

**British Columbia  
Seafood Sector and Tidal Water  
Recreational Fishing:  
A Strengths, Weaknesses, Opportunities,  
and Threats Assessment**

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**Final Report**

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# Summary

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This report summarizes the findings of a comprehensive study commissioned by the Province of British Columbia to assess the strengths, weaknesses, opportunities, and threats (so-called “SWOT analysis”) of the BC seafood and tidal recreational fishing sectors. The seafood sector comprises three subsectors: the capture (or wild) fishery, the aquaculture (or farmed) industry, and the processing and marketing of capture and aquaculture products.

## I. INTRODUCTION

British Columbia offers many advantages for seafood production and tidal recreational fishing. These include a relatively healthy wild fish and shellfish resource, large nearshore and foreshore areas with very good biophysical capability for seafood culture, and a comparatively pristine natural environment to attract anglers. At the same time, global seafood consumption is rising, spurred by higher incomes and health concerns, while outdoor recreation has emerged as one of North America’s fastest growing tourism activities.

Despite these advantages, BC’s seafood sector and tidal recreational fishery have witnessed fundamental and unprecedented change since the early 1990s. Shifting oceanographic conditions have led to lower productivity and fewer fish. The Canadian regulatory and policy regime has altered substantially with the move to stronger property rights in fisheries management, adoption of the precautionary approach, and introduction of the Aboriginal Fisheries Strategy (AFS) and the *Canadian Environmental Assessment Act (CEAA)*.

Other challenges, as well as opportunities, have resulted from globalization, the opening up of trade, greater capital mobility, and technological advances in transportation and other services. The seafood and recreational fishing sectors face various constraints – from a lack of industry cohesion in some subsectors to inflexible government regulation to inadequate attention to consumer needs – that hinder adaptation to the new global business conditions. There is both a compelling need and substantial potential for industry and government to re-orient these sectors to significantly enhance their long-term financial viability.

This study is designed to provide an information base on the seafood and recreational fishing industries to support provincial strategic planning. Its content will also be of interest to industry, the Government of Canada including the Department of Fisheries and Oceans (DFO), First Nations, and others.

A variety of important business issues are examined in the study including markets, government policies and regulations, the fisheries resource, labour and training, investment, environmental issues, and industry cooperation. Each sector is profiled and treated consistently in terms of its contribution to the provincial economy. The study can serve as the basis for cooperation among the sectors.

For the SWOT analysis, an extensive research program was conducted, including interviews with 180 individuals, reviews of more than 100 reports and publications, surveys on international seafood markets and Queen Charlotte Islands fishing lodges, numerous case studies, and analyses of economic and statistical information.

## II. INDUSTRY PROFILE

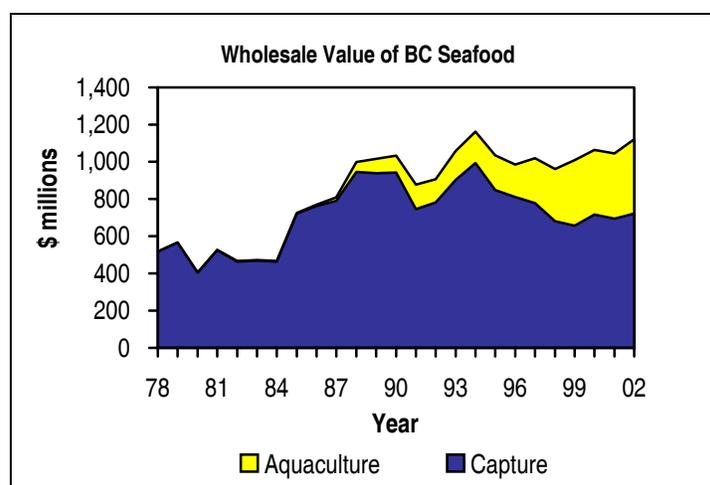
In 2002, the BC seafood and tidal recreational fishing sectors together directly generated \$1,865 million in sales, \$960 million in gross domestic product (GDP), \$575 million in wages, and 16,560 person-years (PYs) of employment from more than 30,000 full-time and seasonal jobs.

	BC Economic Activity 2002		
	Seafood	Tidal Angling	Total
Sales Value (\$ millions)	\$1,315	\$550	\$1,865
Wages & Benefits (\$ millions)	\$450	\$125	\$575
Gross Domestic Product (\$millions)	\$750	\$210	\$960
Employment (PYs)	12,970	3,590	16,560

## A. Seafood

The capture harvesting sector utilizes approximately 3,000 vessels to fish about 200,000 tonnes of fish from four main species groups: salmon (five species), herring and pelagics, groundfish (e.g., halibut, sablefish, rockfish, sole), and a variety of shellfish and invertebrates (e.g., crab, prawns, geoducks).

The aquaculture sector farms finfish (primarily salmon) and shellfish (mostly oysters and clams) on about 420 active sites, consisting of 80 finfish (on 121 licensed sites on 1,191 hectares) and 340 shellfish (on 455 licensed sites on 2,727 hectares) sites. The processing sector transforms the raw food material from fishermen and growers into a variety of processed products.

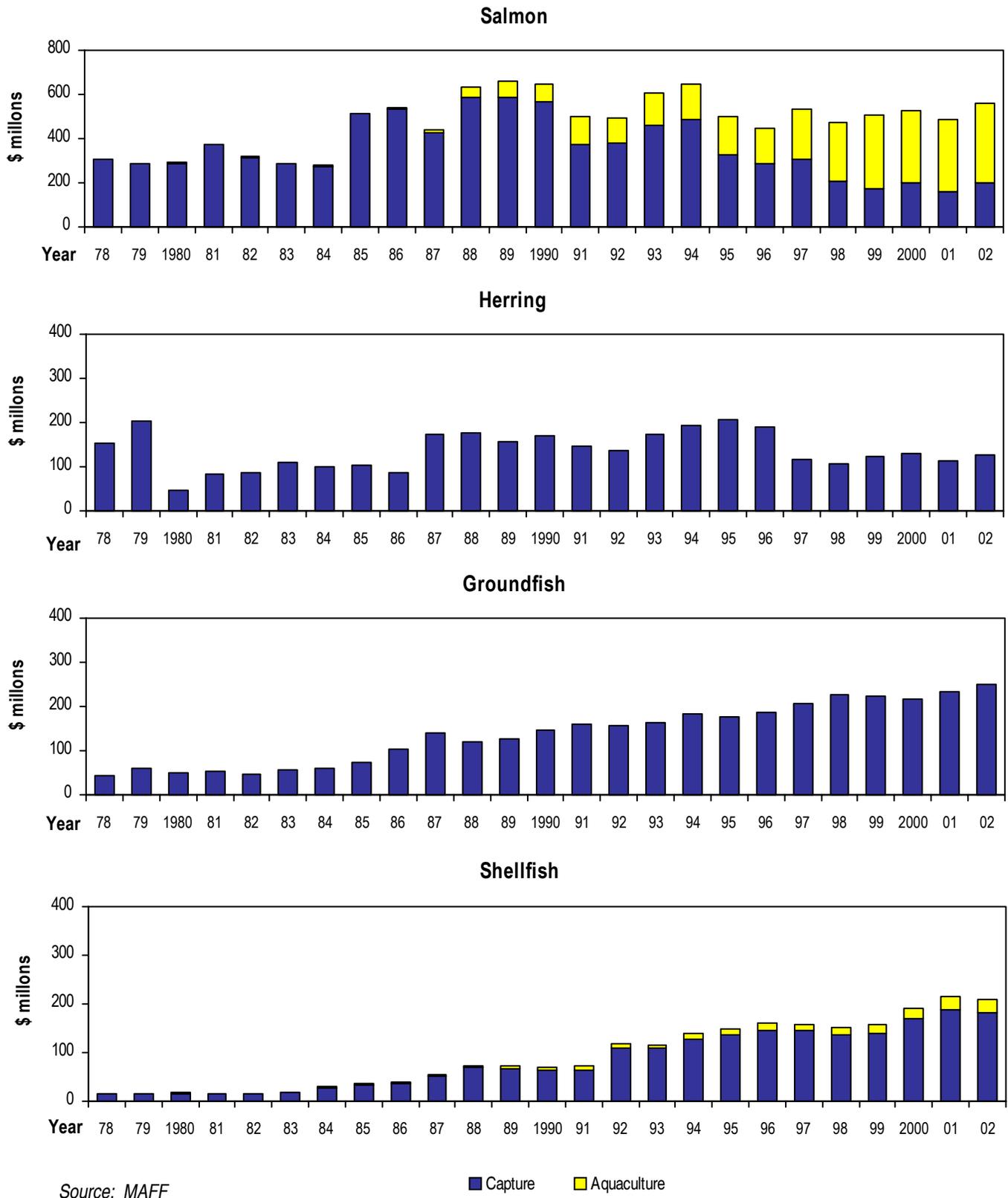


The seafood industry grew throughout the 1980s, achieving wholesale revenues of \$1 billion in 1989. However, growth has since levelled off, with an industry wholesale value of \$1,148 million in 2002. Adding retail and distribution margins results in an estimated total BC sales value of \$1,315 million. (Another \$125 million in distribution margin is generated in the rest of Canada.)

