# British Columbia's Fisheries and Aquaculture Sector, 2012 Edition

PREPARED FOR THE DEPARTMENT OF FISHERIES AND OCEANS CANADA BY BC STATS



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Publish date: 01-29-2013:

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## 1. Highlights

## 1.1. Fisheries and Aquaculture Sector

- British Columbia's fisheries and aquaculture sector contributed \$667.4 million<sup>1</sup> (0.4%) to the province's GDP in 2011.
- The fisheries and aquaculture sector employed an estimated 13,900 British Columbians in 2011, most (8,400) of whom worked in establishments associated with the sport fishing industry.
- Wages and salaries paid to workers in 2011 in the fisheries and aquaculture sector are estimated at \$388.3 million.
- Revenue was estimated at \$2.2 billion in 2011, down slightly (-1.6%) from the previous year.

## 1.2. Capture Fishery

- British Columbia's capture fishery gross domestic product (GDP) increased 7.4% to \$102.3 million in 2011, propelled by heightened output in prawn & shellfish, and herring.
- Average annual employment in the capture fishery reached its lowest level in two
  decades in 2011 (at 1,400), continuing a downward trend that has been observable
  for over twenty years. Capture fisheries averaged 2,800 employees annually from
  2000 to 2011.
- Wages and salaries in the capture fishery dropped 4.5% in 2011, to \$8.4 million.
   However, most income earned in this sector is earned by self-employed harvesters in
   the form of unincorporated business income. In 2011 this was roughly \$70 million,
   virtually unchanged from 2010.
- Revenue rose 4.1% in 2011, to an estimated \$344.8 million, in spite of decreases in salmon (-34.6%), and herring (-67.8%) revenues. However, prawn & shrimp revenues mitigated much of the downward pressure, expanding 66.0%, as halibut revenues increased 21.6%.

<sup>&</sup>lt;sup>1</sup> GDP figures are reported in 2002 real dollars.

## 1.3. Aquaculture

- Gross domestic product in the aquaculture industry fell 7.2% to \$61.9 million in 2011, driven by a decline to \$8.5 million in the salmon farming industry (-7.3%), as well as the shellfish industry, which contracted 12.9% to \$9.0 million.
- Employment in aquaculture was estimated at 1,700 in 2011, unchanged from 2010 (+0.3%); the industry has remained fairly constant throughout the period, with the exception of a peak in the years 2005 (2,100) and 2006 (2,000).
- Wages and salaries in the industry fell slightly (-4.7%) in 2011, to \$55.7 million, though overall, they have expanded considerably since 2000, increasing 39.3%, with the majority of the growth taking place 2006 onward.
- Revenues fell 12.2% in 2011<sup>2</sup> to \$469.0 million, following strong gains (+26.8%) in 2010. Growth in revenues throughout the period has been driven by steady expansion in the salmon harvest, and modest growth across shellfish species.

## 1.4. Fish and Seafood Processing

- Gross domestic product in the fish and seafood processing industry inched ahead 1.2% in 2011, to \$177.5<sup>3</sup> million. The increase follows a 9.4% recovery in 2010, after three consecutive years of decline.
- Fish and seafood processing employment in 2011 was estimated at 2,400, down 11.1% from 2010.
- Wages and salaries climbed 3.6%, to \$105.3 million in 2011.
- Fish and seafood processing revenues totalled \$427.5 million in 2011, an increase of 2.1%. Revenues have been in recovery since tumbling 29.8% in 2007.

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<sup>&</sup>lt;sup>2</sup> Aquaculture revenues and wages in 2011 were estimated by BC Stats based on indicators available as of August 6, 2012.

<sup>&</sup>lt;sup>3</sup> Estimates of GDP and revenue for the fish and seafood processing industry have been deemed confidential by Statistics Canada, starting in 2008. The estimates presented in this report for the period from 2008 on were derived by BC Stats using information from various published sources.

## 1.5. Sport Fishing Highlights

- Sport fishing contributed \$325.7 million to the province's GDP in 2011, a slight decrease (-0.2%) from the previous year.
- Approximately 8,400 people were employed by the sport fishing industry in 2011, up from 8,000 in 2010.
- Wages and salaries earned by employees in the sport fishing industry fell 1.4% in 2011.
- Sport fishing revenues were estimated at \$936.5 million in 2011, up 0.8% over the 2010 value.

## 1.6. International Trade Highlights

- Exports of fish and seafood (-4.8%) products fell slightly in 2011, to \$911.3 million. Of the total, fresh/chilled finfish accounted for 48% of exports, frozen, smoked or canned finfish products for 30%, and shellfish and other seafood products for 21%. In 2011, 57% of international exports were destined for the United States, 12% for Japan, 4% went to the European Union, and 27% to other destinations. Emerging and growing export markets include China, Russia, and South Korea.
- Fish and seafood imports rose 8.6% in 2011, to \$560.2 million. Imports from the US were valued at \$215.4 million (38% of total imports). The European Union at \$16.2 million (3%), Japan at \$3.9 million (1%), and other countries \$324.8 million (58%) were also important sources of imported fish and seafood products.
- As a result of a decline in total the value of exports, and a rise in the value of imports, BC's trade surplus in fish and seafood products narrowed further in 2011.
   The trade surplus has been tapering off since the mid-2000s, as the value of imports has grown at a faster rate than the value of exports.

### 2. Introduction

This is the fifth edition of a report on the fisheries and aquaculture sector. The report is commissioned from BC Stats by Fisheries and Oceans Canada. Previous editions were commissioned by the British Columbia Ministry of Agriculture. The report presents estimates of gross domestic product (GDP), revenue, employment and earnings in the province's fisheries and aquaculture sector for the period from 1990 to 2011.

The report also includes information on international trade in fish and seafood products, as well as counts of the number of locations of fishing-related establishments in the province. Also included are multipliers which show the extent to which activities in the fisheries and aquaculture sector affect, and are affected by, other industries.

As an economic impact analysis, this document measures the impact on the BC economy of the fisheries and aquaculture sector, which includes the following activities:

- Capture fishery
- Aquaculture (finfish and shellfish farming)
- Fish and Seafood Processing
- Sport fishing

The report estimates the economic impacts of the component industries consistently, using standard concepts and data similar to those used to assess other sectors of the economy such as forestry, agriculture and construction. This makes it possible to assess the overall size and economic impact of the fisheries and aquaculture sector relative to other industries, and to identify emerging trends in the sector. The ability to measure the performance of the sector compared to the rest of the economy provides a basis for a better understanding of the current structure and long-term prospects of British Columbia's fisheries and aquaculture sector.

## 2.1. What's new in this report?

This edition of the report updates the previously published information, and extends the data to the 2011 calendar year. It should be noted that data for 2011 are preliminary estimates, based on information available as of November, 2012.

Revisions to underlying data series used to calculate the estimates have been incorporated, and as a result some of the historical data has been changed. Because of this, the numbers reflected in this report should not be compared to estimates in previous reports. In particular, the estimates for the sport fishery reflect changes that have been made to the tourism sector indicators used to derive of the sport fishing data. They also use the latest information from the 2005 and 2010 surveys of recreational angling.

Also, the GDP data for the capture fishery has been disaggregated to include some new species, as well as estimates for the salmon seine and gillnet/troll fisheries.

New to this edition is the inclusion of a brief section which looks at consumption and markets for seafood products. Where available, some regional indicators have also been included in the report.

## 2.2. How to use this report

This report presents data on the economic impact of the fisheries and aquaculture sector. As such, it can be characterized as an economic impact analysis (as opposed to a socioeconomic impact analysis which also looks at other impacts such as social well-being which are associated with economic activities). Economic impact assessments can be used to:

"(...) track monetary payments as they move through a regional economy--measuring the transfer of money from one sector to another. It estimates changes in gross output, income, and/or employment (...)"<sup>4</sup>

Knowledge of changes in these variables can provide useful insights and allow for the tracking of trends and comparisons between industries. They are useful for measuring how changes in outputs from any one sector of the economy can impact specific economic variables. This report translates output changes in the capture fishery, fish and seafood processing, aquaculture and sport fishing to provincial impacts in gross domestic product (GDP), income, and employment. GDP is used as a measure of an industry's size and changes in GDP measure economic growth.

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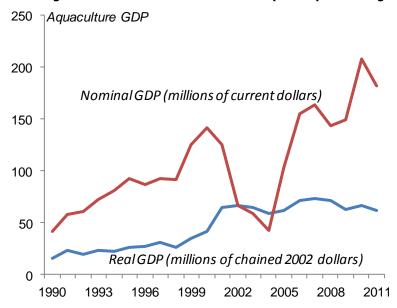
<sup>&</sup>lt;sup>4</sup> D.S. Holland, J.N. Sanchirico, R.J. Johnston, D. Joglekar. 2010. Economic Analysis for Ecosystem-Based Management: Application to Marine and Coastal Environments. Washington, DC, Resource for the Future, p.36

Readers should be mindful that real dollar (chained) GDP figures are used throughout the report, versus nominal GDP figures. Real dollar GDP figures allow for comparison of production levels by removing the impact of inflation in the value of both inputs and outputs of production. Input prices, such as fuel for fishing vessels in the capture fishery, and feed in the aquaculture industry, are adjusted using price deflators to hold prices constant in 2002 dollars. Likewise, the value of outputs of production is subject to fluctuation due to prices, either as a result of changes in the level of activity, or a change in the value of the product itself. Price deflators remove the effects of inflation, providing GDP figures in real 2002 dollars.

Nominal GDP allows for variation in both price and quantity, which makes it useful for determining the overall value added to the economy, in current dollars. However, because it allows for price fluctuation, it is not an acceptable measure of year-to-year growth, nor appropriate for comparing growth between industries. When a nominal GDP figure is presented, it is not possible to tell whether the change in value is driven by price, quantity, or both.

If one wishes to further examine the economic impact of individual data points in recent years, it is advisable to refer to the nominal GDP table included in this report.

#### Contrasting real and nominal GDP shows the impact of price changes over time



Data Source: Statistics Canada

The results presented here come from a model developed by BC Stats over many years which takes into account a large number of data sources. When interpreting estimated

changes in the economic effect of the fishery and aquaculture sector, it is important to refer to additional sources of information on the context of each fishery and how it is managed and undertaken. Natural resources are affected by ecosystems, and natural processes and cycles, not just the market's supply and demand, and must be interpreted with this in mind. For example, in the context of fisheries, a decrease in GDP in one industry could be the result of development into a more sustainable industry, or be the result of efforts to protect or increase resource rents.

Changes in GDP, however, do not measure changes in social well-being, because economic effects may not necessarily translate into large net benefits to society.<sup>4</sup> GDP changes also do not reflect changes in the environmental sustainability of an industry which may increase long-run economic value. As such, increases or decreases alone in GDP are not necessarily good or bad. In order to measure changes in net social well-being it would be necessary to determine if agents in the economy are better off as a result of a particular economic activity. This is done by assessing market and non-market values for both consumers and producers, through a cost benefit analysis, which allows changes in economic benefits to producers and consumers to be tallied over time and compared.

As a technical report, changes, trends and variations within the industries' regional, domestic or economic context are not the focus of discussion. For example, the significant variation in Chilean output and price responses for farmed salmon worldwide affected BC aquaculture GDP in recent years, but due to its contextual nature, will not be discussed in this report.

In addition to measuring the direct economic impact (GDP, revenues, wages and employment) associated with the fisheries and aquaculture sector, this report also includes economic impact multipliers.

## 2.3. How to use the multipliers

The multipliers show the cumulative effect of all the inter-relationships that exist in the economy. A multiplier is a single number that represents the total economic impact of a change in the economy. By multiplying the initial value of an activity by the multiplier, an estimate of the total impact to the economy is produced. Multipliers can be used to estimate how GDP, income and employment will change in response to variations in each industry's output.

An example of the direct, indirect, and induced effects in the capture fishery illustrates how multipliers estimate the total economic impact of a change in the economy.

Multipliers for the Capture Fishery (per \$ of direct output)				
	Direct	Indirect	Induced	Total
Output	1.00	0.49	0.08	1.57
GDP	0.42	0.14	0.05	0.60
Household income*	0.29	0.09	0.03	0.40
Government revenue	0.11	0.02	0.01	0.14
Employment (jobs per \$M)	2.10	1.59	0.54	4.22

<sup>\*</sup> Includes mixed income

Suppose output (i.e., total revenue) in the capture fishery increases \$1.0 million. In order to produce this output, the fishery will need to employ labour, and will use inputs such as fuel, utilities, equipment, transportation and various types of services. These goods and services are produced by various supplier industries.

The direct effect is the amount of the initial expenditure (\$1 million).

The effect on supplier industries (producers of fuel, utilities, equipment, transportation and other services used by the fisher) is calculated using an output multiplier of 0.49. The total indirect effect of \$490,000 is the cumulative change in the output of industries supplying goods and services used by the fishery.

Finally, each dollar of income earned by employees in direct and indirect activities initiates further spending, referred to as the "induced effect". For the capture fishery, its multipliers suggest that a \$1 million increase in output will generate \$80,000 of activity in industries benefitting from spending by workers. More comprehensive tables, discussion, and examples are found in the input-output multipliers section.

## 2.4. Why is GDP used to measure the size of an industry?

Many people think of an industry's value in terms of its total revenue (e.g., the landed or wholesale value of the fish catch) or the volume of goods or services produced by an industry. However, GDP is the measure of economic activity that is most commonly used to assess trends in the economy and to compare industries. This section provides

some background on why GDP is viewed as a better measure of the contribution made to the economy by a particular industry.

