.50	7.50	2.90	0.95
D Caring only for marine resources used by humans	34.20	31.60	13.20	21.10	2.79	1.14
E Developing an understanding of marine resources through harvesting	43.60	43.60	12.80	0.00	3.31	0.69
F Recognizing that all marine resources are connected	51.20	46.30	2.40	0.00	3.49	0.55
G Caring for all natural marine resources whether they are used by humans or not	52.50	37.50	10.00	0.00	3.42	0.67
H Respecting Marine Resources	75.60	24.40	0.00	0.00	3.76	0.43
I Taking only what is needed for food, social and ceremonial needs	78.00	19.50	2.40	0.00	3.76	0.49
J Ensuring marine resources used by Hul'qumi'num are available for future generations	78.00	22.00	0.00	0.00	3.70	0.42
K Maintaining populations of all native species	92.70	7.30	0.00	0.00	3.90	0.26

Table 5: % Responding 1st, 2nd, 3rd, 4th or 5th Most Important Principle for Marine Conservation (Q12)

Principle	Response %				
	First Most Important	Second Most Important	Third Most Important	Forth Most Important	Fifth Most Important
A Respecting Marine Resources	27.80	16.70	11.10	19.40	2.90
B Recognizing that all marine resources are connected	8.30	8.30	8.30	2.80	17.10
C Taking only what is needed for food, social and ceremonial needs	22.20	30.60	16.70	16.70	2.90
D Using natural marine resources as a source of income	0.00	2.80	8.30	11.10	5.70
E Using marine areas for shellfish aquaculture	0.00	0.00	0.00	2.80	2.90
F Developing an understanding of marine resources through harvesting	0.00	8.30	5.60	8.30	14.30
G Ensuring marine reesources used by Hul'qumi'num are available for future generations	22.20	5.60	16.70	19.40	17.10
H Maintaining populations of all native species	5.60	16.70	22.20	13.90	14.30
I Caring for all natural marine resources whether they are used by humans or not	5.60	11.10	5.60	5.60	8.60
J Caring only for marine resources used by humans	8.30	0.00	5.60	0.00	11.40
K Using marine areas for salmon aquaculture	0.00	0.00	0.00	0.00	2.90

Table 6: Importance of Marine Conservation Goals and Objectives to Hul'qumi'num Community Members (Q13)

Goal and Objective	Response %				Mean	SD
	Extremely Important 4	Very Important 3	Somewhat Important 2	Not at all Important 1		
A Sharing harvesting sites with other First Nations	35.00	32.50	22.50	10.00	2.97	1.04
B Travelling to other territories to harvest seafood	36.60	43.90	14.60	4.90	3.12	0.75
C Trading and bartering marine resources with others	43.90	43.90	9.80	2.40	3.29	0.75
D Providing opportunities for Hul'qumi'num to fish commercially	52.50	37.50	10.00	0.00	3.46	0.71
E Sharing marine resources with family members	58.50	36.60	4.90	0.00	3.54	0.59
F Reconnecting the Hul'qumi'num Mustimuhw to the marine environment and resources	65.90	29.30	2.40	2.40	3.58	0.67
G Increasing the numbers of marine resources available for cultural purposes	65.90	31.70	2.40	0.00	3.63	0.54
H Increasing the numbers of marine resources available for food	65.90	34.10	0.00	0.00	3.66	0.48
I Rehabilitate and restore marine resources	75.60	24.40	0.00	0.00	3.76	0.43
J Ensuring marine areas that are healthy and free of contamination	92.70	7.30	0.00	0.00	3.93	0.26

Table 7: Percent of Respondents Choosing 1st, 2nd, 3rd, 4th, or 5th Most Important Goal or Objective for Marine Conservation (Q15)

	Goal and Objectives	Response %				
		First Most Important	Second Most Important	Third Most Important	Forth Most Important	Fifth Most Important
A	Sharing harvesting sites with other First Nations	0.00	0.00	2.90	22.90	8.80
B	Trading and bartering marine resources with others	0.00	2.90	0.00	11.40	17.60
C	Travelling to other territories to harvest seafood	0.00	2.90	2.90	8.60	5.90
D	Sharing marine resources with family members	0.00	5.70	22.90	11.40	5.90
E	Increasing the numbers of marine resources available for cultural purposes	5.70	5.70	8.60	11.40	11.80
F	Providing opportunities for Hul'qumi'num to fish commercially	5.70	8.60	8.60	8.60	11.80
G	Rehabilitate and restore marine resources	5.70	17.10	25.70	8.60	5.90
H	Increasing the numbers of marine resources available for food	8.60	28.60	11.40	5.70	2.90
I	Reconnecting the Hul'qumi'num Mustimuhw to the marine environment and resources	14.30	14.30	14.30	5.70	0.00
J	Ensuring marine areas that are healthy and free of contamination	57.10	14.30	2.90	5.70	14.70