Different subsectors have shown different trends over the past 15 years (see Exhibit S-1), including:

- a substantial decline in landed values for wild salmon and herring, and an increase in landed values for wild groundfish and shellfish;
- a large increase in salmon farmgate value, but a more modest increase in shellfish farmgate value; and
- a transformation of the seafood industry with production shifting out of canned, frozen whole, and roe products (traditional salmon and herring products) and into fresh whole, live, and value-added fillet products in the aquaculture, groundfish, and shellfish sectors.

**Exhibit S-1: Wholesale Value of BC Seafood by Species Group**



Source: MAFF

■ Capture    ■ Aquaculture

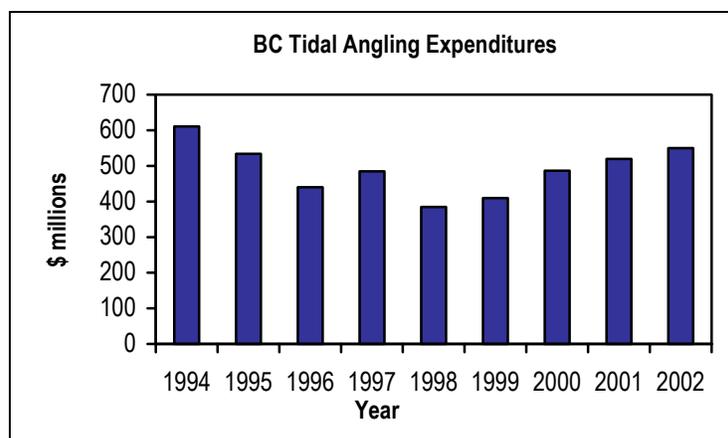
BC seafood is largely an export-oriented industry. Since 1990, there has been growth in sales to the United States, the principal market for farmed salmon, while sales to Japan and the United Kingdom, traditional markets for wild (capture) salmon, have declined. Today, the US market comprises more than 60% of total provincial exports.

Activity	BC Seafood Sector 2002		
	Capture	Aquaculture	Total
Harvest/Production (tonnes)	194,300	94,100	288,400
Number of Active Fishing Vessels	3,000	n/a	3,000
Number of Active Growout Sites	n/a	420	420
Number of Active Processing Plants*	167	66	182
<b>BC Sales Value (\$ millions)</b>			
Harvesting and Farm Level**	364	304	668
Processing Margin**	396	84	480
Retail and Distribution Margins	<u>110</u>	<u>57</u>	<u>167</u>
Total	<u>870</u>	<u>445</u>	<u>1,315</u>
* 51 plants process both capture and farmed products.			
** Harvesting/farm value plus processing margin equals wholesale value.			

The above figures exclude catch from three types of commercial aboriginal fisheries – Pilot Sales Agreements under the Aboriginal Fisheries Strategy, Excess to Salmon Spawning Requirements (ESSR) surpluses, and Nisga'a Treaty entitlements. The total catches in these fisheries averaged approximately 0.5 million sockeye (16% of the regular commercial catch) and 0.5 million other salmon (8% of the regular commercial catch) annually over the 2000-2002 period.

## B. Tidal Angling

Anglers may rely on a range of fishing lodges and charters to enhance their experience, or they may fish recreationally on their own. Salmon is the primary target species, mainly chinook, but other salmon species, halibut, rockfish, and other fish and shellfish are also important. Angling licence sales declined in the mid-1990s but have remained relatively stable at over 300,000 annually over the past five years. Angler expenditures peaked in 1994, fell throughout the 1990s, and then recently rebounded to \$550 million in 2002.



	<b>BC Tidal Angling 2002</b>
<b>Activity</b>	
Angling Licences*	333,800
Angler-Days	2,100,000
Number of Lodges	125
Number of Charters	500
<b>Angler Expenditures (\$ millions)</b>	
At Lodges	120
At Charters	30
Other	<u>400</u>
<b>Total</b>	<u>550</u>
<i>* includes 53,700 to children under 16 years</i>	

### C. Regional Employment

Total BC employment in the seafood and tidal recreational fishery sectors is estimated at 16,560 person-years (PYs) for 2002. This total is comprised of 12,970 PYs in the seafood sector (harvesting/growout plus processing and distribution) and 3,590 PYs in the recreational sector. The actual number of jobs is close to 30,000, since much of the capture harvesting and processing, as well as recreational fishing employment is seasonal. In contrast, most salmon aquaculture jobs, on farms and in processing plants, are year-round.

	<b>2002 Employment (PYs)</b>		
	<b>Seafood</b>	<b>Recreational</b>	<b>Total</b>
Harvesting/Growout	5,140	n/a	5,140
Processing	5,690	n/a	5,690
Retail and Distribution	<u>2,140</u>	<u>3,590</u>	<u>5,760</u>
	<u>12,970</u>	<u>3,590</u>	<u>16,560</u>

The seafood sector and recreational fishery provide 55% of their total job benefits in rural communities outside the major metropolitan areas of Greater Vancouver and Greater Victoria (Exhibit S-2). The aboriginal share of total employment is about 20% overall, amounting to over 6,000 jobs and 3,000 PYs of employment.

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**Exhibit S-2: 2002 BC Seafood & Tidal Recreational Fishing Employment (Person-Years)**


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Region	Seafood			Tidal Recreational	Total
	Capture	Aquaculture	Subtotal		
Queen Charlotte Islands	105	0	105	100	205
North Coast	1,000	0	1,000	220	1,220
Central Coast	115	60	175	65	240
North Vancouver Island	335	1,150	1,485	210	1,695
Mid Vancouver Island	855	1,330	2,185	615	2,800
South Vancouver Island	570	95	665	255	920
West Coast Vancouver Island	440	400	840	490	1,330
Victoria and Area	455	75	530	415	945
Sunshine Coast	265	165	430	110	540
Lower Mainland and Other	<u>4,705</u>	<u>850</u>	<u>5,555</u>	<u>1,110</u>	<u>6,665</u>
<b>Total</b>	<u>8,845</u>	<u>4,125</u>	<u>12,970</u>	<u>3,590</u>	<u>16,560</u>

Note: 1. Estimates are approximations.

2. Employment is the sum of harvesting/farming, processing, retail, and distribution.

3. PYs are person-years.

4. Region is place of residence and not necessarily the location where the activity occurs.

Source: GSGislason & Associates Ltd. estimates.

### III. THEMES

During the study interviews and investigations, several themes recurred with respect to the challenges and opportunities facing the BC seafood and tidal recreational fishing sectors. These themes are outlined below, along with some sample comments from the interviews and research. (The themes are not prioritized.)

#### A. General

**Theme #1: The world has changed and the BC seafood and recreational fishing sectors need to change with it. By adapting, industry can prosper; otherwise it will wither and fail to reach its potential.**

The late 1970s through the early 1990s were a good period for the BC seafood industry, characterized by: 1) favourable oceanographic conditions; 2) exclusive access to existing stocks within Canada's 200 nautical mile Exclusive Economic Zone, declared in 1977; 3) favourable exchange rate movements; 4) growing world economies, especially in Japan; and 5) strong global demand and prices for seafood. The BC recreational fishery was also able to expand to the next resource frontier: the West Coast of Vancouver Island, the Queen Charlotte Islands, and the North Coast.

These favourable conditions have since disappeared or reached maturity. The world aquaculture sector has grown dramatically over the past 20 years, greatly increasing the global supply of seafood and affecting world seafood markets. Successful businesses and industries are those that can adapt and reposition themselves in the face of changing circumstances. Both the seafood and recreational fishing sectors must do so in order to respond to new challenges and opportunities.

Sample comment: *Product differentiation is key; anybody in the commodity business is dead.*

**Theme #2: Leadership, accountability, and relationship and trust building are essential, within and between industry and government.**

The modern food industry requires coordination between the different levels of the value chain to meet the needs of final consumers. Harvesters/growers, processors, distributors, and retailers must cooperate to satisfy the availability, quality, and price parameters of individual market segments.

Given the importance of government regulation to industry fortunes, there is also a need for productive dialogue between industry and government. This would be much facilitated by an effective industry association speaking with one voice for each major sector, and by government departments viewing economic considerations as part of their mandate and service delivery.

Sample comment: *Risk and uncertainty are inherent parts of any business. We need people to make decisions and to take responsibility for their decisions.*

**Theme #3: Aboriginal issues, including land claims, create substantial uncertainty and business risk and stifle needed investment.**

Claims settlements would reduce uncertainty with respect to Crown land tenure for aquaculture and tourism businesses and with respect to licence policy, allocation, and security of resource access for both the capture and recreational fisheries. Settlements could also stimulate business opportunities for both aboriginal and non-aboriginal interests.

Sample comment: *To compete you need to invest. Existing industry is not investing in its future.*

**Theme #4: The whole is larger than the sum of its parts. Each sector has a legitimate claim to existence; sector bashing gives mixed messages.**

There is broad public support for the BC seafood and recreational fishing sectors, as evidenced by the substantial numbers of Canadians who eat BC seafood and/or fish recreationally in BC. However, in recent years, the public increasingly views fish and fishing as environmental issues or the subject of fractious controversy, instead of the foundation of a food business and of an outdoor recreation activity.