## 2.4.1. Revenue figures include the cost of goods and services purchased from other industries

When industry revenues are used as a basis for comparison, the value of raw materials and services used in production is reflected in industry revenues each time a product changes hands. The amounts could potentially be included in the revenue of many industries, going all the way up the supply chain from the original producer of a raw material or service to the final seller of a finished product.

This can be illustrated using an example from within the fisheries and aquaculture sector. This example is for illustrative purposes only, and is not meant to reflect the actual cost structure in either the capture fishery or fish and seafood processing industry. Consider a fish boat owner with a salmon catch valued at \$100,000. Suppose that the value of the catch is enough to cover operating costs, and to give the owner a return on investment of \$30,000.

Suppose further that the boat owner sells the catch to a fish and seafood processing plant, which then turns it into canned salmon that is sold for \$180,000. This amount is enough to cover the costs faced by the processing plant operator, including the value of the salmon that is purchased, the cost of materials, supplies and labour used to produce the canned fish, and a return on his or her investment.

The cost structure faced by both the fish boat owner and the fish processor is summarized below.

Fish boat owner					
Total revenue (value of catch)	\$	100,000			
less total costs:					
fuel	\$	30,000			
other supplies and services	\$	10,000			
wages	\$	30,000			
equals: profit (return to owner)	\$	30,000			
Fish processor					
Total revenue (value of sales)	\$	180,000			
less total costs:					
salmon purchased	\$	100,000			
fuel, electricity, other services	\$	20,000			
tins, labels, other materials	\$	10,000			
wages	\$	30,000			
equals: profit (return to owner)	\$	20,000			

In this example, the total revenue of the two firms is \$280,000. However, note that the value of the salmon catch appears twice: first, in the value of sales made by the fish boat owner and second, in the price for which the canned salmon was sold. Carrying the analogy on a step further, if the canned salmon is sold at a retail outlet, the retailer's price would include the purchase cost of the processed salmon (\$180,000) plus a mark-up to cover the costs of running a retail operation.

Revenue figures provide useful information on the total amount of money that changes hands, but they should not be used as a basis for comparing the contribution made to the economy by various industries. Using revenue data, the industry at the beginning of the supply chain (fishing, in this example) by definition must be smaller than any of the industries (such as fish and seafood processing) that use its products, because the cost of purchased products is always built into the final price charged by producers. This happens even if the value added by the initial industry is larger than that in industries that process the raw materials. As a result, inter-industry comparisons that are based on revenue can be very misleading.

#### 2.4.2. What is GDP and how is it calculated?

GDP measures the *value added* to the economy by an industry. It is calculated by subtracting the costs of materials, energy, and purchased services (e.g., accounting services or legal advice that is not provided in-house) from the total revenues (or output) of the industry.

#### 2.4.2.1. What is included in GDP?

The value added to the economy by an industry includes the following:

- Wages (the value of the work done by employed labour);
- Profits and earnings of business owners (the value of the work done by owner/operators of businesses in the industry);
- Interest and investment income (the return on financial capital invested by business owners);
- Changes in the value of inventories/stock held (this measures the value of goods that have been produced but have not yet been sold); and

 Depreciation (which measures the value of the work done by the capital used in production)

Collectively, these variables are measures of the value of the work done by the labour and capital employed in an industry. Indirect taxes (e.g., PST and GST) levied on products purchased by firms are not included. However, taxes net of subsidies on production (e.g., property taxes) are included in GDP, which is measured at basic prices<sup>5</sup>.

#### 2.4.3. GDP avoids double counting

With GDP measures, the value of a good or service used in production is counted only once, and is attributed to the producing industry. The GDP contribution of a specific industry is the value of the good or service added by *that* industry. By eliminating the double counting of inputs, it is possible to compare, across industries, the actual contribution to the economy made by each industry. This makes it possible to make meaningful comparisons of the value added to the economy by each industry.

#### 2.4.4. GDP is not the same as an operating surplus or deficit

Many of the items included in GDP are viewed as costs by businesses. This means that an industry could be losing money (i.e., have losses rather than profits) but still have a positive GDP. The GDP of an industry would only be negative if the cost of materials, supplies and energy purchased by the industry exceeded the total value of all its revenue. This is possible, but highly unlikely, as it would mean that purchases of raw materials, energy and services would exceed the amount the industry could expect to realize from sales of its product.

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<sup>&</sup>lt;sup>5</sup> GDP at basic prices includes net indirect taxes (indirect taxes less subsidies) on factors of production, whereas GDP at factor prices does not include taxes associated with production such as property, capital, and payroll taxes.

Fish boat owner					
Total revenue (value of catch)	\$ 100,000				
less total costs:					
fuel	\$ 30,000				
other supplies and services	\$ 10,000				
equals: GDP	\$ 60,000				
Fish processor					
Total revenue (value of sales)	\$ 180,000				
less total costs:					
salmon purchased	\$ 100,000				
fuel, electricity, other services	\$ 20,000				
tins, labels, other materials	\$ 10,000				
equals: GDP	\$ 50,000				

Going back to the example of the fish boat owner and the fish processor, the GDP (or value added) associated with the fishing activity would be \$60,000 (total sales less the cost of the material inputs and energy used to operate the boat). In other words, the fish boat operator has added \$60,000 of value to \$40,000 worth of material inputs. Similarly, the fish processor, who purchased \$130,000 of supplies and services (fish, cans, fuel, and so on), added \$50,000 of value to those inputs. The total GDP associated with their activities is thus \$110,000: \$60,000 from the fishing activity and \$50,000 from the canning process. The value of the materials, energy and services used in production is counted only once, and is attributed to the producing industry.

## 2.5. Can GDP figures be compared across industries?

It is possible to compare GDP across industries because GDP values the contribution made by each industry on a consistent basis.

In the fictitious example given, the fish boat operator had revenues of \$100,000, and generated a GDP of \$60,000. The fish and seafood processing firm had nearly double the revenue (\$180,000), largely because the cost of fish purchased from the boat owner was incorporated into the price of the canned salmon. On the basis of revenue, it would appear that the impact of the fish-processing firm was the larger of the two.

In this example, the value of the work done by the owner and crew of the boat (including the return to capital) was \$60,000. By comparison, the value added by the fish processor, who transformed the salmon caught by the boat owner into canned fish, was somewhat lower, at \$50,000. In other words, the value of the labour and capital used

to catch the fish was slightly greater than that required to turn the fish into tinned salmon.

Using GDP, it is possible to isolate the economic activity generated by each industry even if raw materials, supplies and services change hands many times during the process of creating a finished product. This is important because many industries in the economy are highly integrated. By using a specific measure like GDP, every industry's activity is measured using the same yardstick.

#### 2.6. What is real GDP?

GDP estimates are usually reported in "real" 6 dollars. The reason for doing this is to distinguish between changes that are primarily price-driven (inflationary conditions), and those that have occurred because there has been a change in the volume of goods or services produced by an industry. The real dollar figures measure changes in volume, valued in 2002 dollars. The base year (2002) and the method of chaining are both standard measures set by Statistics Canada.

Readers should be mindful that real dollar figures are used throughout the report. If one wishes to further examine the economic impact of individual data points in recent years, it is advisable to refer to the nominal GDP table included in this report.

GDP data for the capture fishery, aquaculture and fish and seafood processing industry are based on real dollar data published by Statistics Canada. The sub-categories of these industries, and the estimates for sport fishing, are derived from the real dollar data by allocating the total to individual categories within each industry, using a methodology that is described in more detail in the appendix.

<sup>&</sup>lt;sup>6</sup> For more information about how chaining is done, see www.statcan.gc.ca/pub/13-605-x/2003001/concept/fisher/metho/index-eng.htm

## 3. Defining the Fisheries and Aquaculture Sector

The fisheries and aquaculture sector includes the activities of the following industries, which are described in more detail<sup>7</sup> below:

- Capture fishery (commercial fishing);
- Aquaculture (fish and shellfish farming);
- Fish and seafood processing; and
- Sport fishing (freshwater and saltwater)

The capture fishery, aquaculture and fish and seafood processing industries are all part of the province's goods-producing sector. However, the sport fishing industry is involved in providing services to anglers, and is considered to be part of the service sector.

The capture fishery (commercial fishing, NAICS 1141) includes "all establishments primarily engaged in the commercial catching or taking of finfish, shellfish and other marine animals or plants from their natural habitats."

Aquaculture (NAICS 1125) includes "all establishments primarily engaged in farm-raising aquatic animals and plants. Establishments primarily engaged in raising both aquatic animals and plants in integrated growing operations, aquaponics, are also included. These activities can occur in both natural waters and in artificial aquatic impoundments and include the use of some form of intervention in the rearing or growing process to enhance production."

Fish and seafood processing (seafood product preparation and packaging, NAICS 3117) includes "all establishments primarily engaged in canning seafood, including soup; smoking, salting and drying seafood; preparing fresh fish by removing heads, fins, scales, bones and entrails; shucking and packing fresh shellfish; processing marine fats and oils; and freezing seafood. Establishments known as "floating factory ships", that are engaged in shipboard processing of seafood, are included."

**Sport fishing** includes the sport fishing-related activities of all establishments that sell directly to anglers. This includes operators in the transportation, accommodation, food

#### Classifying industries

The industry definitions used in this report come from the 2007 North American Industrial Classification System (NAICS), which is used by Statistics Canada to classify virtually all of the industrial data that it publishes.

 $<sup>^7</sup>$  The definitions given are quoted from: Statistics Canada Catalogue 12-501-XPE, published in March 2007.

and beverage services, boat and sporting goods retailing, marinas, and other industries producing recreational services. Consistent with the way in which the tourism sector is defined, some of the output associated with the non-fishing activities of recreational anglers who are also tourists in the province (for example, visits to tourist attractions) is attributed to the sport fishing industry. Sport fishing is thus a special aggregation of various NAICS-classified service industries that includes only those services that are sold directly to anglers.

A more complete description of the sport fishing industry can be found in the following section.

Retailing and wholesaling of fish and seafood products is not included in the definition of the fisheries and aquaculture sector. This is because there is not enough information to separate fish and seafood retailing or wholesaling from other activities in these industries. These industries are defined by their primary activity, that is, the activity (e.g. wholesaling, retailing) which generates the largest share of value added, regardless of the products being distributed and sold. Measures of the economic impact of retailing and wholesaling activities are therefore not included in this report.

## 4. An Overview of the Fisheries & Aquaculture Sector

Gross Domestic Product (chained \$2002 million)	1990	2000	2011		% change since 1990
Fisheries & aquaculture	936.9	598.5	667.4	100.0	-28.8
Capture fishery	346.4	134.7	102.3	15.3	-70.5
Aquaculture	15.5	41.9	61.9	9.3	298.1
Fish processing	220.8	173.6	177.5	26.6	-19.6
Sport fishing	354.1	248.3	325.7	48.8	-8.0
Total, all industries	91,753	121,546	157,525	100.0	71.7
Goods sector	26,471	31,322	37,466	23.8	41.5
Service sector	65,109	90,128	120,785	76.7	85.5
Fisheries & aquaculture	937	598	667	0.4	-28.8

As in previous editions of this report, the year 1990 has been used as a baseline; however, discussion is focused on activity taking place since 2000, with an emphasis on the years between 2005 and 2011. As previous reports have noted, activity was fairly stable in the capture fishery in the period between 1999 and 2005, following structural changes started in the 1990s. These changes were brought about by shifts in the management of various fisheries and by government programs aimed at addressing the issue of too much capital and labour involved in the capture of fish, which dissipated the resource rents. Comparisons between data in these periods should be made with this history and structural differences in mind.

### 4.1. Gross Domestic Product

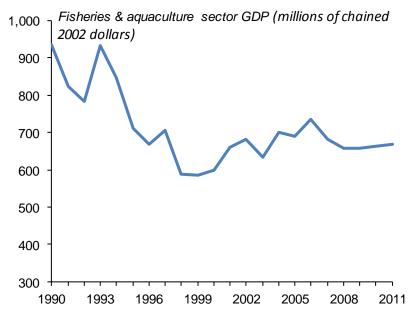
British Columbia's fisheries and aquaculture sector expanded slightly in 2011, with real GDP rising to \$667.4 million. The increase was the second in as many years, following a period of slowdowns or stagnant growth in the sector.

Although the fisheries and aquaculture sector has reversed its downward trend, it has not fared as well as other key segments of the British Columbia economy. The sector is currently 11.5% larger than in 2000. By comparison, the BC economy has expanded 29.6% since 2000, and the goods sector, which has seen some ups and downs in recent years, has grown 19.6%. In the same period, mining, oil & gas extraction expanded 45.7%, and construction saw growth of 78.1%. Output in utilities crept up 5.3%, while manufacturing fell 9.5%.

The linkages among the various components of the fisheries and aquaculture sector are significant. Fish and seafood processors handle fish and seafood products harvested by the capture fishery, as well as those produced by aquaculture operations. The GDP impact of the capture fishery as a whole has been in decline, and this has meant that the overall value of wild fish handled by the processing industry has been reduced. However, some species, such as crab, have exhibited periods of robust output, and others, such as tuna, contribute a substantially increased share of GDP relative to output in the 1990s. The GDP from prawn and shrimp has expanded by 10.6% since 2000, with marked fluctuations in the latter half of the period. At the same time, a growing aquaculture industry has partly offset some of the downward pressure.

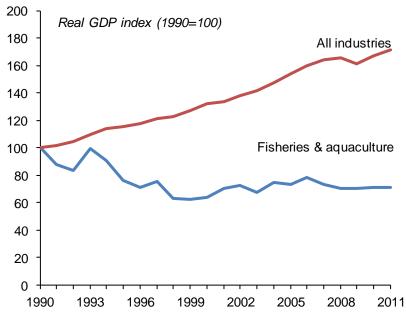
Three of the four industries in the fisheries and aquaculture sector have seen real GDP increase during the period since 2000. The capture fishery saw a decline of 24.0% over the period. The value added to the economy by fish and seafood processing activities inched up 2.2%, and in the sport fishery, 31.2%. British Columbia's aquaculture industry experienced the most dramatic growth, expanding 47.7% since 2000.