Table 9: Agreement or Disagreement With Principles for Management (Q17)

	Principle	Response %					Mean	SD
		Strongly Agree 2	Somewhat Agree 1	Neither 0	Somewhat Disagree -1	Strongly Disagree -2		
A	Conservation restrictions should apply equally to everyone	61.00	26.80	4.90	4.90	2.40	1.39	0.97
B	Managing for conservation should extend beyond international boundaries	70.70	26.80	2.40	0.00	0.00	1.68	0.52
	When marine resources increase, as a result of conservation, FN's should be able to share in the opportunity for harvesting	80.50	17.10	2.40	0.00	0.00	1.78	0.47
C	Involvement by FN's in managing for conservation	92.70	4.90	2.40	0.00	0.00	1.90	0.37
	First Nations rights must be respected	97.60	2.40	0.00	0.00	0.00	1.97	0.15
D	First Nations should share responsibility to conserve and protect marine resources	97.60	2.40	0.00	0.00	0.00	1.97	0.16
	Traditional knowledge and practices of FN's should contribute to management for conservation	97.60	2.40	0.00	0.00	0.00	1.73	0.45

Table 10: Percent Agreeing With the Use of Past Management Practices in Today's World (Q18)

	Management Practice	Response %					Mean	SD
		Strongly Agree 2	Somewhat Agree 1	Neither 0	Somewhat Disagree -1	Strongly Disagree -2		
A	Some harvesting areas were owned by villages or families	25.00	42.50	5.00	17.50	10.00	0.55	1.31
	Hul'qumi'num people that harvested were the managers	52.50	40.00	2.50	2.50	2.50	1.37	0.87
B	Beaches were regularly dug to keep them healthy	60.00	35.00	2.50	2.50	0.00	1.52	0.68
	Elders in the community provided their knowledge and helped manage	75.00	25.00	0.00	0.00	0.00	1.75	0.44
C	Areas were not harvested for a few years to allow them to recover when numbers of marine resources were low	77.50	12.50	2.50	2.50	5.00	1.55	1.04

Table 11: Percent Agreeing with Measure of a Successful Marine Conservation Plan (Q19)

Measure of Success	Response %					Mean	SD
	Strongly Agree 2	Somewhat Agree 1	Neither 0	Somewhat Disagree -1	Strongly Disagree -2		
A Access to harvest marine resources is not a limitation for me	40.00	45.00	7.50	5.00	2.50	1.15	0.95
B There are enough beaches that are not contaminated	50.00	42.50	7.50	0.00	0.00	1.42	0.63
C There is enough to feed all Hul'qumi'num Mustimuhw	57.50	35.00	2.50	5.00	0.00	1.45	0.78
D There is enough natural marine resources returning each year for me to earn a living	60.00	22.50	15.00	2.50	0.00	1.40	0.84

Table 12: Percent Indicating Factor is a Limitation to Access or Conservation of Marine Resources (Q21)

Factor	Response %				Mean	SD
	Major Limitation 3	Slight Limitation 2	Not Sure 4	Not a Limitation 1		
A Trading and bartering between FN's	10.00	47.50	10.00	32.50	1.97	0.92
B Loss of fishing knowledge	17.50	15.00	2.50	65.00	1.57	0.87
C Protocol arrangements with other FN's to fish in their territory	22.50	50.00	2.50	25.00	2.02	0.77
D Lack of places to go fishing	27.50	37.50	2.50	32.50	2.00	0.85
E Introduced species	35.90	17.90	15.40	30.80	2.34	1.09
F Lack of a boat	45.00	10.00	0.00	45.00	2.00	0.96
G Conflict with sports fishers	47.50	25.00	2.50	25.00	2.27	0.88
H A decrease in shellfish available	55.00	25.00	2.50	17.50	2.42	0.81
I A decrease in fish available	57.50	30.00	5.00	7.50	2.60	0.71
J Conflict with commercial fishers	59.00	20.50	2.60	17.90	2.46	0.82
K Government regulations	60.00	30.00	0.00	5.00	2.60	0.59
L Lack of places to go digging	65.00	25.00	0.00	10.00	2.55	0.68
M Red tide closures	70.00	22.50	5.00	2.50	2.77	0.58
N Contaminated clams and other seafood	77.50	17.50	2.50	2.50	2.80	0.52