The controversies have resulted in several false assertions, dampened demand in some markets, and sent government mixed signals as to needed regulatory action (resulting in government inaction on several fronts). They have also wasted the attention of industry senior management and stalled industry strategic planning at a time when the competitive landscape is shifting rapidly.

Sample comment: *For your individual sector to be healthy, you need all sectors to be viable.*

**Theme #5: The environmental ethic is growing worldwide, with major implications for the capture fishery and aquaculture.**

This change is evidenced by the Marine Stewardship Council (MSC) certification process for sustainable seafood and the growing influence of environmental organizations on fisheries management decisions.

Environmental sustainability requirements affect both supply and demand. Without demonstrable sustainability, the BC capture and recreational fisheries and the aquaculture industry will not be allowed to operate, or will have their operation severely limited. Buyers, increasingly, are instituting sustainable sourcing policies for seafood, particularly in Europe. For seafood and recreational fishing sectors to be sustainable economically, they must be sustainable environmentally.

Sample comment: *Consumers are asking more questions as to where and how the fish are caught.*

**Theme #6: The federal Species at Risk Act (SARA) will have a major impact on particular fisheries.**

The protection of wild species under SARA may seriously impact capture fisheries through closures and other restrictions where endangered stocks are mixed with strong stocks. In particular, the Johnstone Strait and Juan de Fuca Strait sockeye fisheries may face severe restrictions to protect Cultus Lake sockeye and Sakinaw Lake sockeye.

Sample comment: *Industry should not underestimate how profound the fisheries management changes will be under SARA.*

**Theme #7: Government regulation of the BC seafood and recreational fishing sectors is considerable, as it should be. At the same time, regulation and policy actions should be efficient, timely and prudent so as not to inhibit business planning and operations.**

Government has an important regulatory role given industry use of the public marine environment and human health and safety issues. However, private sector businesses need to plan operations, raise capital and financing, develop markets and products, and invest in research and development and human resources. To a significant extent, the tardiness and perceived capriciousness of government decisions inhibits these essential business operations.

Sample comment: *Preservationist-thinking overtook DFO in the late 1990s. Industry can live with bad decisions, but it cannot live with no decisions.*

**Theme #8: Government must focus on what needs to be done rather than on who should do it. Although the federal government has paramount regulatory responsibility for fish harvesting and tidal angling, the Province can still play an important role.**

It is important first to identify which actions and policy initiatives are advisable and then to decide cooperatively who should lead the action or initiative. There is a need to coordinate and harmonize federal and provincial requirements and actions.

The Province can and should influence the federal government on a variety of business issues, including the need for management reform of the capture fishery to improve industry viability and to pursue market opportunities, and the requirement for much better marketing of both seafood and recreational fishing opportunities.

Sample comment: *We need to stop looking at fisheries and their problems from a jurisdictional perspective.*

## B. Seafood Sector

**Theme #9: BC seafood competes in the global food industry. The seafood sector faces much greater competition from globalization and the growth of aquaculture.**

BC seafood products must compete with seafood from other countries and with other protein sources, such as poultry, pork, and even soy. The seafood industry should emphasize the “food” component of “seafood”.

Advances in refrigeration and transportation technology mean that seafood processing no longer needs to occur in close proximity to the growing or harvesting location. Substantial consolidation in food distribution and retailing has put price pressures on food manufacturers and their suppliers. Formal tariffs have decreased on many food items with several international trade agreements. The result is greater competition.

Sample comment: *We need to impose the discipline of food manufacturing on the seafood sector.*

**Theme #10: Consumer tastes and preferences are changing. BC needs to adapt to the demands of the market and meet customer needs, rather than focussing on the resource. Industry must be market-driven instead of production-driven.**

Among consumer trends are greater attention to a healthy diet, which includes seafood and a desire for more convenience in food products (e.g., “meal-ready” products). More people are eating in food service restaurants.

Seafood today is a “buyers market”, not a “sellers market”. The key to success in most businesses is to understand customers’ needs, shape product offerings so that they match those needs, and aggressively market the products to potential customers. Most businesses succeed based on marketing prowess and not on production capability.

Sample comment: *Marketing is an aggressive blood sport. We need to get much better at it.*

**Theme #11: Competing in the global food business requires cooperation throughout the value chain to meet consumer needs.**

Customers expect and demand a consistent supply of good quality, nutritious food at a competitive price throughout the year. Meeting these needs requires communication, cooperation, and coordination of the different players in the value chain.

For example, at an arranged time a known number and weight of live poultry will be delivered to the poultry processing plant, where the birds are slaughtered, bled, processed, graded, and packaged into a variety of consumer products. These products then move through distribution channels to fill pre-specified retail and food service orders. This is the business model against which the seafood industry competes.

Sample comment: *In the food business, you need cooperation between production, processing, and marketing. You need single messaging from industry to government.*

**Theme #12: As a high-cost, low-volume producer, BC must press its advantage in quality. Quality means different things to producers and consumers.**

The province and Canada as a whole have relatively high wage rates, and more stringent environmental and health and safety standards than most of their international competitors. Consequently, their production costs are higher. In low-value, labour-intensive commodity markets, BC has difficulty competing.

BC's potential advantage in seafood – both capture and farmed – is the high quality of the food product when it leaves the cold, relatively pristine marine environment. The nearshore fishing fleet and the farmed finfish and shellfish sectors can provide high quality products to major markets in the US and Southeast Asia in a timely manner.

For many seafood producers, quality is synonymous with meeting regulatory standards on health and safety, such as Hazard Analysis and Critical Control Point (HACCP) standards, to ensure that the seafood is safe to eat. Customers, however, see safety as a minimum requirement, with true quality entailing a myriad of factors, such as shelf life, taste, appearance, and packaging. The seafood business needs to understand quality from its customers' perspectives and then deliver it. The global aquaculture seafood sector has raised quality expectations for the global capture seafood sector.

Sample comment: *We should be a high-end producer and not a commodity producer. Our cost structure is too high.*

**Theme #13: Traceability is becoming a business requirement.**

Without demonstrable traceability, BC seafood producers will not be able to access an expanding sphere of markets. Traceability is a growing market requirement. For the capture fishery, it is inexorably linked with selective fishing and catch monitoring from “sea to table”.

Traceability is difficult, if not impossible, to demonstrate without credible catch monitoring. While inevitably adding to costs, it also creates market and product development opportunities by slowing down the harvest and enhancing the identification of different quality products through the value chain.

Sample comment: *The pressure is on, especially in Europe, to be able to trace a product back to its source – not just the plant, but back to the individual vessel or farm.*

**Theme #14: Human resource issues are pending and require immediate attention.**

By and large, a training culture does not exist in the BC seafood industry. Most training, where it occurs, is on-the-job rather than institutional. The institutional training that does exist focuses on production techniques, rather than marketing and business skills. Some exceptions can be found, for example in the newer farmed salmon processing plants. Institutions in Eastern Canada, the European Union, New Zealand, and many other regions do a better job than BC institutions of training seafood industry workers.

The workforce on BC boats and in processing plants, especially wild fish plants, is aging. Today's vessel and plant operations require knowledge of more sophisticated equipment and electronics. Tomorrow's workers will need improved skills and knowledge to meet emerging sustainability and traceability challenges.

Sample comment: *Our workforce is old. For any job with a skill attached to it, we are in trouble in the wild business.*

**Theme #15: Wild salmon and its problems dominate discussions of the capture fisheries.**

The discussions and analysis during the course of this study suggest that the non-salmon capture fisheries of herring, groundfish, and shellfish are operating reasonably well. They are viable and generally market-driven; their fisheries organizations have strong and constructive relationships with DFO, processors, and others; and there is a degree of trust among individual fishermen, processors/buyers, and DFO.

The BC salmon fishery has none of these characteristics. The four barriers – a lack of viability, an inability to meet market needs, ineffective industry organizations, and insufficient cooperation and trust – are related; they are linked by the inadequacy of the current management regime for salmon. This competitive fishery system does not foster the appropriate incentives, enlightened self-interest, and cooperation needed to operate successfully in the global seafood industry.

Sample comment: *Peoples' perceptions of fisheries are coloured by salmon.*

**Theme #16: Both the capture and aquaculture sectors would benefit from cooperating with one another.**

The general food consumer is often unsophisticated and susceptible to mixed messages from attack advertising. Many consumers who hear attacks on farmed salmon, for example, will receive the message that it is bad to eat seafood and bad to eat salmon.

The capture and aquaculture sectors could work together to expand the overall market and attract new consumers for all seafood. The farmed finfish sector also has year-round distribution channels for fresh seafood – channels completely different than those for canned, roe, or frozen whole products – that potentially could also be used to market high-quality fresh capture seafood as niche specialty products.

Sample comment: *Distribution systems for fresh farmed salmon could serve as a model for distributing quality wild salmon.*

## C. Recreational Sector

**Theme #17: Recreational fishing in BC competes with angling opportunities elsewhere and with other forms of outdoor recreation in North America.**

Competitors of BC angling include other angling providers, such as Alaska, as well as non-angling alternatives, such as golfing, ecotourism, and other passive recreational pursuits. Our healthy fish stocks and enviable wilderness setting draws anglers from throughout North America and around the world.