## GDP in the province's fisheries and aquaculture sector has remained relatively stable since 2008



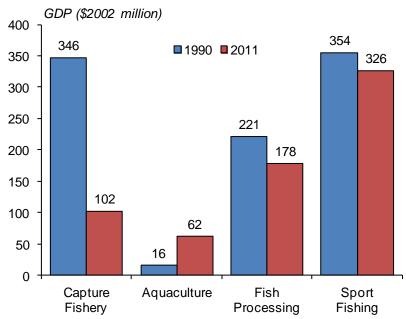
Data Source: BC Stats

The fisheries and aquaculture sector has expanded 11.5% since 2000



Data Source: Statistics Canada & BC Stats

#### The sport fishery now accounts for nearly half of the sector's total GDP



Data Source: Statistics Canada & BC Stats

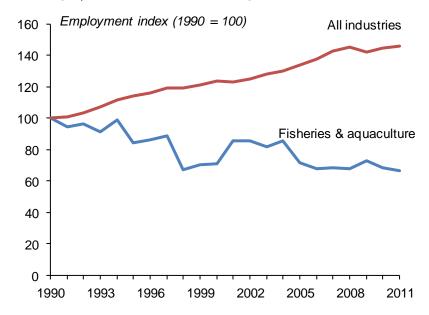
Of the four activities included in the fisheries and aquaculture sector, the largest is the sport fishery, which accounts for nearly half (\$325.7 million) of the sector's total GDP. Fish and seafood processing (\$177.5 million), which includes processing both farmed and capture fishery products, was ranked second. The capture fishery, once the dominant

industry in the sector, contributed \$102.3 million to the province's gross domestic product, while the GDP associated with aquaculture activities was \$61.9 million.

## 4.2. Employment

Total employment in the fisheries and aquaculture sector was estimated at 13,900 people in 2011, the lowest level recorded in over two decades. In the period since 2000, employment reached its peak in 2002, at 17,800 people. Employment in two of the four industries has declined during the period, with the most marked decrease seen in the capture fishery, where the average annual number of jobs has fallen from 4,100 in 2000 to 1,400 in 2011. The decline in aquaculture (from 1,900 to 1,700) employment has not been nearly as pronounced. The number of people working in fish and seafood processing (from 2,200 to 2,400) and sport fishing (from 6,600 to 8,400) has risen over the period.

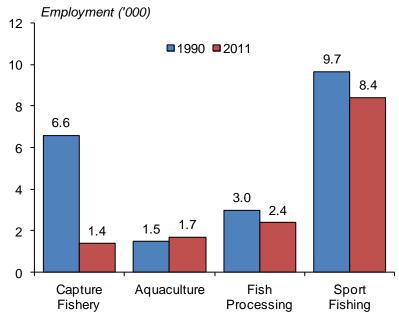
#### Total employment in the fisheries and aquaculture sector has fallen



Data Source: Statistics Canada & BC Stats

Overall, the number of people working in the fisheries and aquaculture sector has contracted 6.0% since 2000. This compares to a 17.8% increase in total employment, and a 9.9% rise in the number of people working in all goods-producing industries over the same period.

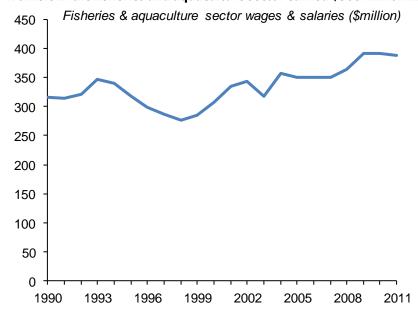
#### Sport fishing employs 8,400 people



Data Source: Statistics Canada & BC Stats

## 4.3. Earnings & Income

#### Workers in the fisheries and aquaculture sector earned \$388 million in 2011



Data Source: BC Stats

The total wage bill of the province's fisheries and aquaculture industry has increased by 26.4% since 2000, with workers earning a total of \$388.3 million in 2011. More than half (\$218.9 million) of the wages were paid to workers in industries providing goods

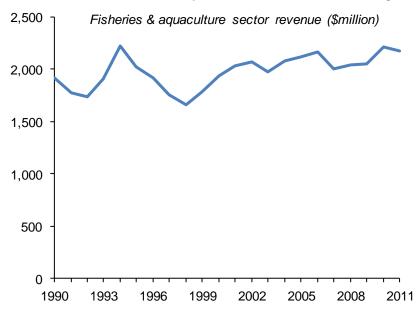
and services used by sport fishers. Another \$105.3 million was earned by those employed in the fish and seafood processing industry, with aquaculture (\$55.7 million) and the capture fishery (\$8.4 million) accounting for a much smaller portion of the total wage bill. It should be noted that the unincorporated business income of self-employed fishers, estimated at about \$70 million in 2011, is not included in the wage bill. The increase in the total wage bill for the sector reflects the growth in the sport fishing and aquaculture industries during the period since 2000.

#### 4.4. Revenue

Revenue data show similar trends. Over the longer run (since 2000), revenues in the fisheries and aquaculture sector have expanded 12.6%, rising to \$2.2 billion. The increase in revenues is largely due to growth in the aquaculture and sport fishing industries, which have seen significant growth in revenues over the last two decades (note that revenues, like wages, are reported in current dollars, and include the effects of price changes over time). Revenues in fish and seafood processing (-34.7%) and the capture fishery (-7.5%) have declined considerably since 2000.

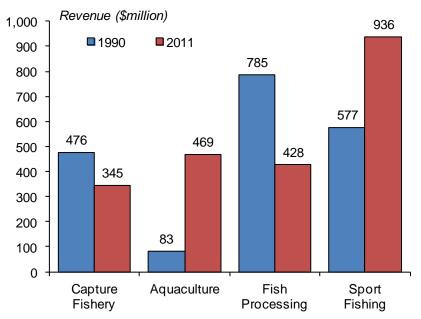
More detailed overviews of trends in the various industries included in the province's fisheries and aquaculture sector follow.

#### Revenues in the fisheries and aquaculture sector have been rising...



Data Source: Statistics Canada & BC Stats

#### ...largely due to growth in the aquaculture and sport fishing industries



Data Source: Statistics Canada & BC Stats

## 5. Capture Fishery

#### 5.1. Gross Domestic Product

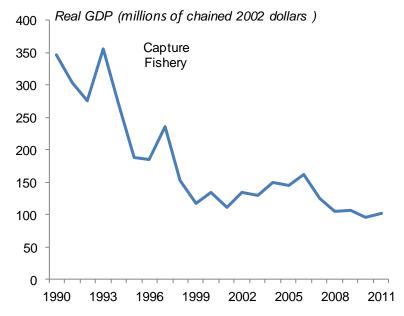
As mentioned earlier, the information in this section needs to be understood in the context of management and structural changes which started in the 1990s. These changes were brought about by shifts in the management of various fisheries and by government programs aimed at addressing the issue of too much capital and labour involved in the capture of the fish, which dissipated the resource rents. Comparisons between data in these periods should be made with this history and structural differences in mind.

Real GDP generated by British Columbia's capture fishery advanced 7.4% to \$102.3 million in 2011, following a notable decline (-10.0%) in the previous year.

GDP in the capture fishery reached its peak in the early 1990s, climbing to \$355.3 million by 1993. Between 1993 and 1999, GDP in the capture fishery dropped by more than two thirds (-67.1%) as contributions to value added from all major species in the fishery collapsed. In the period between 2000 and 2011, GDP generated by the capture fishery fell 24.0%, peaking at \$161.7 million in 2006, and hitting a bottom value of \$95.2 million in 2010.

Chief among the reasons for the decline in capture fishery GDP is the shrinking value of the salmon harvest. In the mid-1990s, the GDP generated by the salmon catch began to decline considerably, dropping from \$116.6 million in 1990, to \$29.3 million in 1995 (–74.9%), before dwindling to single digits in 1999 (\$5.9 million). In 2010, the salmon fishery experienced a rebound, with GDP totalling \$11.0 million, two years after reaching a historic low of \$2.8 million in 2008. Overall, GDP generated by the salmon fishery has risen 36.9% since 2000, after a period of dramatic decline in the industry between 1993 and 1999.

#### GDP in the capture fishery advanced 7.4% in 2011



Data source: BC Stats & Statistics Canada

Salmon caught by seine accounted for \$4.0 million (43%) of the 2011 salmon total, while salmon caught by gillnet & troll accounted for the remaining \$5.3 million (57%). Since 2000, the share of salmon caught by seine has averaged 37% of GDP, while the share of salmon caught by gillnet & troll has averaged 63% of salmon-generated GDP.

While the salmon harvest has registered somewhat of an upswing in GDP following the decline in the 1990s, contributions from nearly every other species have fallen. Since 2000, halibut (-20.2%), rockfish (-41.0%), herring (-65.1%), and sablefish (-45.5%) have all recorded substantial declines.

GDP generated by the shellfish harvest has also fared poorly. In 2011, geoduck contributed \$13.2 million to the industry's GDP. Since 2000, however, GDP associated with the geoduck harvest has slumped by 23.2%. GDP produced by the clam (-33.1%) and crab (-12.8%) harvests also slowed considerably between 2000 and 2011.

As severe as the overall slowdown in the capture fishery has been since 2000, GDP for a few species has actually expanded. Generating \$10.5 million in GDP in 2011, prawn & shrimp have emerged as one of the capture fishery's few sources of growth, with its GDP growing by 10.6% since 2000. The prawn and shrimp share of the capture fishery GDP also increased from 7.1% in 2000 to 10.3% in 2011.

Though GDP registered by the tuna harvest has fallen by 15.9% since 2000, the species has grown in importance for the capture fishery since its surge in 1999 to \$3.7 million, from \$600,000 in 1998. Peaking at \$8.1 million in 2004, GDP from the tuna harvest has fluctuated, averaging \$4.8 million in output since 2000. In 2011, the tuna harvest generated \$4.6 million in economic activity.

In 2000, the GDP output generated by the hake harvest fell to \$1.5 million, the lowest output seen since the mid-1980s. Hake output rose from 2000 to 2006, when it peaked at \$8.0 million, and has since dampened, averaging \$4.3 million between 2007 and 2011. Since 2000, the GDP from the hake harvest has increased 143.9%, with output in 2011 totalling \$3.6 million.

## 5.2. Employment

Total employment in BC's capture fishery was estimated at 1,400 in 2011, down sharply (-26.3%) from the previous year. This marks the lowest level of employment recorded in the capture fishery in more than two decades.

Compared to other primary industries, that is industries directly involved in the extracting or harvesting of natural resources<sup>8</sup>, employment in the capture fishery has exhibited considerable volatility from one year to the next. While substantial increases are recorded in several years, these are often followed by even deeper declines in subsequent periods, yielding a trend that clearly illustrates that the number of jobs in the industry has fallen appreciably over the decade.

Since 2000, employment in the capture fishery has dwindled from 4,100 to the current level of 1,400, a drop of 65.9%. In contrast, total employment in the province has risen 17.8%.

While much of the provincial increase has been in the number of jobs in the service sector (+19.9%), employment in BC's goods-producing sector has expanded 9.9% since 2000. Other primary industries (excluding fishing), which have likewise struggled to maintain employment levels, have seen employment decline by nearly one-fifth (-17.3%).

After the goods sector slipped into recession in 2001, employment in most primary industries trended higher. Between 2001 and 2008, the number of jobs in primary

 $^8$  "Primary industries" are defined as agriculture (including aquaculture), fishing, hunting & trapping, forestry & logging, and mining , oil & gas extraction as well as related support activities.

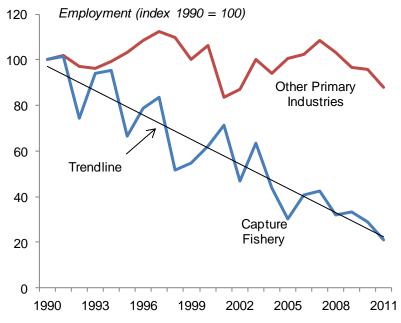
**Measuring Employment** 

Employment figures are not meant to be counts of every person who spends some time working in an industry during a given period. Instead, employment measures the amount of labour used by a given industry in order to produce its output. Further discussion on employment measures can be found in Appendix III.

industries other than fishing grew by nearly one-quarter (+24.6%). It was not until recessionary conditions abroad reached BC that employment in other primary industries began to decline, falling 9.2% between 2009 and 2011.

In the capture fishery, however, employment was in the midst of a marked downturn well in advance of the economic slowdown, tumbling by more than half (-55.3%) between 2001 and 2008. The contrast in employment trends between other primary industries and the capture fishery suggests that employment contractions in the capture fishery were due to factors other than the economic downturn.

## Job losses in BC's capture fishery have been heavy compared to other primary industries



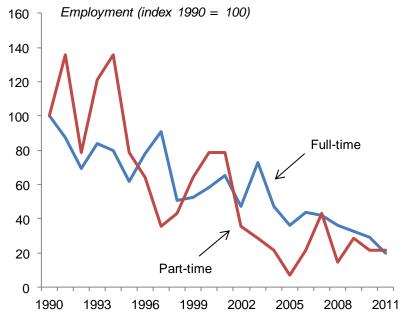
Data Source: Statistics Canada & BC Stats

#### 5.2.1. Full-time and part-time employment

Both full-time and part-time jobs in the capture fishery have fallen since 2000, with the decline in full-time employment (-65.6%) occurring at a slightly slower pace than part-time employment (-72.7%).