Table 13: Percent Indicating a Most Limiting Factor(s) to Accessing or Conserving Marine Resources (Q24)

	Factor	Response %				Mean	SD
		Major Limitation 3	Slight Limitation 2	Not Sure 4	Not a Limitation 1		
A	Trading and bartering between FN's	10.00	47.50	10.00	32.50	1.97	0.92
B	Loss of fishing knowledge	17.50	15.00	2.50	65.00	1.57	0.87
C	Protocol arrangements with other FN's to fish in their territory	22.50	50.00	2.50	25.00	2.02	0.77
D	Lack of places to go fishing	27.50	37.50	2.50	32.50	2.00	0.85
E	Introduced species	35.90	17.90	15.40	30.80	2.34	1.09
F	Lack of a boat	45.00	10.00	0.00	45.00	2.00	0.96
G	Conflict with sports fishers	47.50	25.00	2.50	25.00	2.27	0.88
H	A decrease in shellfish available	55.00	25.00	2.50	17.50	2.42	0.81
I	A decrease in fish available	57.50	30.00	5.00	7.50	2.60	0.71
J	Conflict with commercial fishers	59.00	20.50	2.60	17.90	2.46	0.82
K	Government regulations	60.00	30.00	0.00	5.00	2.60	0.59
L	Lack of places to go digging	65.00	25.00	0.00	10.00	2.55	0.68
M	Red tide closures	70.00	22.50	5.00	2.50	2.77	0.58
N	Contaminated clams and other seafood	77.50	17.50	2.50	2.50	2.80	0.52

Table 14: Percent Supporting Approach to Protecting Marine Resources (Q25)

Management Approach		Response %					Mean	SD
		Strongly Support 2	Somewhat Support 1	Neither 0	Somewhat Oppose -1	Strongly Oppose -2		
1	Closing some areas permanently to all fishing to protect fish or shellfish	0.00	10.00	12.50	20.00	57.50	-1.25	1.03
2	Managing only for recreationally fished species	7.50	20.00	27.50	17.50	27.50	-0.37	1.29
3	Managing only for commercially fished species	12.50	27.50	20.00	17.50	22.50	-0.10	1.37
4	Zoning for marine areas for different uses	26.30	28.90	21.10	13.20	10.50	0.47	1.31
5	Managing only for culturally important species	35.00	30.00	12.50	7.50	15.00	0.62	1.43
6	Involving local communities in developing marine resource plans	37.50	35.00	2.50	22.50	2.50	0.82	1.24
7	Closing some areas temporarily to all fishing to protect fish or shellfish	53.80	35.90	0.00	7.70	2.60	1.31	1.00
8	Involving appropriate scientific knowledge when managing marine resources	57.50	32.50	5.00	2.50	0.00	1.55	0.81
9	Closing some areas seasonally to all fishing to protect fish or shellfish	70.00	27.50	0.00	0.00	2.50	1.62	0.74
10	Managing equally for all species	72.50	20.00	7.50	0.00	0.00	1.65	0.62
11	Re-developing exclusive harvest sites for First Nations	82.50	15.00	2.50	0.00	0.00	1.80	0.46
12	Including appropriate traditional knowledge when managing marine resources	85.00	15.00	0.00	0.00	0.00	1.85	0.36
13	Involving local First Nations communities in developing marine resource plans	90.00	10.00	0.00	0.00	0.00	1.90	0.31

Table 15: Overall Satisfaction with Ability to Access Marine Resources (Q23)

Overall	Response %
A Very Dissatisfied	30.80
B Somewhat Dissatisfied	41.00
C Somewhat Satisfied	20.50
D Very Satisfied	5.10
E Neither/Not Sure	2.60

Table 16: Top Five Most Important Approaches to Protecting Marine Resources (Q26)