Sample comment: *Our corporate lodge client could go to a golf resort next year.*

**Theme #18: The lack of attention and financial resources devoted by DFO to the recreational fishery is a major problem.**

The lack of profile and resources devoted to the recreational fishing section within DFO inhibits industry planning and recognition. For example, improved catch monitoring for the recreational fishery is needed in today's era of sustainable fisheries and selective fishing practices. However, it is currently hampered by DFO's low commitment to recreational fisheries.

Sample comment: *DFO is so understaffed and underfunded on the recreational fisheries front that it borders on tokenism.*

**Theme #19: The recreational sector has weak linkages to the broad tourism sector and tourism marketing programs.**

The outdoor recreationist has a multitude of activity options and may combine several activities on a particular trip. Stronger linkages of angler-businesses to broad-based tourism associations such as Tourism BC are warranted to facilitate marketing.

Sample comment: *The recreational fishery should forge closer links to Tourism BC.*

**Theme #20: It is unclear where the next generation of anglers will come from.**

The BC population is increasing but per capita participation in angling is decreasing. Urban populations represent a potential angler pool but the industry needs to promote awareness of and educate the public about angling opportunities.

Sample comment: *There is a huge potential to cultivate and recruit the urban angler, but lack of awareness of opportunities is a problem.*

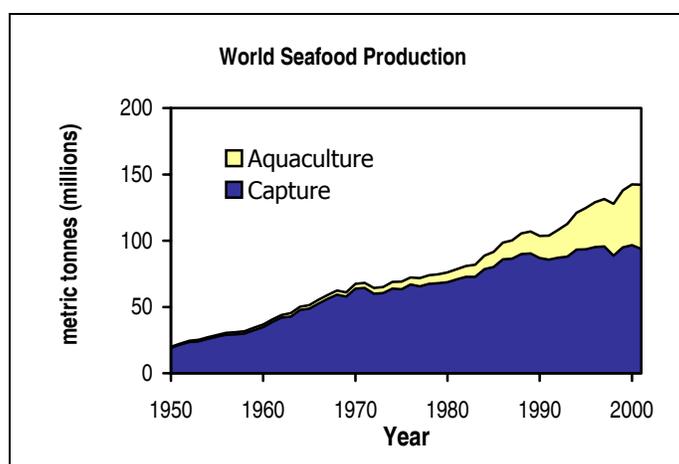
## IV. MAJOR BUSINESS ISSUES

A number of major business issues have emerged for BC seafood and tidal angling

### A. Market Trends and Requirements

#### Seafood

World seafood production grew from 100 million tonnes in 1987 to 142 million tonnes in 2001, consisting of 94 million tonnes from the capture fishery and 48 million tonnes from aquaculture. Global production is expected to rise by another 20 to 30 million tonnes by 2020. Essentially, all of the growth since the late 1980s and all projected future growth are attributable to aquaculture.



Seafood is now a global food business, with processing locations no longer necessarily tied to the location of harvest or growing. For example, technological advances and low wages in Southeast Asia (e.g., \$1 US per hour in China) make it cost-effective to ship frozen fish to Asia for further processing and then distribution around the world.

Significant consolidation at the food distribution and retail levels has occurred. Large discounters (e.g., Costco) and broadline distributors of a variety of proteins (e.g., SYSCO) have emerged, and the balance of power has shifted from food manufacturers to retailers. The result is now severe price and margin pressure on manufacturers.

There is much greater competition for “centre of the plate” protein among seafood, red meat, poultry, soy, and other products. In the food industry, producers, processors, and distributors cooperate to deliver “consumer value,” meaning products that deliver the availability, price, and quality attributes desired by consumers.

Consumer trends include the shift to a more healthy diet, convenience (“meal ready”) products, and increased concern about food safety, especially after the BSE (“mad cow” disease) incidents and terrorist attacks. Traceability – the tracking of food from harvesters or growers along the value chain to the final consumer – is increasingly becoming a requirement for market access. Potential European buyers are sending inspectors to BC fish processing plants to gauge procedures.

Seafood consumers generally prefer fresh to frozen seafood. Fresh fish distributors indicate a preference for fresh fish that is bled, with no belly cuts, layer-iced, and delivered no later than 72 hours after slaughter. Bleeding typically doubles shelf-life. While the aquaculture sector can meet these specifications, the wild fishery and processing sector have difficulty doing so. (Farmed salmon production techniques have been modelled after the poultry industry, including the delivery of live animals to the plant, bleeding and other practices.)

Niche markets also exist for live and whole seafood products of the highest quality. Examples include geoducks (Hong Kong) and live oysters and rockfish (specialty restaurants in the Pacific Northwest). The value derives not from cutting and/or processing the product, but rather from handling, refrigeration, packaging, and transport to preserve its pristine quality following harvesting.

Sustainability and eco-labelling are gaining importance as desirable market attributes, particularly with the Marine Stewardship Council (MSC) certification process. Unilever has indicated that by 2005 it will buy only fish from sustainable sources. Alaska salmon is MSC-certified, and BC salmon is currently in the review process. Both BC and Alaska halibut are also in the MSC review process.

The Japanese seafood market, traditionally the most discerning and highest quality, has been transformed with the weakness in Japan's economy, a shift in consumer tastes of younger people away from seafood towards red meat, and the influx of farmed salmon and other seafood. These changes, along with exchange rate movements, have reduced prices for BC salmon and herring roe exports to Japan.

Canadian seafood exporters benefited during the late 1990s from the weak Canadian dollar relative to the US currency. With the dollar's recent strengthening, this advantage has disappeared, since revenues are denominated mainly in US dollars.

### ***Tidal Angling***

A total of 2.1 million angler-days were fished in BC in 2002, comprising 1.65 million days of boat-based angling and 0.45 million days of shore-based angling. The vast majority of this activity was conducted by BC residents, who on average fish twice the days of non-residents. Alberta and Washington State are the source of most out-of-province anglers. The shares of anglers fishing from shore and anglers using lodge services have been rising.

Immigration, an aging population, and urbanization have all contributed to reduced angling by BC residents. BC fishing lodges and charters face competition for the outdoor recreationist tourist dollar from other saltwater angling (mainly Alaska), freshwater angling, and other outdoor recreation such as golf and ecotourism.

BC's advantages are relatively healthy fish populations, a pristine marine environment, and low costs. The strengthening Canadian dollar is a challenge to the lodge, charter, and other businesses that cater to US anglers. Increasingly, provincial operators are packaging angling products to diversify their client base.

## **B. Government Policies and Regulations**

### ***Seafood***

The main regulatory challenge in the wild harvesting sector is to reform the management of the salmon fishery. There is a strong need to abandon the competitive fishing format and to provide incentives to slow down the harvest so as to realize better quality and value from the fish. A major impediment to change is the lack of an effective salmon harvester association representing the majority of licence holders. Without such an organization, DFO does not know with whom to consult and negotiate.

There is substantial uncertainty of access in harvesting. Uncertain access or tenure is tied to treaty and Aboriginal Fishing Strategy issues, especially the controversial Pilot Sales Agreements under the Aboriginal Fishing Strategy (AFS). However, uncertainty of access relates not only to aboriginal matters.

The fact that fishing licences and/or quotas represent limited fishing privileges and not property rights *per se*, together with the unfettered discretionary authority of the federal Minister of Fisheries and Oceans, means that true certainty of access to the resource is not possible for harvesting. Industry maintains that the lack of certainty shortens the business planning horizon, prevents financing of operations, and diminishes business value.

The aquaculture industry is subject to more than 50 separate federal, provincial, and regional regulatory processes governing land use and development. A key concern is the federal CEAA screening and approval process for new and renewed farm sites. These reviews can take two years or more. The lack of timely approvals stymies industry growth, puts individual companies in dire financial straits, and eliminates employment opportunities for economically disadvantaged coastal communities.

The Codes of Practice for farmed salmon and shellfish operations, developed by industry and the provincial government, will raise standards and performances, comply with applicable laws and regulations, and ensure that farming practices meet objectives for environmental sustainability.

### ***Tidal Angling***

The 1999 DFO Salmon Allocation Policy gave the recreational sector priority access over the commercial sector to chinook and coho salmon, and the commercial sector primary access to sockeye, pink, and chum salmon. This policy has helped the recreational sector immensely. Not only has it provided more salmon, but also industry has been able to market the policy as a selling point to prospective clients. Recently, DFO announced a recreational sector 12% catch “ceiling” for the combined commercial-recreational harvest of halibut.

The regulatory uncertainty that presided over the industry in the late 1990s has abated to a large extent. In recent years, DFO has given early signals to the recreational fishing sector that catch limits and angling opportunities should remain stable.

## **C. Human Resources**

### ***Seafood***

The workforce of the capture seafood sector, on boats and in plants, is aging and characterized by generally low levels of education and formal training. It does not necessarily have the skills, or the ability to retrain, to meet the demands of today’s food industry. Moreover, wage rates in BC fish processing plants are higher than those in East Coast Canadian facilities.

The BC farmed salmon industry does recruit trained and skilled workers to work at the farm site. However, many of these employees come from East Coast institutions (e.g., the Marine Institute in St. John’s), since the breadth and duration of aquaculture training at BC institutions does not meet industry needs or standards. The provincial farmed shellfish workforce is mostly untrained. Productivity at shellfish farming sites could be increased substantially with greater worker diligence and knowledge.