The share of total capture fishery employment made up of part-time jobs has fluctuated considerably since 2000. On average since 2000, part-time workers accounted for 15% of employment in the capture fishery, but their share has ranged between a high of 26% in 2000, to a low of just 5% in 2005, further illustrating the degree of volatility that exists in the capture fishery.

#### Full-time and part-time employment in the industry has been in decline



Data Source: Statistics Canada & BC Stats

## 5.3. Earnings & Income<sup>9</sup>

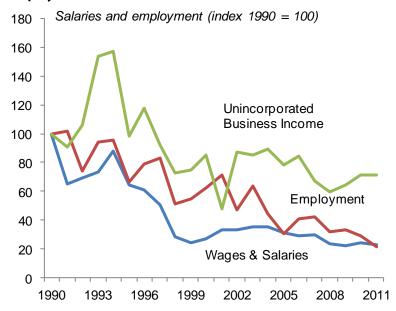
Workers in British Columbia's capture fishery earned approximately \$8.4 million in 2011 in wages and salaries, down 4.5% from the previous year.

Commensurate with the declining number of jobs in the capture fishery, wages and salaries earned by fishers have similarly fallen. Since 1990, total wages and salaries in the capture fishery have dropped 77.1%. Much of that decline, however, occurred during the 1990s. Between 1990 and 1999, wages and salaries in the capture fishery dropped by just over three-quarters (–75.5%). Total wages in the industry then went through a brief period of growth between 2000 and 2003, expanding nearly one-third (+30.1%) during that time, before once again continuing lower, dipping to \$8.0 million in 2009. Total capture fishery wages were \$8.4 million in 2011, a decrease of 15.9% since 2000.

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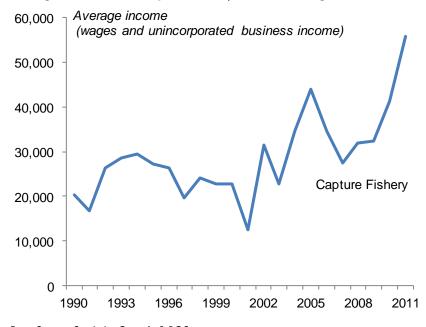
<sup>&</sup>lt;sup>9</sup> It should be noted that earnings figures discussed in this section also include wages and salaries and unincorporated business income from the hunting and trapping industry. These values are negligible, since the hunting and trapping industry in BC is very small.

## Wages earned by workers in the capture fishery have been shrinking as employment has declined



Data Source: Statistics Canada & BC Stats

#### Average income in the capture fishery has been rising



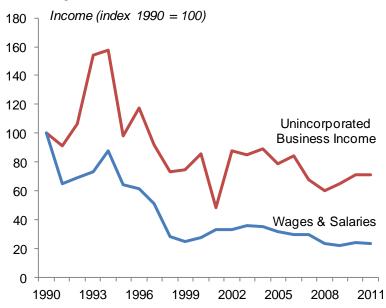
Data Source: Statistics Canada & BC Stats

Wages alone, however, do not provide a complete account of the amount of income earned by those working in the capture fishery, as many fishers are self-employed, and therefore do not necessarily pay themselves a 'wage'. Rather, unincorporated business

income, a measure of the return on labour and capital received by owner-operators of small businesses, is considered a more accurate reflection of the level of income.

In 2011, roughly \$70 million in net unincorporated business income was attributable to activities in the capture fishery, based on data available for fishing and hunting. Unincorporated business income has slowed at a slightly lower rate than wages and salaries, though the year-to-year volatility has been observably greater. Since 2000, unincorporated business income has slipped 16.6%.

## Unincorporated business income has fallen at a markedly slower rate than wages and salaries



Data Source: Statistics Canada & BC Stats

#### 5.4. Revenue

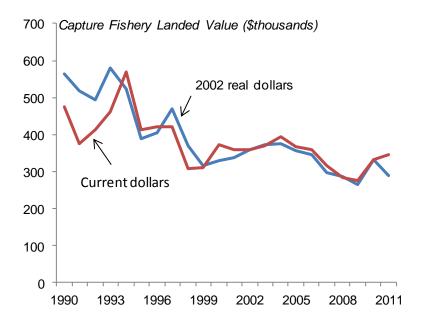
Revenues rose for the second year in row in 2011, to \$344.8 million (+4.1%). Revenues in the capture fishery fell every year in the period between 2005 and 2009, before a record run of Fraser sockeye took place in 2010, boosting revenues 19.5%.

Halibut, which experienced a period of strong growth between 1990 and 2006, and decline between 2007 and 2009, recovered somewhat in 2010, and surged ahead in 2011, recording \$45.6 (+21.6%) million in revenues. Revenues generated from other groundfish fisheries were up 26.4% (\$19.0 million) in 2011, following declines in five out of the past six years.

The landed value of salmon dropped 34.6%, to \$46.2 million in 2011, eroding a large amount of the growth recorded in 2010 (+197.9%). Since 2000, salmon revenues have fluctuated considerably, from a low of \$21.8 million in 2008, to a high of \$70.6 million in 2010. Overall, revenues have declined 8.5% since 2000, but expanded 35.1% since 2005.

Formerly accounting for a large share of revenues earned by the capture fishery, the landed value of herring fell to historic lows in 2011, producing \$3.8 million (-67.8%) in revenues, a drop from \$11.8 million recorded the previous year, and just a fraction (-96.2%) of the peak value of \$99.7 million reached in 1996.

The landed value of prawn & shrimp (+66.0%) rose sharply in 2011, to \$41.0 million. Other shellfish & fish (+24.4%) also saw a considerable growth, while geoduck & clams (-0.2%) fell slightly.



Data Source: Fisheries & Oceans Canada & BC Stats

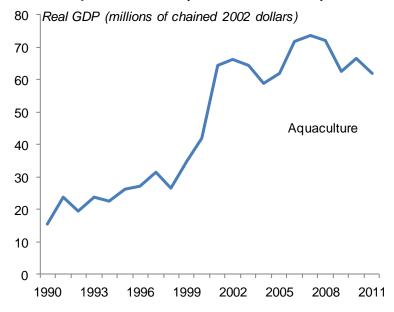
## 6. Aquaculture

Within the aquaculture industry, a share of companies are vertically integrated, engaging in both aquaculture farming and fish processing. Generally speaking, such companies would only be included in the analysis if the share of output generated by processing is below that of farming, and therefore not considered the primary activity of the company. Companies whose primary output (represented by GDP, or by revenue or employment as proxy if measurement issues are present) is fish processing are accounted for under the NAICS code 3117 (seafood production, preparation & packaging), and discussed in the fish and seafood processing section.

#### 6.1. Gross Domestic Product

Gross domestic product in British Columbia's aquaculture industry was \$61.9 million in 2011, a decline of 7.2% over the previous year. The drop reversed nearly all of the growth recorded in 2010.

#### Growth in the aquaculture industry has slowed in recent years



Data Source: Statistics Canada & BC Stats

The aquaculture industry has achieved rapid growth over the past two decades, increasing three-fold since 1990. Most of the increase took place between 1999 and 2002, and 2005 to 2007 as output spiked in both the salmon and shellfish farming industries.

Salmon farming, the largest industry within aquaculture, generated \$58.5 million of GDP in 2011, which was 7.3% less than in the previous year. GDP generated by salmon increased steadily throughout the 1990s and early 2000s, then exhibited higher volatility in the latter half of the decade, peaking at \$68.7 million in 2008, and slowing down in the years that followed. Over the period of 2000 through 2011, the gross domestic product of the salmon farming industry increased by 47.4%.

Contributions to GDP from all shellfish species have grown by 72.3% since 2000. In 2011, the value of total shellfish GDP fell 12.9%, to \$9.0 million, following a mild recovery in 2010 (+23.0%). The increase was spurred by peak GDP output across shellfish species.

Oyster farming operations generated \$3.2 million (–12.9%) in 2011, producing the second-largest share of GDP of all shellfish species. Clam farming operations lowered their GDP by 12.9%, to \$3.3 million in 2011. The value added by the clam harvest was \$2.5 million in 2000, but soared to \$4.0 million in 2001 (+59.7%), with several years of increase recorded since then, as well as a slowdown occurring between 2008 and 2010. GDP output from clam farming operations expanded by a total of 31.1% above 2000 levels in 2011.

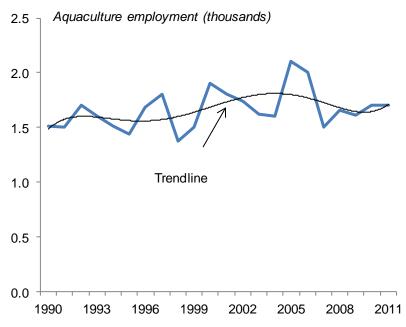
Scallops, which generate a relatively small share of GDP (2.7%), recorded \$1.8 million of output in 2011. Since 1993<sup>10</sup>, scallop aquaculture activity has developed considerably, budding from an industry of just \$57,000, with much of the growth taking place post-2007. In 2000, scallop GDP totalled just over \$100,000; output rallied in 2007, reaching \$600,000 before breaking the \$1 million mark in 2008 (\$1.1 million). Since 2000, output in the scallop industry has increased by 1,600.2%.

## 6.2. Employment

Employment in the aquaculture industry was estimated at 1,700 in 2011, virtually unchanged (+0.3%) from 2010. During the years between 2000 and 2011, employment in aquaculture averaged 1,700, peaking at 2,100 in 2005, then gradually returning to the average. Employment has remained essentially constant from 2008 forward, despite fluctuations in total wages, output, and revenue.

<sup>&</sup>lt;sup>10</sup> 1993 is the first year for which scallop GDP is available.

## Aquaculture employment has decreased by roughly 10% between 2000 and 2011



Data Source: Statistics Canada & BC Stats

### 6.2.1. Measuring employment in aquaculture

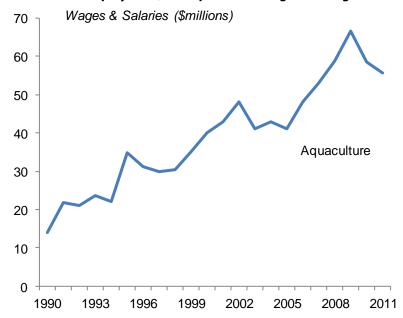
Measuring employment in small industries is a challenging exercise. Statistics Canada has prepared estimates of employment in the aquaculture industry for the period from 1987 to 2011, but has only released estimates for selected years due to the industry's relative small size in the province. BC Stats' aquaculture estimates for the intervening years were derived by interpolation based on other data, including the existing trend in the industry for Canada as a whole, of which BC makes up a significant proportion.

It is important to note that these data, derived from the Labour Force Survey, are for a rather small number of employees based on a relatively small sample of the population. Fluctuations in the annual data may indicate changes in the composition just as much, or rather than, a true increase or decrease in the number of people working in the industry. Therefore, estimated employment levels for aquaculture should be used with caution.

## 6.3. Earnings & Income

In 2011, wages and salaries earned by workers in the aquaculture industry were estimated at \$55.7 million, down (-4.7%) from the \$58.5 million in wages and salaries generated a year earlier.

#### In contrast to employment, the aquaculture wage bill has grown since 2000



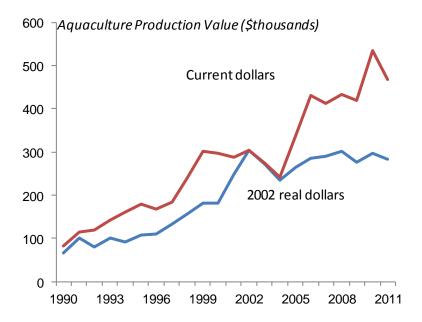
Data Source: Statistics Canada & BC Stats

The aquaculture industry's wage bill remained fairly stable in the years 2000 through 2005, averaging \$42.7 million across the period. Wages and salaries climbed steadily to a peak of \$66.5 million in 2009, before descending to \$55.7 million in 2011. Over the period of 2000 through 2011, aquaculture's wage bill increased by 39.3%.

#### 6.4. Revenue

Revenues estimates for aquaculture are produced by BC Stats, not Fisheries and Oceans Canada data. Revenues in BC's aquaculture industry slipped 1.1% in 2011 to \$528.6 million, maintaining most of the gains made in 2010 (+26.2%). Salmon revenues, which make up 93% of total revenues, fell slightly (-1.4%) in 2011, following an expansion of 26.7% in 2010. The double-digit increases in shellfish (+19.0%) revenues seen in 2010 (+24.8%) continued in 2011, accounting for \$25.7 million of total revenues, as oyster (+19.0%), scallop (+19.0%) and mussel (+19.0%) revenues all rose. Clam (-13.5%) revenues fell in 2011, reversing all of the growth achieved in 2010 (+12.7%), and

returning to revenue levels not seen since 2000. Trout revenues dipped 1.4% in 2011 to \$4.4 million, following a historic high of \$4.5 million in 2010, a 73.3% increase over the previous year, and a significant jump from \$1.0 million in 2006.



Data Source: Fisheries & Oceans Canada and BC Stats

Aquaculture in BC has expanded significantly since 2000, when revenues totalled \$296.1 million, though the industry has seen periods of volatility. Since 2005, revenues in the aquaculture industry have climbed from \$388.7 million to \$528.6 million in 2011, an increase of 56.1%, driven largely by strong growth in salmon revenues, and supported by modest growth across shellfish species, and trout. Overall, since 2000, aquaculture revenues have climbed by 78.5%.