Management Approach	Response %				
	First Most Important	Second Most Important	Third Most Important	Forth Most Important	Fifth Most Important
A Including appropriate traditional knowledge when managing marine resources	38.90	22.20	2.80	8.30	8.30
B Involving local First Nations communities in developing marine resource plans	33.30	22.20	27.80	11.10	2.80
C Involving appropriate scientific knowledge when managing marine resources	11.10	25.00	11.10	2.80	5.60
D Re-developing exclusive harvest sites for First Nations	5.60	25.00	16.70	16.70	8.30
E Managing only for culturally important species	5.60	0.00	2.80	8.30	11.10
F Managing equally for all species	5.60	0.00	2.80	13.90	25.00
G Closing some areas seasonally to all fishing to protect fish or shellfish	0.00	2.80	13.90	16.70	16.70
H Closing some areas temporarily to all fishing to protect fish or shellfish	0.00	2.80	8.30	5.60	5.60
I Managing only for recreationally fished species	0.00	0.00	2.80	0.00	0.00
J Involving local communities in developing marine resource plans	0.00	0.00	0.00	11.10	5.60
K Closing some areas permanently to all fishing to protect fish or shellfish	0.00	0.00	0.00	0.00	2.80
L Managing only for commercially fished species	0.00	0.00	0.00	2.80	5.60
M Zoning for marine areas for different uses	0.00	0.00	0.00	2.80	2.80

Table 17: Percent Agreeing with Attitudinal Statements Regarding No-Take Zones (Q27)

Management Practice	% Response					Mean	SD
	Strongly Agree 2	Somewhat Agree 1	Neither 0	Somewhat Disagree -1	Strongly Disagree -2		
A Permanent no-take zones were originally an aboriginal concept to keep marine ecosystems healthy	0.00	15.00	20.00	15.00	50.00	-1.00	1.15
B I feel permanent no-take zones are necessary	10.00	30.00	22.50	17.00	20.00	-0.07	1.31
C Permanent no-take zones appropriately located will help increase the number of marine resources	35.00	47.50	2.50	10.00	5.00	0.97	1.12
D I will not fish in a no-take zone, established with Hul'qumi'num support, to help protect marine resources	40.00	35.00	12.50	10.00	2.50	1.00	1.08
E Permanent no-take zones are another way Government can limit my fishing	42.50	37.50	7.50	7.50	5.00	1.05	1.13
F Permanent no-take zones will potentially limit my ability to harvest seafood	45.00	35.00	10.00	7.50	2.50	1.12	1.04
G Permanent no-take zones will help reduce the effect of over-fishing on some species by the commercial and recreational fishers	45.00	40.00	10.00	0.00	5.00	1.20	0.99
H Permanent no-take zones will be hard to enforce	62.50	27.50	2.50	2.50	5.00	1.40	1.03
I Permanent no-take zones are a violation of aboriginal rights	70.00	17.50	2.50	5.00	5.00	1.42	1.10

Table 18: Agreement with the Establishment of No-Take Zones Overall, if Managed by Hul'qumi'num, if Hul'qumi'num were Still Allowed to Harvest Inside, and if the No-Take was Established by the Hul'qumi'num (Q28-29)

Statement	Response %					Mean	SD
	Strongly Agree	Somewhat Agree	Neither	Somewhat Disagree	Strongly Disagree		
Overall agreement with the establishment of some permanent no-take zones	10.00	37.50	17.50	15.00	20.00	0.07	1.33
Agreement with the establishment of some permanent no-take zones if managed by the Hul'qumi'num	37.50	37.50	10.00	7.50	7.50	0.90	1.21

Table 19: Percent Agreeing with the Establishment of No-Take Zones if Hul'qumi'num were Permitted to Harvest inside the No-Take or if the No-Take Zone was Established by Hul'qumi'num (Q30a-30b)

		Response %	
		No	Yes
A	Agreement with no-take zones if Hul'qumi'num were still allowed to fish inside the no-take zone	12.80	87.20
B	Agreement with no-take zones if established by the Hul'qumi'num	11.10	88.90

Table 20: Demographics of the Survey Respondents (Q9, Q10, Q31-35)