Unlike the European seafood sector, BC industry does not have a strong training culture. As market demands shift to increased health and safety, traceable and sustainable production techniques, and new product development, the provincial seafood workforce will become a liability to international competitiveness.

### ***Tidal Angling***

Fishing lodges and charters form part of the tourism and hospitality sector. Typical of tourism industries, most lodge and charter businesses train their own workers on the job.

There do not appear to be any serious human resource recruitment or training issues for the recreational fishery. However, some northern operators report difficulty in instilling a service mentality in local hires, with the result that they frequently turn to workers from Vancouver or Victoria to staff field positions. Other operators have established joint ventures with local interests, often aboriginal, and have a substantial number of local hires in their workforce.

## D. Investment and Technology

### Seafood

The market value of investment in the BC seafood industry is approximately \$3 billion, including \$2.1 billion in the harvesting sector, of which 85% is in licences and quota. In 2002, the seafood processing, aquaculture, and salmon harvesting sectors did not meet EBITDA (or Earnings Before Interest, Taxes, Depreciation, and Amortization) revenue targets, while the herring, groundfish, and shellfish harvesting fleet segments did. It is clearly a priority to improve the financial performance of the industry as a whole.

BC Seafood Financial Measures 2002			
Sector	Asset Value (\$ billions)	Revenues (\$ billions)	EBITDA Target (%)
Harvesting	\$2.1	\$0.36	40%
Aquaculture	\$0.4	\$0.30	15-25%
Processing	\$0.4	\$1.15*	10%

*\* includes harvesting and aquaculture revenue but excludes retail/distribution margins*

Various research and development initiatives are underway for the aquaculture sector, including the development of new vaccines, closed containment systems, and new species development. Significant potential exists to transform seafood plant waste into fish silage, fishmeal, and nutraceuticals and pharmaceuticals.

Promising new seafood preservation technologies being used around the world include Modified Atmosphere Packaging (MAP), ozonated water, and the sedative aqua-s for live fish shipments. However, these technologies have not been approved by the Canadian Food Inspection Agency (CFIA) for use in Canada.

The overall investment climate is generally poor, largely due to poor financial performance, unfavourable currency fluctuations, uncertainty related to aboriginal issues, and regulatory hurdles and delays in aquaculture.

### Tidal Angling

The year 2002 was a good one for the BC tidal recreational fishing sector. In general, businesses such as lodges, charters, marinas, tackle manufacturers, and other suppliers had satisfactory financial performance. Nonetheless, the investment climate remains tenuous due to land claims uncertainty and the potential instability of regulations.

## E. Supply Chain Issues

### Seafood

Apart from the fish resource (see below), no serious supply chain issues face the wild fishery. With respect to aquaculture, BC has very good biophysical capability to grow both finfish and shellfish. Aquaculture production could potentially expand fivefold or more.

The BC farmed salmon industry has a competitive disadvantage relative to Chile and other world suppliers, given its high cost of smolt production. This reflects a reliance on land-based tank systems, due to difficulties in accessing lakes for more cost-effective rearing. The BC shellfish industry is also vulnerable because of its dependence on Washington State for the majority of its oyster and clam seed requirements.

There are currently no finfish feed supply issues. However, growing demands for forage fish, a key component of feed for global aquaculture, may drive up feed prices and spur conversion to more vegetable-based feeds. Two-thirds of the world's fishmeal is used in feed for poultry, pigs, and other animals. Terrestrial farmers have greater latitude in choosing feed composition for these animals, and would likely be the first to move to alternative sources.

## Tidal Angling

No supply chain issues apply to tidal angling. In fact, several tackle manufacturers on Vancouver Island have developed new products, exporting them throughout North America.

## F. Resources and the Environment

### Seafood

The majority of wild fish stocks are “healthy”. Some have a “mixed” status, including coho salmon, lingcod, and shelf/slope rockfish. Most species are fully exploited with the notable exception of salmon which has been managed very conservatively in recent years. Current salmon harvest rates of 20% to 40% are much lower than their historical range of 60% to 80%, and most stocks have rebuilt over the past five years or are at historic abundance levels.

Substantial progress has been made on sustainability and selective fishing practices in BC, through measures such as 100% Dockside Monitoring Programs (DMP) for Individual Quota (IQ) fisheries, observer programs, conservative fishing quotas, the re-siting of problem fish farms, codes of practice developed by the aquaculture sector, and effective co-management. Mandatory dockside monitoring is a condition of licence for all groundfish and herring fisheries. Challenges remain with respect to discards at sea, species that have no quota catch ceilings, and improved co-management.

The lack of Paralytic Shellfish Poison (PSP) testing facilities is a constraint to shellfish fisheries development on the North Coast. How an experimental new and emerging fishery can graduate to full commercial status is uncertain. Major impediments to implementing new and emerging fisheries are the cost of basic research, administrative complexity, and timely DFO decision-making. Other uncertainties surround the impact of changes in the ocean environment – El Nino, La Nina, and decadal scale cycle effects – and climate change on fish stocks and fisheries.

Sustainability encompasses both environmental and economic objectives. While BC has made progress towards sustainability of the capture fishery, challenges remain. Given the data deficiencies in most fisheries, the precautionary approach is an essential tool for sustainable fisheries management. It allows fishing to occur while more information on resource status is assembled.



There is considerable confusion in the minds of the public, environmentalists, and some fisheries managers as to the true meaning of the precautionary approach and the far more restrictive precautionary principle. Under the precautionary principle, the threat of serious or irreversible damage results in a ban on fishing, even though there may be considerable uncertainty due to incomplete knowledge.

The *Species at Risk Act* (SARA), which came into force in June 2003, could have major impacts on how fisheries are managed and conducted. A number of BC salmon stocks have been designated as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). If these stocks are listed under SARA, recovery plans for them could severely affect mixed stock salmon fisheries.

The Wild Salmon Policy currently under development could also significantly impact fisheries management in BC. One of its objectives is to avoid the listing of species under SARA by facilitating action in advance of a conservation crisis.

The farmed salmon industry faces a variety of environmental issues, some potentially valid and in need of further investigation (e.g., Infectious Hematopoietic Necrosis or IHN, sea lice), and others based on a lack of understanding or misinformation that requires correcting (e.g., animal waste, fishmeal use, pollutants in feed, carotenoid use, antibiotics, drugs). Research is underway on the outstanding issues.

All farmed fish and shellfish go through a federally (CFIA) registered plant. The Canadian Shellfish Sanitation Program (CSSP) and other measures provide greater traceability for aquaculture compared to the wild fishery. Nevertheless, a HACCP-based Farm Food Safety program is being planned for shellfish and finfish aquaculture to provide traceability back to the farm site equivalent to that for terrestrial agriculture.

### ***Tidal Angling***

The recreational fishery is affected by the same resource and environmental issues as the commercial fishery, including the application of the precautionary approach, climate change, the Wild Salmon Policy, and SARA.

## **G. Catch Monitoring**

### ***Seafood***

Catch monitoring is a cornerstone of sustainable fisheries in today's environmentally conscious world. All of BC's IQ fisheries and herring fisheries have strong dockside monitoring, where 100% of the harvest is validated at landing. Several IQ fisheries also have observer coverage or electronic monitoring to track bycatch and at-sea discards.

Non-IQ fisheries such as salmon, shrimp trawl, and prawn trap do not have dockside monitoring. Rather, a myriad of sales slips, logbooks, hail, and other measures are used. Some of these non-IQ fisheries including salmon have some level of observer coverage. (The crab fishery has electronic monitoring of catches.)

The catch monitoring systems for commercial salmon fisheries, especially the commercial aboriginal in-river components, require substantial improvement. That is, as with co-management in general, the catch monitoring programs for IQ fisheries are more advanced than for non-IQ fisheries.

### ***Tidal Angling***

DFO has no formal system for estimating recreational harvest and effort (angler-days) on a coast-wide basis. DFO Pacific Region does produce in-house estimates from a combination of creel surveys, logbooks, and observations by DFO staff. However, these estimates do not necessarily cover all areas of the coast, all months, and all types of angling (e.g., shore as well as boat-based angling); moreover, they vary widely in precision and accuracy.

## **H. Industry Liaison and Relationships**

### ***Seafood***

An important feature of the food industry is cooperation between different agents in the value chain to produce the desired food product for the consumer. Unfortunately, BC seafood has historically been characterized by fractiousness and mistrust within and between the harvesting and processing sectors. While the farmed finfish sector does cooperate substantially – in large part due to the vertical integration of most growout and processing

operations – farmed shellfish is also fragmented. Given the important regulatory role of government, BC seafood probably needs more cooperation than most food industries and a single voice to deal with high-level issues.

Some improvements are being made, particularly through harvester associations in IQ fisheries and the creation of the BC Seafood Alliance. With the oversight provided by environmental organizations and the need for value chain cooperation to remain competitive, all elements of the seafood sector must have strong, coherent industry associations.

Seafood industry segments also need to strike strategic alliances, horizontally and vertically. Again, some progress is occurring, for example, the Fisheries Council of Canada, Salmon of the Americas, and the world market perspective provided by multinational salmon farming companies.

The public image of the seafood industry has been affected by the often acrimonious relationships and conflicts that flare up in full public view, and the industry's inability to counteract negative environmental press while responding to legitimate environmental concerns.