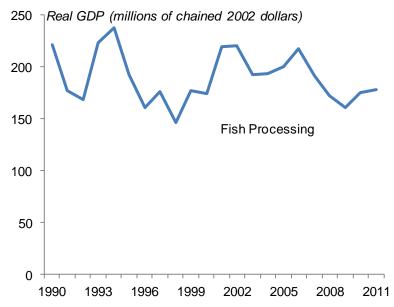
# 7. Fish and seafood processing

#### 7.1. Gross Domestic Product

Fish and seafood processing contributed \$177.5 million to provincial gross domestic product in 2011, an increase of 1.2% over 2010.

GDP in fish and seafood processing has exhibited a high degree of volatility with large increases followed by sudden slowdowns. A drop in 2007 (-11.8%) lasted three consecutive periods, as the industry contracted sharply in both 2008 (-10.3%) and 2009 (-6.7%). GDP in the industry has begun to recover somewhat, expanding 9.4% in 2010 and inching up 1.2% in 2011.

# While fish and seafood processing GDP is very cyclical, it has remained in a relatively stable range



Data Source: Statistics Canada & BC Stats

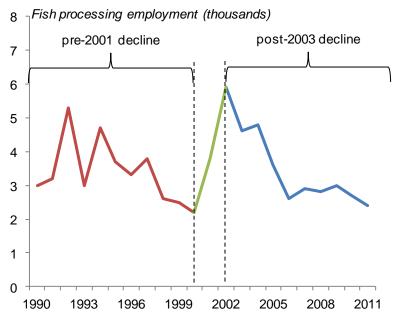
Historically, fish and seafood processing has been an important industry among food producers in the province, on average accounting for approximately one-seventh (14%) of GDP generated in food manufacturing between 2002 and 2007. Since 2007, however, that share has slipped considerably, dropping to an 11% share in 2008 and then dipping to a share of 10% between 2009 and 2011, as GDP generated by fish and seafood processing fell, while total food manufacturing rose.

## 7.2. Employment

The number of people employed in fish and seafood processing fell 11.1% in 2011 to 2,400 persons.

In general, employment in fish and seafood processing over the past two decades can be described as being two lengthy periods of decline (1990 to 2000 and 2003 to 2011) punctuated by a sharp surge in jobs in both 2001 (+72.7%) and 2002 (+55.3%). Overall, employment in fish and seafood processing has risen 9.1% since 2000, but declined 33.3% since 2005.

# With the exception of large increases in 2001 and 2002, employment in fish and seafood processing has been generally in decline



Data Source: Statistics Canada & BC Stats

## 7.3. Earnings & Income

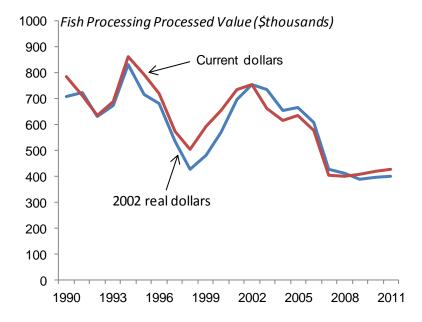
Wages and salaries earned by workers in the fish and seafood processing industry totalled \$105.3 million in 2011, an increase of 3.6% for the second year in a row.

Since 2000, wages and salaries have fluctuated around the \$90 million to \$122 million range, reaching their highest level in 2002 (\$121.8 million), and falling to \$91.0 million in 2008.

## 7.4. Revenue

Fish and seafood processing revenues rose to \$427.5 million in 2011, up 2.1% over the previous year. Revenues in the industry have been volatile. In recent years, they have recovered from a historic low of \$401.5 million in 2008. Sustained periods of decline, met by relatively short expansionary spurts have placed the industry well below 2000 levels (\$654.9 million) today. Fish and seafood processing revenues had been in decline since 2003, and have shown signs of recovery since 2009 (+3.4%). Overall, revenues in the fish and seafood processing industry have declined 34.7% since 2000.

Output by the processing industry is not equal to the wholesale value, as the value added by wholesalers, is unaccounted for in the value of processing output.



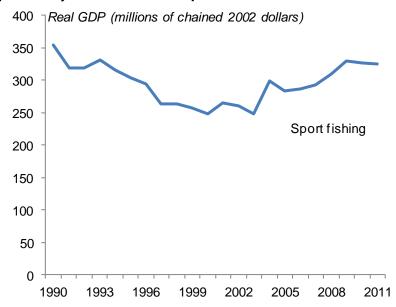
Data Source Fisheries & Oceans Canada & BC Stats

## 8. Sport Fishing

#### 8.1. Gross Domestic Product

The province's sport fishery, which declined throughout most of the 1990s, has been on a general upward path during most of the last decade. However, the industry has experienced setbacks in each of the two previous years. In 2011, the industry edged lower (-0.2%), following a more substantial decline (-1.1%) in 2010.

#### Sport fishery GDP continued to slip in 2011



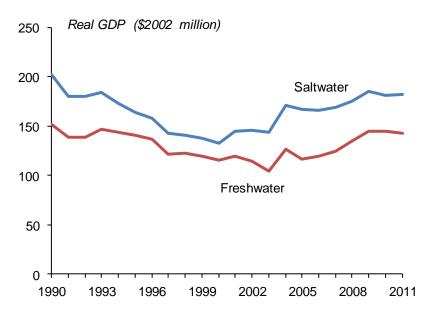
Data Source: BC Stats

In little over a decade, between 1990 and 2003, GDP in the province's sport fishing sector dwindled from \$354.1 million to an historic low of \$247.7 million, representing a drop in economic activity of nearly one-third (–30.0%). In the period since 2003, however, GDP in the industry has been trending higher, expanding 31.5% between 2003 and 2011, and peaking at \$330.2 million in 2009. Overall, GDP output in the sport fishery has risen by 31.2% since 2000.

It is important to keep in mind that the GDP figures presented here are in real 2002 dollars, meaning that they have been restated to remove the effects of inflation. To a certain extent, price increases masked the lack of growth in the industry since 1990, as revenues (discussed later) rose significantly. However, this mainly reflects the price rather than the volume effects.

British Columbia's coastal location means that economic activity within the sport fishing industry can be thought of as belonging to two broad categories: those related to freshwater fishing and those related to fishing in tidal waters (i.e. saltwater). Historically, GDP from saltwater fishing has accounted for a larger share (56% in 2011) of total GDP for the sport fishing industry than the GDP generated by freshwater fishing (44%).

## Historically, saltwater fishing has accounted for just over half of the sport fishery's GDP



Data Source: BC Stats

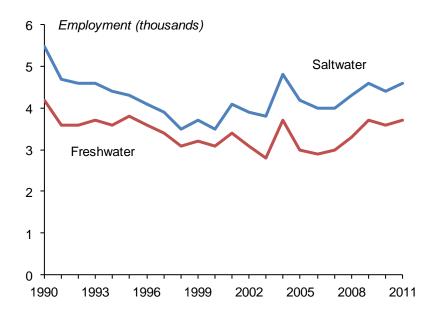
In terms of development of economic activity, freshwater and saltwater sport fishing tends to be highly correlated. The period of decline noted for the sport fishery as a whole between 1990 and 2003, was also present as contractions in both types of sport fishing activity.

## 8.2. Employment

As was the case with GDP, employment in the sport fishing industry experienced a period of decline (1990 to 2003) followed by a period of recovery (2004 to 2011). In 2011, employment in the sport fishing industry grew 5.0% to 8,400 jobs. Overall, employment in the sport fishing industry in 2011 was 27.3% higher than it was in 2000.

Employment related to saltwater fishing makes up a larger share (56%) of the total number of jobs in sport fishing than freshwater fishing (44%). In 2011, approximately 4,600 jobs were attributable to saltwater fishing, while freshwater fishing accounted for the remaining 3,700.

#### Employment in the sport fishery has been increasing



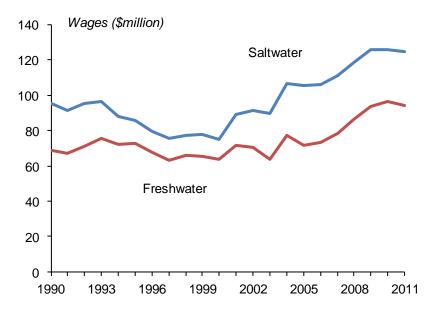
Data Source: BC Stats

## 8.3. Earnings & Income

The total wage bill for workers in the sport fishing industry fell 1.4% in 2011, the first such slowdown in industry earnings following five consecutive annual increases from 2006 to 2010.

Since 2000, wages and salaries in sport fishing have increased by 57.6% with those generated by saltwater fishing (+66.5%) rising more than those earned by workers engaged in freshwater sport fishing (+47.1%).

#### In general, wages in sport fishing have been on the rise for over a decade

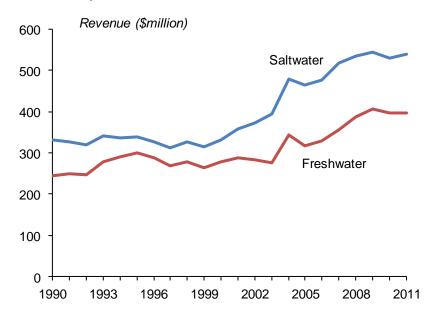


Data Source: BC Stats

#### 8.4. Revenue

Total revenues generated by sport fishing climbed 0.8% between 2010 and 2011, to \$936.5 million.

#### Total industry revenues were estimated at \$936 million in 2011



Data Source: BC Stats

Revenue arising from sport fishing-related activities accounted for 42% of the \$2.2 billion in total earnings of the fisheries and aquaculture sector. Of this total, an estimated \$539.8 million was generated by saltwater sport fishing, while \$396.7 million came from the activities of freshwater fishers.

Revenues of the sport fishing industry were relatively stable through much of the 1990s, but have risen considerably since the start of the 2000s. Between 1990 and 1999, sport fishing revenues inched ahead just 0.3%. From 2000 to 2011, however, revenues have soared by 53.6%. From 2005 onwards, revenues increased every year, except 2010, which followed a peak of \$951.3 million in 2009. As noted in the GDP discussion, the increase in revenues generated is mainly attributable to inflation rather than increased economic activity.

## 9. Defining the Sport Fishing Industry

#### The relationship between tourism and sport fishing

Some, but not all, of the GDP, employment and revenue in the sport fishing industry is also part of the province's tourism sector.

Many recreational anglers are also tourists—people who travel a distance of 80 kilometres or more from their usual place of residence in order to participate in this activity.

At the same time, many anglers who live on the coast of BC or near inland waters would not be considered tourists because they can participate in this activity without traveling far from home.

For this reason, a significant percentage of the GDP, employment and revenue data reported for the sport fishing sector is also included in the tourism sector. Users of tourism and sport fishing estimates should be aware of this overlap.

Sport fishing is not an industry for which economic measures are readily available. Standard economic measures such employment, wages, revenues and GDP are reported based on the North American Industrial Classification System (NAICS), which does not include sport fishing as a defined industry. The classification system assigns an establishment to an industry based on what it produces (e.g., accommodation services) rather than who its clients are (e.g., sport fishers).

This means that the economic activities associated with sport fishing are reported as part of the GDP, employment, or revenues of many industries. These include accommodation, food and beverage services, retailing, transportation and amusement and recreation. Some segments of these industries (e.g., fishing lodges and fishing guides) are highly dependent on sport fishing.

In order to derive estimates of the size of the sport fishing industry, an approach was taken that is based on the methodology used to develop estimates of the size of the tourism sector. Specifically, the sport fishing sector was defined to include the sport-fishing related activities of establishments that sell directly to anglers. In some cases, sport fishing accounts for a significant portion of total revenues. In others, the sport fishing component is relatively small.

This definition is very similar to the one used to describe the tourism sector, which includes the tourism-related activities of establishments that directly provide services to

tourists (where tourists are defined to include those who have travelled a distance of at least 80 kilometres from their usual place of residence).

## 9.1. Tourists versus non-tourist anglers

The sport fishing and tourism sectors are not mutually exclusive. Many operators who provide services to sport fishers (e.g., fly-in fishing lodges) would also be considered part of the tourism sector. However, not all sport fishers are tourists. Many residents of British Columbia enjoy angling and can participate in this activity relatively close to home, so their activities would not fall within the definition of tourism.

Establishments that provide goods and services directly to anglers include:

- Those that provide services used by both tourist anglers and local anglers. This would include marinas as well as retailers of sporting goods, boating equipment, and fuel. The sport fishing component of these activities was estimated by comparing expenditure data from surveys of recreational anglers to total spending on the same types of goods and services by all consumers in the province. For example, the percentage of fuel expenditures that was made by anglers was used to determine the sport fishing component of GDP, revenues and employment in the gasoline retailing industry.
- Those that provide air and water transportation, accommodation, food and beverage services and services such as guiding to tourist anglers. It was assumed that non-tourist anglers would not purchase these services<sup>11</sup>. For these industries, the sport fishing component was estimated by comparing data from the angler surveys with total consumer spending on each type of service.
- Those that provide services used by tourist anglers that are not directly related to the angling experience. This includes transportation other than air or water transportation, as well as various other types of services. It was assumed that tourist anglers would behave in the same way that other tourists do. That is, they would be as likely to purchase souvenirs, visit an attraction, or go to a museum at some point during their trip as any other tourist would. The sport fishing component of these industries was estimated by as a proportion of tourism-related activities that was based on the percentage of overnight visitors to the province who are sport-fishers.