Household Size	# Surveyed
One - Three	5
Four - six	10
Seven -Nine	3
Twelve	1
Thirteen	1
Gender	
Male	30
Female	11
Participant a Traditional Fisher	
No	2
Yes	39
Is/Was Participant a Commercial Fisher	
No	15
Yes	26
Living on the Reserve	
Between 51-100%	35
Not at all	4
Less than 50%	2
Reserve Participant is Living On	
Shell Beach	9
Kuper Island	9
Kulleet Bay	6
Westholme	6
Other	3
Koksilah	2
Quamichan	1
Tussie	1
Theik	1
Clem Clem	1
Lake Cowichan	1
Band Participant Belongs To	
Chemainus	13
Penelakut	10
Cowichan	10
Halalt	6
Lyackson	1
Lake Cowichan	1

Appendix 9: Qualitative responses to the open-ended question, “Please tell us how you would define marine conservation”? (Q6)

Respondent #	Definition/Response
2	“Protecting and taking care of waters and beaches.”
4	“Only taking what you need. Leave enough for tomorrow, and keeping the environment clean.”
5	“Need people to clean up beaches & supervise it { guardians). Protecting the salmon runs in the long run.”
6	“Everything is connected, the air, land; the sea are connected – we need to be mindful of the air and sea. Everything is connected.”
7	“In most cases conservation would be that we preserve what’s out there by only taking what they need.”
8	“Take only what you need, and never to abuse what the water gives you. Dig so much and move to another area, just like farming you have to turn the soil or it will become contaminated. Keep turning the soil on the beaches then beaches will produce food.”
9	“Before Europeans knew too much it was part of our diet then they learned how to eat it. Taking only what you need and putting back small ones.”
10	“It was and is important to cultivate the beaches, just like a farm you have too keep turning the soil to keep the beaches healthy.”
11	“Looking after beaches- only taking the big ones and leaving the small ones.”
12	“Don’t over harvest, just take the legal sized clams, over harvesting can ruin the beaches. Move around so you don’t harvest just one area. Important to return what’s not used from the fish back to the river.”
13	“Sustaining resources so we can always go harvesting for food or commercial.”
15	“Only take what you need- leave the place, as it was when you got there.”
18	“Only take what you need. Our people see keeping something there for future use.”
19	“Everything must be respected therefore oceans & rivers don’t have respect. Everything in it needs to be respected to & the purpose it was given to us was to sustain our well being.”
20	“Take only what you are going to eat.”
21	“Important to turn soil over on beaches to keep them healthy - taking only what you need.”
22	“Take only what you need. Don’t take everything from one area. Don’t destroy one beach move around.”
23	“Only take what you need and make sure that the beaches don’t become more polluted than they are.”
24	“We were told not to waste anything, including all resources.”
26	“Ensuring marine species for future generations to harvest for food, ceremonial and social needs. Take only what you need. “
28	“Take only what you can eat and if you have more than you need to share.

31	"Only dig what was needed for the table."
33	"Don't take what's not necessary, just take what you'll feed your family and don't waste. Return to the beaches what's not being used."
34	"Take only what you need and don't waste"
37	"Protecting as much as you can for people, our people only take as much as they need."
38	"The balance between harvesting an adequate supply of marine resources and allowing a number of those resources time to replenish themselves."

Appendix 10: Overall Attitude towards Permanent No Take Zones

Table 20: Overall Percent of Participants Agreeing with the Establishment of No-take Zones and Agreement with No-take Zones if managed by Hul'qumi'num

Statement	Response %				
	Strongly Agree	Somewhat Agree	Neither	Somewhat Disagree	Strongly Disagree
Overall agreement with the establishment of some permanent no-take zones	10.00	37.50	17.50	15.00	20.00
Agreement with the establishment of some permanent no-take zones if managed by the Hul'qumi'num	37.50	37.50	10.00	7.50	7.50

Table 21: Percent of Participants Agreeing to the Establishment of Permanent No-take Zones if Hul'qumi'num were still allowed to fish inside the No-take Zone and if the No-take Zone was established with Hul'qumi'num Support

	Response %	
	No	Yes
A Agreement with no-take zones if Hul'qumi'num were still allowed to fish inside the no-take zone	12.80	87.20
B Agreement with no-take zones if established by the Hul'qumi'num	11.10	88.90

Disclaimer

This thesis represents my understandings of marine conservation from a First Nations perspective; achieved through knowledge gleaned over the six years I have worked with the Hul'qumi'num and through the interpretation of data collected as part of this research. It is not meant to represent or define, in a legal sense, the relationship between Hul'qumi'num or other First Nations and marine resources that they depend upon. It does not substitute for consultation on issues affecting First Nations rights and title.