### ***Tidal Angling***

The Sport Fish Advisory Board (SFAB) has provided strategic advice to the Minister of Fisheries and Oceans on a wide range of topics. The SFAB is effective because it represents all recreational interests and has the respect of governments.

## **V. SWOT RESULTS**

SWOT is a planning tool used to identify the major factors affecting competitiveness and viability before creating a business strategy. These include current influences (strengths and weaknesses) and potential future developments (opportunities and threats) to the business or sector. The intent is to provide the information base to support clear, focused strategy formulation.

Exhibits S-3 through S-6 provide SWOT matrices for each of the four sectors under consideration: harvesting, aquaculture, processing and marketing, and recreational. Given the diversity within each sector, not every SWOT element is relevant to every industry segment.

### **A. Key Fish Harvesting Opportunities**

#### ***Reform the Capture Salmon Fishery***

As the major problem facing the fish harvesting sector, the wild salmon fishery also offers the primary opportunity for reform. The logic for this reform is as follows:

- There is a strong need to get more value from the salmon harvest (and to gain access to the surplus salmon available in many areas of the coast).
- Getting more value requires the delivery of better-quality fish to the processing plant and market.
- Better quality can only be achieved by slowing down the harvest, improving onboard handling, and undertaking shorter fishing trips.
- Harvesters are unlikely to engage in the above activities without a change in DFO fisheries management to give more secure resource allocations through property rights, individual quota, or the like.
- DFO will only change the management structure if there is clear consensus from a majority of salmon licence holders.
- Since there is no effective organization to provide a single voice on the required change, it does not happen.

Consequently, the main priority for the sector is to create a formal salmon harvester association, representing all eight gear and area combinations, and having a duly elected board of directors. Such an organization could be the catalyst and agent of much-needed reform, and could facilitate improved co-management.

Some industry segments view DFO, rather than their own lack of cohesiveness, as the principal barrier to salmon management reform. Whatever the root of the problem, the current development of eight Salmon Area Councils with duly elected boards, and the subsequent launch of a Commercial Salmon Advisory Board, represents a major opportunity.

### ***Improve Security of Tenure***

Improved security of tenure for DFO fishing licences, now a limited fishing privilege issued annually, would help harvesters secure their investments and business value, extend the business planning horizon, and facilitate future investment and co-management initiatives. The unfettered discretionary authority vested in the Minister of Fisheries and Oceans, and entrenched in the *Fisheries Act*, is the issue. However, there are models for the Minister to retain statutory authority but delegate administrative responsibility on certain fisheries practices (e.g., the devolution of management responsibility for freshwater fisheries to the Western provinces).

### ***Improve Fish Quality***

Although the IQ management system has resulted in substantially better fish quality, there is a need for ongoing improvement as market quality standards escalate. In particular, shorter fishing trips and better on-board handling for IQ fisheries, including bleeding of finfish, are required. Implementing these techniques may require instruction and training.

### ***Enhance Fish Quality with Better Traceability***

Ultimately, the traceability of harvests back to the vessel and fishing location is likely to be a market requirement. The above changes to salmon management, if they occur, will also enhance traceability and sustainability, by slowing down the harvest and ensuring the necessary labelling of individual vessel production. Traceability requirements will enhance the tracking of different quality fish through the seafood value chain, and will provide the price incentives to meet high-end market needs.

### ***Market Sustainability***

Several features of BC's world-leading commercial catch monitoring systems, such as the 100% observer program for groundfish trawlers, could be marketed for export as providing both traceability (i.e., where, when, how, and by whom the fish was harvested) and sustainability (i.e., how it was harvested and what, if any, bycatch and discards resulted). Sustainability potentially confers a marketing advantage.

## **B. Key Aquaculture Opportunities**

### ***Ensure Timely Regulatory Processes***

The major opportunity for the aquaculture sector, both finfish and shellfish, is to have a more efficient and timely regulatory process, especially in the case of federal CEAA reviews. CEAA is a major constraint on aquaculture growth, investment, employment, and viability. The Province could contribute to an improved process through the bulk zoning of broad areas for aquaculture development, with each bulk area undergoing one CEAA process. This would create economies of scale in regulation, lower costs, and reduce timelines for approvals.

### ***Cultivate Whitefish Species***

The farming of "whitefish" species, such as halibut and sablefish, offers promise to fill the market gap left by greatly reduced catches of Atlantic cod worldwide. In addition, it can develop new markets in high quality food service (restaurant) businesses.

### ***Inform the Public***

Developing and disseminating accurate information on the environmental sustainability of finfish aquaculture is a challenge. The primary concern is the effect of sea cage farming on wild stocks and the marine environment. While admittedly there are some continuing questions, and more research is needed on sea lice and other topics, considerable confusion and misinformation also exists in the minds of consumers and the general public.

Adding to the widespread confusion is a lack of information on the industry's importance to the economy, and to coastal communities and First Nations. Such information would allow environmental concerns to be weighed along with the economic benefits. This information gap needs to be addressed in a coherent manner.

### ***Cooperate More in Shellfish***

The farmed shellfish sector has some particular problems related to its small size, fragmentation, and lack of marketing capability. There is realistic potential to significantly multiply production per hectare from existing sites, provided that technology transfer, greater professionalization and diligence, and cooperation among harvesters are fostered. It also appears prudent for the many small growers to work with processors to provide the consistent product volumes, quality, and prices demanded by the market. This requires cooperation within the sector.

## **C. Key Seafood Processing and Marketing Opportunities**

### ***Meet Consumer Needs***

The ability to serve high-quality, high-value seafood market niches requires proper orientation and cooperation by all the elements in the value chain, from fisheries managers and regulators to harvesters and growers to processors to distributors. Industry must produce the differentiated food products to consistently deliver the product attributes in the supply volumes that consumers want and value. This requires investigating consumer needs, as well as implementing quality and grading standards to instill customer confidence. The ongoing Agriculture and Agri-Food Canada Seafood Value Chain exercise can assist in these areas.

### ***Invest in Capital and Human Resources***

A new business model for the BC seafood industry also requires additional investment in plants, equipment, product development, and human resources. These much-needed investments are not being made in the current climate of poor financial returns and viability. In large part, the reason is government regulation and policy at the fish harvesting and farm level, and the considerable uncertainty facing seafood businesses tied to aboriginal land claims issues.

### ***Pursue Quality as the BC Advantage***

With production volumes too low and cost structures too high to compete successfully in commodity markets, BC seafood processors need to make quality their competitive advantage. Quality can be the province's advantage on three grounds:

- A clean, cold marine environment ensures the intrinsic quality of our capture and aquaculture raw material.
- The nearshore location of most harvesting and farming operations allows quality raw material, if handled well, to be maintained until reaching the processing plant door.
- BC's strategic geographic location promotes cost-effective access to very large seafood markets in the US (by truck) and Asia (by air).

The market for top quality seafood, especially live and fresh products, is more regional and narrow than the global market for commodity seafood products. That is, the market for quality seafood is less of a commodity business and therefore a market for which BC is better-positioned to compete.

### ***Attract New Workers***

With much of their workforce about to retire, there is an opportunity in traditional capture salmon, herring, and groundfish plants to attract workers who are younger and better educated and skilled. These prospective new workers can continue to learn and embrace the “lifelong learning” culture needed to compete successfully in today’s fast-changing food business. To realize this potential requires offering more than seasonal jobs.

### ***Extend the Salmon Season***

If, as suggested above, the salmon harvesting industry organizes itself and facilitates change in fisheries management and operating practices, then salmon processors would have somewhat longer operating seasons and much better quality raw material with which to work. They should also be able to achieve plant cost savings, develop new products, and better focus on the market. This is one example of the potential to improve quality and market returns for BC seafood.

### ***Develop the Domestic Market***

There appears to be an opportunity for increased BC seafood sales within Canada. Increased domestic sales would not only avoid exchange rate and other risks in the international marketplace, but would likely engender greater public support for the seafood industry in the province.

### ***Investigate New Technologies and Develop Opportunities***

Much of the potential in market development, quality improvements, and increased returns exists with fresh and live fish. For these products, the seafood industry should investigate new preservation technologies, such as Modified Atmosphere Packaging (MAP), ozone treatment or flushing, and the sedative aqua-s for live fish shipments. Many of these technologies are approved for use in the US and other countries, but are not accredited in Canada, so industry would need to work with CFIA. Federal and provincial governments should look beyond their traditional regulatory and scientific role, and work with industry on developing opportunities and capabilities to compete in the global food industry.

## **D. Key Tidal Recreational Fishery Opportunities**

### ***Increase DFO Resources***

DFO Pacific Region does not have a formal Recreational Fisheries Division. DFO personnel, including licensing and administrative personnel, devoted to the recreational fishery is estimated to represent at most 10 person-years. In contrast, the Alaska Division of Sport Fish has about 160 permanent full-time employees and an additional 240 seasonal and temporary positions. The predictable result is a lack of DFO attention and resources in the recreational fisheries arena.

### ***Improve Catch Monitoring***

One symptom of the lack of DFO resources is the less than adequate catch monitoring system for the BC tidal recreational fishery, especially for non-salmon species. Without credible catch monitoring, negotiating and adhering to formal allocation agreements or targets is extremely challenging. In the absence of improved monitoring, the recreational sector will remain vulnerable to the concerns of other resource users who are subject to more stringent catch monitoring programs. Improving the catch monitoring system is a major opportunity.