British Columbia's Fisheries and Aquaculture Sector, 2012 Edition

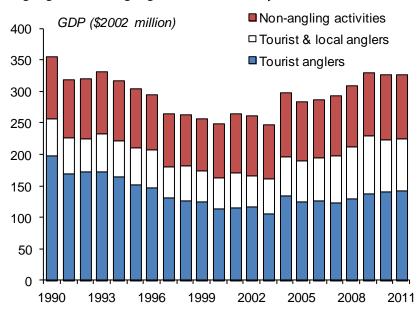
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<sup>&</sup>lt;sup>11</sup> In order to be considered a tourist, an individual must travel a distance of at least 80 kilometres from his or her usual place of residence.

Though neither of the last two establishment categories sell to non-tourists, they have been presented separately to distinguish between providers supplying services demanded exclusively by tourist *anglers*, from those supplying services to all tourists, including anglers. Methodologically speaking, no distinction was made.

The definition specifies that all industries that sell directly to anglers should be included in the sport fishing industry. The question of whether or not to include industries providing services that are not necessarily part of the angling experience has been carefully considered. The framework that was already in place for deriving tourism indicators suggested that these types of incidental activities engaged in by tourists ought to be included in an estimate of the tourism sector<sup>12</sup>. There are strong links between tourism and sport fishing activities, and in order to maintain consistency with the tourism-sector methodology, the same approach has been adopted in this study.

## Economic activity generated by sport fishing is made up of both angling and non-angling related activities by both tourists and locals



Data Source: BC Stats

Angling-related activities of tourist and non-tourist anglers account for most of the industry's GDP. However, in 2011, anglers who came to BC or travelled within the province to fish, also generated about \$101 million in GDP arising from other activities

<sup>&</sup>lt;sup>12</sup> As referenced in the section's introduction. A more comprehensive discussion is available on the BC Stats website: <a href="http://www.BCstats.gov.BC.ca/Files/1a9ce086-a0e0-4e48-9e38-70feee3c58a2/Measuringthe-SizeofBritishColumbiasTourismSector.pdf">http://www.BCstats.gov.BC.ca/Files/1a9ce086-a0e0-4e48-9e38-70feee3c58a2/Measuringthe-SizeofBritishColumbiasTourismSector.pdf</a>

such as shopping or visits to attractions. Nearly one-third (30%) of total GDP in this industry is attributable to these peripheral activities.

# 10. Consumption of Fish and Seafood Products

The fisheries and aquaculture sector includes the capture, raising and processing of fish and seafood products, and angling-related activities of tourists and non-tourists. However, this does not present a complete picture of the role that the fisheries and aquaculture sector plays in the provincial economy.

Fish and seafood that has been caught or raised in British Columbia is used in a number of ways. It may be sold whole to distributers for resale in grocery stores or at fish markets. Some is exported unprocessed and some is sent to processing plants, including floating vessels. At a processing plant, the product is canned, filleted, dressed, sliced into steaks, processed into fish cakes, sticks, or burgers, or processed in another manner, and subsequently exported or consumed domestically.

The sector is highly integrated. Some aquaculture operations wholly or partially process their own products before selling them; others may send them to a processing plant. The capture fishery supplies processing plants with the raw materials they use to produce their final product. All three of the goods-producing industries in the fisheries and aquaculture sector produce goods that can either be exported or consumed domestically.

Most of the fish and seafood produced in British Columbia is destined for consumption outside the province. In 2011, the value of sales of fish and seafood products (including processed goods) was estimated at \$1.3 billion. International exports of these products were \$911 million, while exports of fisheries and aquaculture products to the rest of Canada are estimated to be in the order of about \$150 million. At the same time, data adjusted to reflect BC's share of Canadian imports, from the economic accounts, shows that British Columbia imported an estimated \$560 million worth of fish and seafood products from other countries, for consumption within the province. A much smaller amount (less than \$20 million), was imported from other provinces.

In other words, some of the fish and seafood products consumed in BC come from other countries or from other parts of Canada. This means that the linkage between British Columbia's capture fishery, aquaculture and processing industries and retail or wholesale establishments is not exact.

Retail and wholesale data is reported on an industry, rather than a commodity basis. This means that retail sales of fish and seafood products are reported in the sales of grocery

stores, specialty food stores, and some other types of retailers such as department stores which now include food products among the items they sell. Identifying the portion of sales that is related to fish and seafood products would be a difficult task.

The value of trade in fish and seafood products is discussed in the next section. The remainder of this section provides some data about consumption of fish and seafood products in British Columbia. The data is based on surveys of household spending.

# 10.1. Household expenditure and consumption

Consumer behaviour surrounding expenditure on and consumption of fish and seafood products has been influenced by several factors. Increased public awareness of the health benefits of a diet that includes moderate consumption of fish has piqued consumer interest. The increased availability, quality, and variety of seafood products offered in supermarkets make it a more prevalent food-choice than it has been, historically. A rise in median household income has also supported higher demand for fish and seafood products. Data shows a slight rise in fish and other marine products as a share of household food expenditure<sup>13</sup> in British Columbia, over the period from 1996 through 2010.

#### 10.1.1. Retail sales of fish and seafood products

As a coastal province, British Columbian residents have greater access to fish and seafood products than residents of land-locked provinces, making fish and seafood products a popular choice. Nationally, fish and seafood products account for 0.3% of total retail sales, and 1.4% of sales of food and beverage stores (this information is not available at the provincial level in 2011).

### 10.1.2. Average household food expenditure

The surveys discussed in this section present aggregate totals, and do not differentiate between the consumption of domestic and imported fish and seafood products.

<sup>&</sup>lt;sup>13</sup> Data referenced for years 1996 and 2001 are sourced from Statistics Canada's 2001 Food Expenditure in Canada report, while data referenced for 2010 are from the 2010 Survey of Household Spending. Methodologies differ between the two reports, creating a break in the data. Data should be compared with this in mind.

Fish and other marine products accounted for 2.5% of total average weekly household food expenditure (food purchased from stores and restaurants) in British Columbia in 2001, slightly higher than the national average (2.3%). As a share of food purchased at stores locally and on day trips, fish and other marine products accounted for 3.8% of expenditure.

Of the provincial total (2.5%), fish products accounted for 1.9%, and other marine products for the remaining 0.7% of total food expenditure. Fresh and frozen fish (excluding portions) accounted for 1.3% of purchases, 0.6% of the total were purchases of salmon. Canned fish, primarily salmon (0.2%) and tuna (0.2%), made up 0.5% of household food expenditures. Purchases of shrimp and prawns (0.4%) made up the majority of expenditure on other marine products (0.7%).

Fish and other marine products, as a percentage of total food expenditure in British Columbia, rose from 2.1% in 1996 to 2.5% in 2001. Over the same period, its share fell or remained unchanged in every other region included in the survey

In 2010<sup>13</sup>, fish and seafood products' share of annual food expenditure in British Columbia was 3.1%. British Columbian's spent an estimated \$315.9 million dollars on fish and seafood products, translating to an average of \$176 dollars per household, annually. Fresh or frozen fish expenditures totalled approximately \$125.4 million dollars, while canned fish expenditures were estimated at \$67.8 million dollars. Seafood and other marine products accounted for \$122.8 million dollars, of which \$62.5 million was attributed to expenditure on shrimp and prawns.

In 2001, fish and marine products accounted for 2.5% of weekly household food expenditure in British Columbia

% of average weekly food expenditure	2001	2010
Total weekly food expenditures	100.0%	100.0%
Food purchased from restaurants	32.7%	29.8%
Food purchased from stores	67.3%	70.2%
'	2.5%	
Fish and other marine products		2.2%
Fish	1.9%	1.4%
Fresh or frozen fish (excluding portion:	1.3%	0.9%
Salmon	0.6%	
Other sea fish	0.4%	
Canned Fish	0.5%	0.5%
Salmon	0.2%	
Tuna	0.2%	
Other canned fish	0.1%	
Other marine products	0.7%	0.8%
Shrimps and prawns	0.4%	0.4%
Other shellfish and marine products	0.3%	0.4%

Note that categories may not add to sum due to rounding

Data Source: BC Stats & Statistics Canada

### 10.1.3. Household consumption by product

In British Columbia, 28% of households reported purchasing fish and other marine products from stores locally and on day trips. Fresh and frozen fish was purchased by 13.5% of households, with 5.1% purchasing salmon. Canned fish was purchased by 11.0% of households, with tuna (6.5%) and salmon (3.5%) accounting for most of the expenditure.

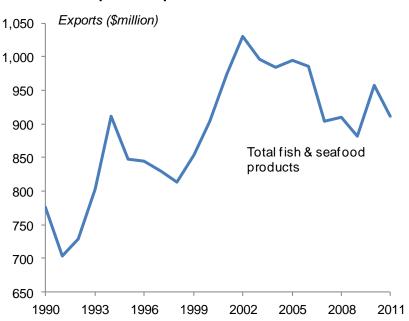
A survey conducted by Abacus Data in 2011 polled Canadians on their finfish and shellfish consumption habits. Of respondents in British Columbia, 73% said they had consumed finfish one to five times per month in the previous three months, 20% of respondents reported six to ten such occasions, and 4% consumed finfish over ten times. Those who consumed no finfish accounted for 5% of respondents.

The same survey found 28% of British Columbian respondents had consumed shellfish one time, 18% two times, 22% three to five times, and 12% over five times per month in the past three months. Those who consumed no shellfish accounted for 20% of respondents.

# 11. International Trade in Fish & Seafood Products

## 11.1. Exports

#### Fish and seafood product exports were down to \$911 million in 2011



Data Source: Statistics Canada & BC Stats

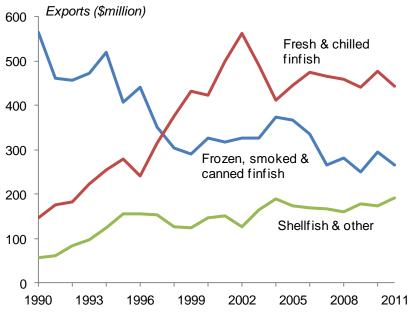
The figures presented in this section only include exports of goods produced by the capture fishery, aquaculture and fish and seafood processing industries. The data are based on administrative information obtained from Canadian and US customs documents. The estimates do not measure the value of sport fishing exports or imports (i.e., revenues generated by non-resident anglers in BC in the case of exports, and BC anglers who fish outside the province in the case of imports).

### 11.1.1. Fish and seafood product exports

Exports of British Columbia fish and seafood products—live fish, fresh/chilled fish and frozen or processed fish and seafood products—declined to \$911 million in 2011 (-4.8%), but remained 3.3% higher than in 2009<sup>14</sup>. Exports of processed and frozen finfish, which historically accounted for the bulk of the province's fish and seafood exports, have been declining and fresh and chilled finfish now make up a bigger share (49%) of total exports than frozen, smoked and canned finfish products (30%). Shellfish and other seafood products made up 21% of the total value of BC's fish and seafood exports in 2011.

<sup>&</sup>lt;sup>14</sup> The value of product that is imported and subsequently re-exported is not included in export figures.

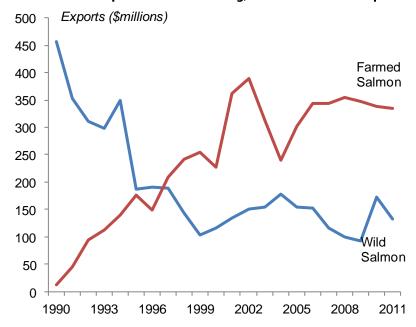
# Fresh and chilled finfish are becoming an increasingly important source of export dollars



Data Source: Statistics Canada & BC Stats

This shift reflects the growing importance of the province's aquaculture industry. Many farm-raised fish are marketed and sold fresh, dressed or filleted, rather than canned or frozen.

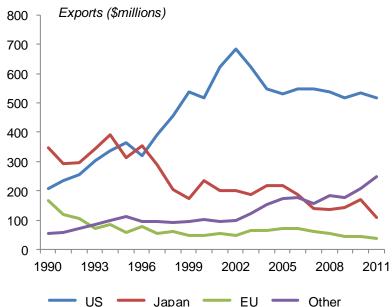
#### Farmed salmon exports have been rising, while wild salmon exports have fallen



Data Source: Statistics Canada & BC Stats

As has been the case since the late 1990s, the United States is the largest foreign purchaser of BC fish and seafood products, with more than half (57%) of the province's international shipments of fish and seafood products destined for use in the United States in 2011. Japan's share of the export market has fallen in recent years to 12%, now below the share of other destinations (27%). Just 4% of BC's fish and seafood product exports were shipped to the European Union in 2011.

Included in the value of other destinations, countries emerging as new or growing markets in the past decade to note include China, Russia, and South Korea. The value of product exported to China has risen steadily, with export levels now over four times what they were in 2000. Since 2003, exports to Russia have been on the rise, enduring short periods of fluctuation, now placing Russia as the country receiving the fifth largest share of domestic fish and seafood product exports, up from the twenty-seventh in 2000. Exports to South Korea showed promise in the early half of the decade, then declined for several years; however, since 2008, exports to South Korea have increased steadily, with the value in 2011 totalling nearly seven times the value in 2000.



The US is the biggest market for BC's fish and seafood exports

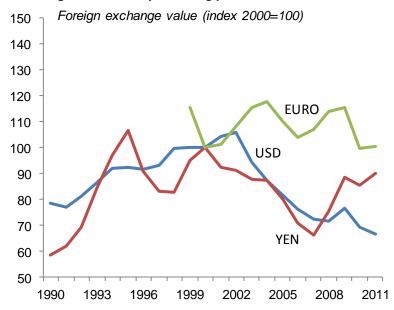
Data Source: Statistics Canada & BC Stats

## 11.2. Imports

International imports of fish and seafood products consumed in BC increased 8.6% to \$560.2 million in 2011. This was an increase of 14.1% over the 2000 value of \$490.8

million. It is important to note that these figures are in Canadian dollars and have not been adjusted to remove the effects of changes in the value of the Canadian dollar relative to other currencies. The chart below illustrates the fluctuations of currency exchange values for British Columbia's major trading partners, relative to the Canadian dollar over the period.

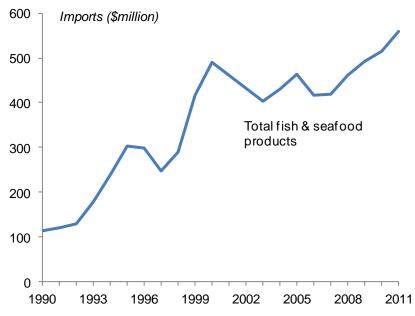
#### The exchange values of major trading partners' currencies have fluctuated



Data Source: Statistics Canada & BC Stats

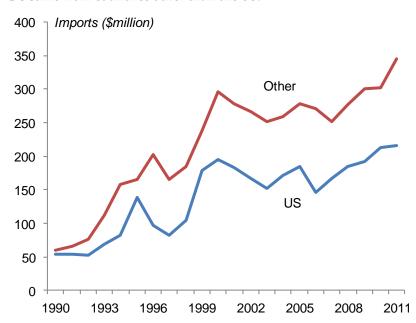
The value of fish and seafood products imported from the US increased from \$195.5 million to \$215.4 million between 2000 and 2011. Japan (\$3.9 million) and the European Union (\$16.2 million) shipped comparatively little in the way of fish and seafood products to BC in 2011, but imports from other countries were valued at \$324.8 million.

# After declining in the early 2000's, fish and seafood product imports are once again on an upward path



Data Source: Statistics Canada & BC Stats

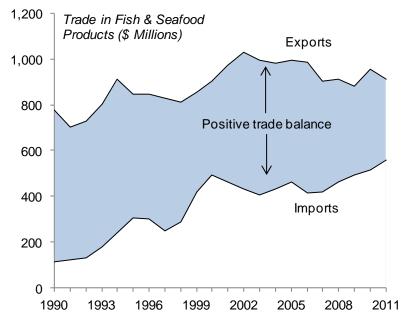
## Most of the fish and seafood products imported and consumed in BC come from countries other than the US.



Data Source: Statistics Canada & BC Stats

Most (59%) of the fish and seafood products imported and consumed in the province enter the country after being frozen or processed (canned, smoked, cooked, or otherwise preserved). Some BC seafood processers import unprocessed fish and seafood products as

an input of production, and subsequently export the processed product; however, data on the extent to which this occurs is unavailable. Of the \$560.2 million of imported fish and seafood products consumed in 2011, most was either frozen (\$209.0 million) or processed (\$121.9 million). Fresh finfish imports were estimated at \$84.4 million, including \$38.4 million of fresh salmon.



Data Source: BC Stats & Statistics Canada

BC exported \$351.1 million more fish and seafood products in 2011 than it imported from other countries. The trade surplus has declined in recent years, as the value of imports has risen steadily since 2006

The province's trade surplus with the US was \$302.2 million in 2011. BC also had a substantial surplus in its trade with Japan (+\$104.9 million) and the European Union (+\$21.6 million). However, the province continued to have a deficit in its trade in seafood products with other countries (-\$77.7million).

### 12. Location Counts

#### A note on locations

BC Stats compiles location counts from Statistics Canada's "Canadian Business Patterns", an extract from the Business Register. The counts exclude unincorporated businesses, businesses that do not submit employee payroll remittances to Canada Revenue Agency (CRA), or those which earn less than \$30,000 in revenue. Each location is categorized according to the North American Industry Classification System (NAICS), of which industries have been selected and grouped to form the categories presented here. The capture fishery consists of establishments classified as NAICS 1141, both salt water and inland fishing. Aquaculture and Fish and seafood processing have their own categories, NAICS 112510 and 311710 respectively.

The 2006 edition of this report utilized the concept of an "establishment" instead of a location. Statistics Canada started reporting only locations after 2008. A location is more narrowly defined than an establishment; it must conduct business from a single physical location or group of locations within the smallest standardized geographical area. An establishment could have multiple locations within BC.

## 12.1. Fishing industry locations

At the end of 2011, Statistics Canada's Business Register listed 1,942 locations actively engaged in the fishing industry, aquaculture, or fish and seafood processing. This includes 1,643 operating in the capture fishery, 145 in aquaculture, and 154 in fish and seafood processing.

A location is defined in Statistics Canada's Business Register as a production entity conducting economic activity at or from a single physical location or group of locations, residing within the smallest, standardized geographical area, and is able to provide employment data at a minimum.

Locations are classified to an industry based on the activity from which they generate the largest portion of their revenues. For example, an establishment that is mainly engaged in farming salmon, but which also processes the harvested fish would be included in aquaculture (the main source of its revenue) rather than in fish and seafood processing.

<sup>&</sup>lt;sup>15</sup> Contrary to the 2006 report, this report includes establishments with an 'indeterminate' employment classification. These locations do not maintain an employee payroll, and use contract labour, family members, or are owner operated.

The Business Register also indicates that there were 871 boat retailers, guide outfitters and marinas operating in BC at the end of 2011. Putting these numbers into perspective, the total number of businesses in the accommodation industry was 3,338, and there were 12,201 establishments associated with the food and beverage services industry.

A total location count for the sport fishing industry is not available from Statistics Canada sources.

A count of establishments is not a good indicator of the economic activity generated within a particular industry or sector of the economy. For example, in some industries where there are very large capital costs associated with creating a new location, there may be relatively few locations, but the revenues generated by these locations could be substantial. For instance, in the case of accommodation services, a location count would not differentiate between a small bed and breakfast operation in a relatively remote location and a large 300-room hotel in the downtown core of a large city despite the fact that the economic activity generated in these two locations is likely to be vastly different.

## 12.2. Locations by region

Most of the locations coded to the capture fishery are located in Vancouver Island/Coast (47%), followed Mainland/Southwest (39%); another 11% are located in North Coast. Most of the fish and seafood processing locations, on the other hand, are located in the Mainland/Southwest.

**Locations by Region, 2011** 

Locations by Region, 2011						
	Capture	Fish				
	Fishery	Aquaculture	Processing			
Vancouver Island/Coast	774	111	55			
Mainland/Southwest	642	29	87			
Thompson-Okanagan	22	1	0			
Kootenay	7	2	0			
Cariboo	5	0	0			
North Coast	176	1	12			
Nechako	5	0	0			
Northeast	3	0	0			
British Columbia	1,643	145	154			

May not sum to totals due to establishments missing geographic codes

# 13. Input-Output Multipliers

Multipliers for the fisheries and aquaculture sector (per \$ of direct output)

(per \$ of direct output)							
	Direct	Indirect	Induced	Total			
Aquaculture							
Output	1.00	0.80	0.11	1.91			
GDP	0.31	0.28	0.07	0.66			
Household income (includes mixed income)	0.16	0.19	0.04	0.38			
Government revenue	0.06	0.04	0.01	0.11			
Employment (jobs per \$1M)	3.59	3.50	0.74	7.83			
Capture fishery							
Output	1.00	0.49	0.08	1.57			
GDP	0.42	0.14	0.05	0.60			
Household income (includes mixed income)	0.29	0.09	0.03	0.40			
Government revenue	0.11	0.02	0.01	0.14			
Employment (jobs per \$1M)	2.10	1.59	0.54	4.22			
Limpleyment good per while	2.10	1.00	0.04	7.22			
Seafood processing							
Output	1.00	0.52	0.09	1.61			
GDP	0.33	0.32	0.06	0.59			
Household income (includes mixed income)	0.33	0.20	0.00	0.36			
Government revenue	0.20	0.13	0.03	0.38			
Employment (jobs per \$1M)	5.59	2.14	0.66	8.39			
Employment (Jobs per \$1101)	5.59	2.14	0.00	6.39			
Coart fishing							
Sport fishing	1.00	0.22	0.00	4 40			
Output	1.00	0.32	0.08	1.40			
GDP	0.23	0.15	0.05	0.43			
Household income (includes mixed income)	0.18	0.10	0.03	0.31			
Government revenue	0.02	0.02	0.01	0.05			
Employment (jobs per \$1M)	8.25	2.55	0.56	11.36			
Aquaculture, Fishing & Processing							
Output	1.00	0.61	0.11	1.72			
GDP	0.44	0.22	0.07	0.72			
Household income (includes mixed income)	0.26	0.14	0.04	0.44			
Government revenue	0.07	0.03	0.01	0.11			
Employment (jobs per \$1M)	6.09	2.63	0.76	9.48			

These multipliers are based on the assumption that a social safety net is in place, so workers employed by the industry would otherwise be receiving some income from other sources.

It is assumed that 80% of the money earned by workers is respent.

The direct, indirect and induced effects arising from the economic activities of industries within the fisheries and aquaculture sector were calculated using the British Columbia Input-Output model. The model currently in use is based on information from the 2008 input-output tables for the province.

## 13.1. Interpreting Input-Output Results

The **direct effect** measures the actual expenditures made by establishments operating in the sector. This is the appropriate measure to use when comparing the contribution of the fisheries and aquaculture sector with that made by other industries.

Also included in the report is an estimate of government revenue generated by the industry. This revenue is based on the tax structure that has been built into the model. As the model is currently based on 2008 data, the tax structure imbedded in the model basically reflects the situation in that year. Thus, the government revenue figures should be viewed as ballpark estimates.

The indirect effect, which measures the economic activity of industries supplying goods and services to fisheries and aquaculture sector operators, is also identified. In order to understand what this represents, it is necessary to remember that I-O analysis assumes that the expenditure in question represents a net addition to economic output. For example, it is assumed that when a fishing lodge purchases a box of apple juice, the apple juice producer has to increase his production by one box. This means that he buys more apples, sugar, packaging, and so on, in order to produce the juice. In other words, the effect of a change in economic activity trickles down to many different industries in both the goods and service sectors. The indirect effect is simply the total (including second-round effects) of all the increased demand for goods and services used by producers supplying operators in the fishing industry. Note that the indirect effect does not measure additional activity in the fisheries and aquaculture sector; rather, it is a measure of increased activity in all parts of the economy.

The indirect effect (in terms of output, employment and government revenue) is calculated based on the output, or total revenue of the fisheries and aquaculture sector. The indirect employment and government revenue figures are not linked to employment or taxes directly generated by the industry.

The third element in the tables is the **induced effect**, a measure of the impact on the economy of spending by workers employed as a result of the fisheries and aquaculture sector's activities. Their spending has a ripple effect on the economy, as it too results in an increase in the demand for the goods and services that they buy.

It is assumed that there is a social safety net in place so that the income of the previously unemployed workers increases only by the difference between what they are earning and the amount of employment insurance or income assistance they were receiving.

Summing up the direct, indirect and induced effects gives a measure of the total impact of the industry on the economy. This is not to be confused with the size of the industry. It is a measure of all of the economic activity generated in all industries as a result of the sector's activities in the province.

Multipliers for Aquaculture, Fishing & Processing (per \$ of direct output)						
	Direct	Indirect	Induced	Total		
Output	1.00	0.61	0.11	1.72		
GDP	0.44	0.22	0.07	0.72		
Household income*	0.26	0.14	0.04	0.44		
Government revenue	0.07	0.03	0.01	0.11		
Employment (jobs per \$M)	6.09	2.63	0.76	9.48		

<sup>\*</sup> Includes mixed income

Based on the 2008 Input-Output results, for every \$1 million of output (i.e., total revenue) in aquaculture, fishing & processing, an additional \$610,000 is generated in the province by industries supplying goods and services used by the commercial fishing, aquaculture, fish processing and sport fishing industries.

In terms of GDP, a \$1 million increase in output directly adds \$440,000 to the province's GDP, with another \$220,000 generated in supplier industries.

A \$1 million increase in output supports 6 direct jobs, and another 3 jobs in industries supplying goods and services to the sector.

With respect to tax revenues, \$70,000 in direct tax revenue is generated for every \$1 million of output. Further, every \$1 million spent by the sector produces another \$30,000 of additional tax revenue resulting from the activity of supplier industries.

# 14. Appendix I: Methodological Note and Issues

# 14.1. Separating capture fishery from hunting & trapping

Statistics Canada data was the starting point for the estimates reported in this study. However, the agency's estimates of gross domestic product (GDP) and wages and salaries for commercial fishing are reported together with hunting and trapping.

The first challenge was to determine a method for dividing the industry into fishing separated from the hunting & trapping component.

An independent estimate of GDP for the hunting & trapping industry was generated using information on the value of wildlife pelts produced in BC and on the relationship between GDP and output in this industry. Initial GDP estimates for the hunting & trapping and capture fishery industries were prorated to ensure that they were consistent with the published totals from Statistics Canada and a total excluding hunting and trapping was calculated.

In the case of employment, detailed Labour Force Survey data obtained from Statistics Canada were used to produce separate estimates of employment for the capture fishery and the hunting & trapping industry.

With respect to wages & salaries, no adequate source of information was found to help divide the published wages & salaries data for the fishing, hunting & trapping sector. Therefore, wages & salaries presented in this report also include data for those in the hunting & trapping industry. It should be noted that employment in hunting & trapping in BC constitutes a very small proportion of the total fishing, hunting & trapping employment. Therefore, the effect on wages & salaries data is negligible.

## 14.2. Capture fishery

Data on the volume and value of fish landings form the basis of the GDP estimates for this industry. Landed value was used as it conforms most closely to the concepts used by Statistics Canada to define the capture fishery component of the fishing, hunting & trapping industry. It is the most appropriate measure because firms or establishments

coded to this industry should be primarily engaged in catching fish, not turning them into processed products.