One way to fund the necessary improvements in catch monitoring is via increased licence fees (“user pay”), with the additional monies directed towards catch monitoring and resource management initiatives. However, under present federal Treasury Board policy, earmarking any licence fees is difficult.

### ***Cultivate New Anglers***

Another important issue facing the sector is the decline or arrested growth in angling participation. To reverse this trend and establish the next generation of resource advocates will require some combination of public education, cooperative marketing programs, and possibly infrastructure development (e.g., public ramps and access, enhancement-based fisheries). In BC, there is a large untapped urban population within a two-hour drive of excellent fishing opportunities. In addition, North America has a growing segment of avid outdoor recreationists and tourists, with substantial disposable income, that can be nurtured as clients for the wide variety of packaged fishing services offered by BC lodges and charters.

In both of these areas, improved catch monitoring and increased angler participation, BC can learn from experience elsewhere, such as Alaska's comprehensive catch reporting system and the "Water Works Wonders" marketing campaign in the lower 48 states.

### ***Enhance Selected Stocks***

Another opportunity is the enhancement of certain stocks (e.g., Georgia Strait coho), with a recreational fishery targeted at the enhanced stocks using selective fishing measures (e.g., mark-only fisheries). Increased access to abundant coho resources, particularly in Georgia Strait, would go a long way to slowing or reversing the decline in angling participation.

### ***Promote Angling as a Tourism Activity***

The Province could also stimulate the recreational fishery sector through greater integration of angling messages in broad-based tourism promotions by Tourism BC and others. Angling could be promoted as one part of a multi-faceted tourism experience. Furthermore, the 2010 Olympic and Paralympic Winter Games to be held in Vancouver offer a once-in-a-lifetime opportunity to market BC for a variety of outdoor pursuits, including angling.

More generally, greater attention could be devoted to the recreational fishery's economic contribution and potential for growth. The Province can play an important role in influencing DFO decisions and decision-making processes beyond its limited mandate in the tidal recreational fishing area.

## **VI. ABORIGINAL ISSUES AND OPPORTUNITIES**

### ***Address Land Claims and Other Uncertainty***

The majority of BC's land base is not subject to treaties and therefore may remain subject to aboriginal rights and/or title. Existing fisheries and aquaculture businesses cite the uncertainty surrounding land claims and AFS processes as a major barrier to long-term planning and investment.

Aboriginal people comprise a significant 20% share of the employment base of the seafood and recreational fisheries sectors in total. These participants suffer from the same uncertainty of rights and continued access/jobs as their non-aboriginal counterparts. On the other hand, land claims settlement should provide greater certainty to existing business as well as increased opportunity for new businesses, both aboriginal and non-aboriginal.

### ***New Aboriginal Business Development Opportunities***

Aboriginal people have a strong preference for economic development that conforms to and complements their cultural traditions and identity. Fisheries and aquaculture offer a unique business development opportunity for BC's coastal aboriginal people. In many cases, individuals can tap business and employment opportunities in their home communities, and avoid the need to move to urban centres. This is especially true for shellfish culture opportunities.

The settlement of land claims represents a significant business opportunity. Under settlement, aboriginal people could receive substantial financial support, resources (“fee simple” land, fish allocations, etc.), and other entitlements that could be used to launch seafood and tourism businesses. In addition, under current federal and provincial government policies, many new capture fisheries and aquaculture entities require significant aboriginal consultation, cooperation, and, in some cases, participation.

Nevertheless, significant hurdles exist, not the least being the harsh business realities of the global seafood industry, driven increasingly by economies of scale and trade in seafood raw material and finished products. Business acumen and marketing expertise are essential for this business climate.

Despite the challenges, aboriginal business opportunities do exist. In developing these opportunities, it appears prudent to start small and/or to arrange joint ventures with non-aboriginal interests to bring requisite expertise to the table. A strong business focus is also imperative, along with the creation of a separate business entity other than a Band Council or Band-controlled corporation.

## VII. FINAL COMMENT

There are many alternative uses to the ocean environment, including ecotourism, foreshore development, and oil and gas exploration. Without broad public support, the BC seafood and angling sectors could see their continued access to the marine environment diminished or threatened. Moreover, bad news and controversies in one sector can and have had negative spillover market effects. United, the fisheries and aquaculture sectors are stronger and more influential. All sectors should acknowledge one other’s legitimacy, realize the commonality of their interests, and work together.

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**Exhibit S-3: SWOT Analysis – BC Fish Harvesting**


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Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. Relatively <b>healthy fish populations</b> and natural environment</li> <li>2. <b>IQ fisheries</b> management for many fisheries</li> <li>3. <b>Sustainability and co-management success</b> of several fisheries, e.g., herring</li> <li>4. Several “<b>market-driven</b>” fisheries, e.g., geoduck, groundfish trawl</li> <li>5. <b>Near-shore fishery</b> fleet allows quality fish to be landed</li> <li>6. <b>Entrepreneurial spirit</b></li> <li>7. Several strong, <b>effective industry associations</b></li> <li>8. <b>Selective fishing</b> practices</li> <li>9. World-recognized <b>dockside/electronic monitoring</b> and observer programs</li> <li>10. Fisheries pay <b>resource access fee</b> (rent) to Crown</li> </ol>	<ol style="list-style-type: none"> <li>1. Creation of <b>effective salmon harvester industry association</b></li> <li>2. <b>Fisheries management changes</b> to meet market needs, e.g., consistent availability, quality, and price</li> <li>3. <b>Greater security of tenure</b> under fishing licences</li> <li>4. <b>Training</b> with respect to improved onboard handling procedures, bleeding fish, live hauling fish, etc.</li> <li>5. <b>Settlement of aboriginal land claims</b></li> <li>6. <b>Higher quality</b> and prices</li> <li>7. <b>Integrated groundfish fleet management</b></li> <li>8. <b>Strategic alliances</b> among harvester groups</li> <li>9. More <b>direct sales</b> to public, more self processing and direct sales in niche markets</li> <li>10. <b>Regular reporting</b> of economic dimensions and importance of industry</li> </ol>
Weaknesses	Threats
<ol style="list-style-type: none"> <li>1. <b>Lack of effective salmon harvester association</b> /salmon fishery is not "market-driven"</li> <li>2. <b>Reluctance</b> of industry and government to <b>change</b> with the times and cooperate</li> <li>3. <b>High labour and other costs</b>, lack of economies of scale due to low production levels, fleet overcapacity</li> <li>4. <b>Poor markets</b> for some species, e.g., pink and chum salmon</li> <li>5. <b>Inability to attract crew labour</b> due to inadequate financial rewards in some fisheries</li> <li>6. <b>Fish “left in the water”</b> because of low prices or a lack of buyer in some cases</li> <li>7. <b>Long trip lengths</b> in some fisheries reduce quality, e.g., halibut</li> <li>8. <b>Lack of traceability</b> back to the vessel and areas where fish are caught</li> <li>9. <b>Fish utilization/discards/bycatch issues</b> in some fisheries</li> <li>10. <b>Poor economic data</b> on the industry</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Potential resource declines</b> due to oceanographic and climate changes, pollution, and urban encroachment</li> <li>2. <b>Aboriginal land claims process</b> and associated uncertainty</li> <li>3. Adoption of the <b>precautionary principle</b> rather than the precautionary approach to resource management</li> <li>4. Continued <b>lack of economic perspective</b> in resource management decisions</li> <li>5. <b>Reduced DFO funding</b> of science</li> <li>6. <b>SARA-imposed restrictions</b> on fishing opportunities</li> <li>7. <b>Environmental opposition</b> to commercial fishing in BC</li> <li>8. Public perception of <b>food safety issues</b></li> <li>9. <b>Strengthening Canadian dollar</b></li> <li>10. <b>Lack of public</b> and community <b>support</b> for the commercial fishery</li> </ol>

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**Exhibit S-4: SWOT Analysis – BC Aquaculture to Farm Gate**


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Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. <b>Good biophysical growing conditions</b> for both finfish and shellfish (room for expansion)</li> <li>2. Relatively <b>clean water and environment</b> relative to Lower 48 competitors</li> <li>3. <b>Proximity to US market</b></li> <li>4. Consolidation of salmon operations, strong presence by large <b>multinationals selling food around the world</b></li> <li>5. <b>Codes of practice</b> developed by and with the cooperation of industry</li> <li>6. <b>Good traceability</b> (all products flow through federally-registered plants)</li> <li>7. <b>Good backward linkages</b> and forward linkages for most industry supplies and services</li> <li>8. <b>“Naturalness” of bivalve shellfish/health benefits</b> of seafood in general</li> <li>9. <b>Strong market demand for clams</b></li> <li>10. <b>Good quality reputation</b> of BC cultured finfish and shellfish</li> </ol>	<ol style="list-style-type: none"> <li>1. More efficient and <b>timely CEAA review process</b> (new tenures and renewals)</li> <li>2. <b>Bulk zoning</b> of broad areas for aquaculture development</li> <li>3. <b>Access to more lakes for smolt rearing</b></li> <li>4. Farming of <b>new “whitefish” species</b> – halibut, sablefish, cod</li> <li>5. <b>Improved productivity/consolidation</b> from shellfish tenures</li> <li>6. <b>Technology transfer</b> in farming shellfish and farming new finfish species</li> <li>7. More <b>coordination of marketing</b> and deliveries by shellfish producers</li> <li>8. <b>New preservation technology</b> to extend shelf-life – MAP, ozone</li> <li>9. Increased sales to the <b>domestic Canadian market</b></li> <li>10. <b>Increased capacity</b> for environmental research and monitoring in rural BC</li> </ol>
Weaknesses	Threats
<ol style="list-style-type: none"> <li>1. <b>Regulatory delays in CEAA approval process</b></li> <li>2. <b>Lack of federal-provincial harmonization</b> of the tenure approval process</li> <li>3. BC is a <b>high-cost producer</b> – high wages, smolt and regulatory costs, lack of economies of scale</li> <li>4. <b>Lack of DFO support</b> to develop new species for aquaculture</li> <li>5. <b>Limited technology transfer</b> in the shellfish sector</li> <li>6. <b>Dependence on Canada’s East Coast for farm site labour</b> in salmon</li> <li>7. <b>Dependence on Washington State for seed</b> in shellfish</li> <li>8. <b>Lack of water quality monitoring in Central and North Coast</b></li> <li>9. <b>Environmental opposition</b>, poor public image, mixed public support</li> <li>10. <b>Poor profile and economic data</b> on industry</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Real environmental</b>, disease and product quality <b>issues</b> e.g., IHN, Kudoa</li> <li>2. <b>Perceived environmental</b>, disease, and product quality <b>issues</b> (attacks by some environmentalists, wild producers, media)</li> <li>3. <b>Strengthening Canadian dollar</b></li> <li>4. <b>Increasing world supply</b> of low-cost farmed finfish</li> <li>5. <b>Feed cost increases</b> for farmed finfish</li> <li>6. <b>Water quality and disease outbreaks</b></li> <li>7. Aboriginal <b>land claims process</b> and associated uncertainty</li> <li>8. Lack of <b>access to wild broodstock</b> to culture new species</li> <li>9. <b>Lack of technical knowledge</b> prevents BC from culturing new species</li> <li>10. <b>Loss of public</b> and community <b>support</b> for aquaculture</li> </ol>

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**Exhibit S-5: SWOT Analysis – BC Seafood Processing**


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Strengths	Opportunities
1. Consumer <b>trend to healthy diet/seafood</b> consumption is growing worldwide	11. Improved quality raw material if <b>salmon management changes</b>
2. <b>Proximity to US and Asian markets</b>	12. <b>Improving quality, slower more consistent plant volumes</b> can spur product development, cost savings
3. High quality and <b>reputation of Canadian fish inspection</b> system	13. Produce high <b>value-added processed niche products</b>
4. <b>IQ fisheries management</b> system produces quality raw material in most cases	14. Increased focus on and sales to <b>domestic Canadian market</b>
5. <b>BC farmed salmon sites</b> produce <b>quality</b> raw material and deliveries are scheduled to meet market demand	15. Achieving <b>MSC certification</b>
6. Skills and <b>efficiency of farmed fish processing plants</b>	16. <b>New preservation technologies</b> to extend shelf-life – MAP, ozone
7. <b>Vertical integration of farmed salmon</b> growout, processing, and marketing operations	17. Focus on quality and <b>high-end fresh/live market</b> to the extent possible
8. <b>Vertical integration of wild salmon, herring, and groundfish operations</b>	18. <b>Greater traceability</b> including tag programs, third party monitoring
9. Selected <b>high-quality niche products</b> , e.g., herring roe, geoducks	19. <b>Reskilling of workforce</b> in quality, traceability, marketing
10. Top tier <b>Seafood Alliance industry association</b>	20. <b>Value Chain Round Table</b> for seafood
Weaknesses	Threats
1. <b>Inconsistent timing, quality, and price</b> of some BC raw material, especially salmon	21. Aboriginal <b>land claims process</b> and associated uncertainty
2. BC is a <b>high cost producer</b> – wages, environmental regulations, and inspection	11. Imminent <b>collapse of the capture salmon processing industry</b>
3. <b>Lack of MSC certification</b> that is important to several European markets	12. <b>Stronger Canadian dollar</b>
4. Increasing <b>market power to large distributors, discounters, and retailers</b>	13. <b>Weak world economies</b>
5. <b>Aging and low skills</b> of much of the <b>wild fish plant workforce</b>	14. Increasing <b>non-tariff trade barriers</b>
6. <b>High cost</b> of Canadian environmental and fish inspection standards	15. <b>Environmental opposition</b> to industry – wild and farmed
7. <b>Small size</b> of seafood processors/marketers on the world stage	16. <b>Failure to reskill</b> the workforce
8. <b>Farmed salmon</b> is becoming a <b>commodity</b>	17. <b>Failure to improve traceability and sustainability</b>
9. <b>Lack of cooperation</b> between wild and farmed seafood sectors	18. <b>Large wild salmon volume from Alaska</b> /large farmed salmon volumes from <b>Norway and Chile</b>
10. <b>Fragility of the capture salmon processing sector</b>	19. <b>Lack of community and public support</b> for the seafood industry

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**Exhibit S-6: SWOT Analysis – BC Tidal Recreational Fishing**


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Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. Relatively <b>healthy fish populations</b>/one of few areas in world with access to wild salmon</li> <li>2. Relatively <b>pristine, uncrowded</b> marine and terrestrial environment/habitat</li> <li>3. <b>Variety of experiences</b> from world class destination lodges to shore-based angling close to urban centres</li> <li>4. Proximity to US and <b>cost-effective travel to BC</b> by air and vehicle</li> <li>5. DFO policy of <b>priority access</b> to anglers for <b>chinook and coho</b> salmon</li> <li>6. <b>Reasonable</b> daily and bag <b>possession limits</b></li> <li>7. <b>Good access</b> – extensive coastline including an accessible shoreline and network of harbours/marinas</li> <li>8. <b>Strong community ties</b> by anglers through volunteerism, local involvement, and the SFAB process</li> <li>9. <b>Growth in shore-based angling</b>, flyfishing, and angling by women and families</li> <li>10. Image of <b>Canada</b> as a <b>safe country to visit</b></li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Improved DFO commitment</b>, staffing, and resources in recreational fisheries management</li> <li>2. <b>Improved catch monitoring</b></li> <li>3. Licence fee increases to provide <b>additional money</b> targeted at <b>catch monitoring</b> and resource management</li> <li>4. <b>Enhance stocks</b> (e.g., Georgia Strait coho) and apply selected fishing (e.g., mark-only harvests)</li> <li>5. <b>Public education</b>, marketing, and infrastructure</li> <li>6. <b>Closer links</b> between recreational <b>fishing</b> and broader <b>Tourism BC</b> marketing programs</li> <li>7. Use <b>2010 Olympics</b> as a world stage to promote a variety of BC destination activities, including angling</li> <li>8. Compulsory <b>logbook program</b> for <b>guides and lodges</b> to promote sustainability and resource management</li> <li>9. <b>Strategic alliances</b> – potential joint ventures with aboriginal groups, packages with non-fishing businesses</li> <li>10. <b>Regular reporting</b> of economic dimensions and importance of the industry</li> </ol>
Weaknesses	Threats
<ol style="list-style-type: none"> <li>22. <b>Lack of DFO attention</b>/leadership, personnel, and financial resources devoted to the recreational fishery</li> <li>23. <b>Inadequate catch monitoring</b></li> <li>3. <b>Uncertainty</b> tied to <b>aboriginal land claims</b></li> <li>4. <b>Declining resident participation</b>; take-up by new Canadians and urban residents is low</li> <li>5. <b>Lack of knowledge</b>/education as to <b>angling opportunities</b></li> <li>6. <b>Lack of “single window” provincial ministry</b> to champion and serve the sector and liaise with DFO</li> <li>7. <b>Poor government and industry communications</b> with media/no focal point or organization for media contact</li> <li>8. <b>Lack of DFO stock assessment</b> work on lingcod, rockfish, and other species</li> <li>9. <b>Lack of integration</b> between <b>recreational fishing</b> and broader Tourism BC marketing programs</li> <li>10. <b>Poor market and economic data</b> on angling and importance of angling to tourism mix</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Potential resource declines</b> due to oceanographic and climate changes, pollution, and urban encroachment</li> <li>2. A <b>preservationist</b> rather than conservationist (or sustainability) <b>approach to</b> resource management</li> <li>3. <b>Strengthening Canadian dollar</b> makes Alaska more price competitive</li> <li>4. <b>Attacks on sustainability grounds</b> due to inadequate catch monitoring</li> <li>5. Restricted angling opportunities to protect any <b>SARA-listed species</b></li> <li>6. <b>Potential mid-season regulatory changes</b> including closures</li> <li>7. <b>Aboriginal land claims process</b> and associated uncertainty</li> <li>8. Potential <b>shutdown of salmon hatcheries</b> due to DFO funding cutbacks</li> <li>9. <b>Failure to cultivate</b> next generation of anglers</li> <li>10. <b>Loss of public</b> and community <b>support</b> for angling</li> </ol>