Financial returns estimates from various reports produced by ARA Consulting and GS Gislason & Associates Inc. were used to derive GDP-to-output ratios by species. In the case of the salmon fleet, annual estimates of financial returns (from various reports produced by GS Gislason & Associates Inc) were used to derive GDP-to-output ratios. These ratios were then applied to the landed value of the wild salmon catch in order to calculate GDP for the salmon fishery. There was not as much information available for other components of the capture fishery. Financial return estimates for herring, halibut, sablefish, other groundfish, geoduck, prawn & shrimp, crab, and other shellfish were available for 1991 and 1994. GDP-to-output ratios for these two years were derived based on this data. For the more recent years (from 1995 on), ratios for the salmon fishery and for the other major species were adjusted to take into account changes in the cost of the inputs used in production. However, it was assumed that there was no substantial change in the technology used by the fleet (i.e. the relationship between the volume of production and the amount of labour, fuel, and other inputs used by the fleet was stable). The Gislason data was the basis of the estimates for the period from 1990 to 1999.

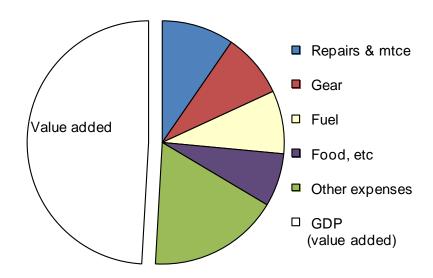
Fisheries costs and returns data from two studies by Nelson Fisheries (in 2007 and 2009) were used to update the GDP to output ratios for the capture fishery, and to expand the GDP data to include additional types of fisheries. The information was supplemented by data from Fisheries and Oceans Canada, which made it possible to allocat fixed costs reported in the Nelson study to specific fisheries. The information was used to determine ratios for the period from 2000 onward, based on the extrapolation method described above.

Generally speaking, the relationship between GDP and output does not change significantly from year to year. The exception to this rule of thumb would be if an industry produced many different types of products, with different associated production costs. In this case, if the product mix happened to change, or if there were advances in technology that significantly altered the way in which a product is produced, it would be incorrect to assume that the relationship between GDP and output was stable. In addition, an event such as the reduction in the stock of salmon available for harvest in the early 1990s (which resulted in more effort being required to catch fewer fish) can affect the GDP to output ratio. Fluctuations in the GDP to output ratio do take place and must be interpreted on a case-by-case basis. Given that the GDP estimates reported

in this document are calculated on a species-by-species basis (where the necessary information is available), any shifts in the relative importance of the major species (such as salmon, herring, or halibut) should be correctly reflected in the estimates.

GDP is not equivalent to operating surplus. Some of the expenditures made by the fleet are not deducted from total revenue in the determination of GDP (e.g., wages paid to crew, the return to operators, and depreciation are all part of the value added, or GDP, of the industry rather than its output).

Data for the salmon fishery in 1995 suggested that approximately half of the value of the salmon catch is a return to labour and capital. This ratio may vary slightly from year to year



Source: GS Gislason & Associates Inc, Salmon Fleet Returns

Using 1995 as an example, about half of the value of the salmon fleet's catch in that year went to pay for inputs used in production: repairs, gear, food, fuel and so on. The remainder represented the value added by the fleet—the return to the labour and capital of the skipper and crew.

Total current dollar GDP for the commercial fishery was calculated as the sum of the GDP estimates for all species.

Constant dollar GDP estimates for each species were calculated using implicit price indices based on the value and volume of fish landings.

In the case of salmon, it was possible to use a slightly more sophisticated method (double deflation) to derive the constant dollar series. The value of fish landings was deflated using the calculated implicit price index for salmon. The cost of fuel, food, repairs, services and gear was deflated using appropriate price indices and GDP was estimated by subtracting the constant (2002) dollar value of these inputs from the value of production in 2002 dollars.

The costs and returns data used to derive the GDP to output ratios does not allow for a precise match with the method used by Statistics Canada, so the initial GDP estimates based on the ratios were used to allocate the total published by Statistics Canada to individual fisheries.

**Revenue** for the commercial fishery is equal to the landed value of fish caught in BC, reported in current dollars.

Information from the 1981, 1986, 1991, 1996, 2001 and 2006 Censuses of Canada was used to determine the percentage of total **employment** in fishing, hunting and trapping (NAICS 114) that was attributable to fishing activities. Until NAICS was introduced in 1996, aquaculture was categorized under NAICS 114, therefore, data from 1996 and prior was calculated by breaking down the total into its component parts (aquaculture and commercial fishing) using unpublished data on employment in aquaculture obtained from Statistics Canada. The commercial fishing component was calculated residually. Data for commercial fishing from 1997 onward has been calculated by taking the residual value present after accounting for the value and volume of wildlife pelts.

**Labour income** for the commercial fishery is based on information from T4 data and the income and expenditure accounts.

## 14.3. Hunting & trapping

Data on the quantity and value of wild pelts produced in BC was obtained from Statistics Canada. The data, which is reported for the period from July 1 to June 30, was converted to a calendar year basis using information on the timing of fur sales supplied by Statistics Canada.

Historically, in the absence of more detailed information (the trapping industry is a small one and there is not a lot of data available), it was estimated that about 30% of the value of fur sales represents costs incurred by trappers. The remaining 70% was assumed to reflect the value added (labour and the return to capital) by the activity. This GDP to

output ratio, which was based on information provided to BC Stats by Statistics Canada, was applied to the value of trapping products produced in BC.

For the current edition of this report, recent trends in hunting and trapping in other parts of the country were reviewed, and the GDP to output ratio was adjusted to reflect changes. The ratio was set to 50% for the post 2000 period.

Constant dollar GDP estimates for the hunting and trapping industry were derived using implicit prices (based on the value of fur production divided by the number of pelts) to deflate the current dollar figure.

Revenue related to hunting and trapping activities is equal to the value of fur production in each year.

Employment estimates for hunting and trapping were derived from census data on the experienced labour force by occupation. Estimates for inter-censal years were linearly interpolated.

Labour data from tax and census files was used to determine the hunting and trapping share of total labour income in NAICS 114.

## 14.4. Aquaculture

There was not as much information available to estimate GDP in the aquaculture industry as in the commercial fishing industry. Various costs and returns studies (dated between 1989 and 1996), combined with Statistics Canada value added estimates for the period from 1997 to 2010, formed the basis of the GDP estimates for this industry.

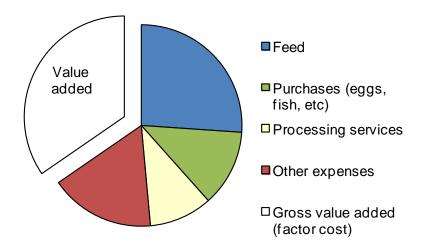
Statistics Canada's 1997-2010 financial data for the aquaculture industry was used as a benchmark for GDP estimates in this industry. However, because there has been considerable change in the nature of BC's fish farming industry since the early 1980s, it did not seem appropriate to use the 1997 GDP to output ratio for the entire period. This became obvious when GDP to output ratios were calculated for the various types of fish and shellfish farms for which costs and returns data were available. These ratios ranged from a low of about 14% for chinook salmon (based on a 1989 study) to a high of about 81% for clams. Therefore, it was necessary to devise a method of estimating GDP that would at least take into account the shift in the product mix of the industry. In 1984, BC's aquaculture industry focussed almost exclusively on the production of shellfish, but salmon farming is now the dominant activity.

The GDP to output ratios for salmon farming were both outdated and inconsistent with other sources of information. Data from the 1997 Statistics Canada survey and other work (e.g., the ARA study of the shellfish farming industry) suggested that the overall ratio for the shellfish portion of the industry should be in the range of 35-40%. Using the GDP to output ratios for salmon farming implicit in the cost and returns data, it would not have been possible to derive a GDP estimate for aquaculture that would have been within a comfortable range of the Statistics Canada figure. Therefore, it was decided to use the ratios from the studies for the shellfish estimates, and modify the salmon farming GDP to output ratio to bring it more in line with information from other sources.

The value of aquaculture production, by species, was obtained from the BC Ministry of Agriculture. GDP to output ratios were calculated for the following species: salmon, rainbow trout, clams, scallops and oysters. In the absence of better information, the ratio for oysters was based on PEI data for the years from 1997 on. Production data for clams, oysters and scallops were adjusted using the appropriate GDP to output ratios. For the remainder of farmed shellfish production, a current-weighted average of the three ratios was used to estimate GDP. The GDP to output ratio for salmon and trout was bumped up from 27% to 33%, bringing it more in line with the 1997 GDP to output ratio in New Brunswick's aquaculture industry, where almost all of the farmed fish is salmon. Moreover, the overall GDP estimate for the aquaculture industry derived in this way was extremely close to the Statistics Canada number for 1997.

Revised estimates for 1997, as well as preliminary data for 1998 and 1999, were released by Statistics Canada after the publication of the first edition of this report. In the 2002 edition, the revised GDP to output ratios were used for the period from 1997 to 2002, but the historical data, which had used information from the previous year's release to generate the estimates from 1984 to 1996, were not changed.

#### GDP and inputs in the aquaculture industry



Source: Statistics Canada

Constant dollar GDP estimates for the aquaculture industry were calculated using implicit price indices based on production data (the value and volume of aquaculture production), by species.

Revenue for the aquaculture industry is equal to the value of production.

**Employment** in this industry was estimated using unpublished data provided to BC Stats by Statistics Canada

**Labour income** estimates for the aquaculture sector are based on information from T4 data.

# 14.5. BC Stats estimates versus Statistics Canada data

The independently derived GDP estimates for commercial fishing, hunting and trapping, and aquaculture (pre-1996) were summed together, and then compared to the official GDP estimate published by Statistics Canada for each NAICS classification. The BC Stats figures track the published totals reasonably well in terms of trends, but there is a persistent gap between the two data sets. The reasons for this gap are not clear. BC Stats' figures have been benchmarked to conform to the Statistics Canada data.

## 14.6. Fish and Seafood Processing

Because the fish and seafood processing industry is a standard industry within the Statistics Canada framework, this industry presented less of a problem than the other components of the province's fisheries and aquaculture sector.

Statistics Canada publishes GDP estimates, in both current and constant dollars, for the fish and seafood processing industry. The GDP figures in current dollars are available only to 2008, while constant dollar estimates cover the whole period from 1997 to 2011. BC Stats derives its own estimates of current dollar GDP for each industry, using methods that mirror, as much as possible, those employed by Statistics Canada. In the case of the fish and seafood processing industry, the constant dollar figures are "inflated" into current dollar estimates using information on price changes for processed fish and seafood products over time.

**Revenue** for the fish and seafood processing industry is equal to the value of shipments as reported by Statistics Canada.

Some of the GDP and revenue data for the fish and seafood processing industry has been suppressed by Statistics Canada. BC Stats has used other published information to derive estimates for the industry. While these numbers are not identical to the actual (suppressed) data, they are based on trends in the national data (excluding information for provinces for which the data has not been suppressed). Since British Columbia makes up a big share of this residual, the method produces numbers which are consistent with published data and fall within an acceptable margin of error.

**Employment** in the industry comes from unpublished Labour Force Survey data provided to BC Stats.

Wages and Salaries in this industry were calculated using information from T4 forms to allocate total wages in the manufacturing sector among its component industries.

## 14.7. The "50% rule" and how it applies

Because there is some overlap between the fish catching and processing industries, it may be useful at this point to describe how an establishment is assigned to a particular industry. It is important to bear in mind that all of this work is based on industry definitions developed by Statistics Canada, as they underlie many of the data series used in this study.

Statistics Canada bases its determination of the industry to which a location <sup>16</sup> is allocated on what BC Stats calls the "50% rule". Simply put, this rule says that a location is assigned to the industry corresponding to its primary activity. If a location operates both a fishing fleet and a fish and seafood processing facility, it will be considered part of the fishing industry if the activity that accounts for most of its output is fishing, and part of the fish and seafood processing industry if its primary activity is fish and seafood processing. In the case of a location that is engaged in two activities, it is allocated to the industry which accounts for more than 50% of its output; hence it is referred to as the "50%" rule.

Based on this method, estimates of GDP, employment, wages and so on for the fishing industry will include some fish and seafood processing activities; conversely, some of the fish and seafood processing estimates will include revenue, GDP, or employment that is related to commercial fishing.

It is worth noting that a fish-farming location that both raises and processes fish would be allocated to the aquaculture sector unless fish and seafood processing is its main activity. However, if a fish farmer (or commercial fisherman) sells fish to a processing outfit, the output, employment, wages and so on related to the fishing activity would be allocated to aquaculture or commercial fishing, while the processing activity would go to the fish and seafood processing industry.

## 14.8. Defining the sport fishing industry

Unlike the commercial fishery, aquaculture, and fish and seafood processing, sport fishing is not a standard industry for which there is a widely accepted definition. Statistics Canada does not include "sport fishing" as one of the industries in the North American Industry Classification System; instead, sport fishing activities are embedded in the data for a number of other service industries.

This is not a problem unique to the sport fishery. The economy is constantly evolving, and new types of activities are gaining importance as consumer tastes and preferences change. Some activities previously not considered important enough or large enough to merit their own grouping are now emerging as major drivers in the new economy (tourism and high technology are two such sectors). It therefore has become necessary to

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 $<sup>^{16}</sup>$  A location is the smallest unit for which statistics such as employment, salaries, sales, shipments or revenue, and expenses are recorded.

disentangle the information related to these sectors from the various industries in which they have been embedded.

The methods used to derive estimates for sectors such as high technology and tourism helped form the framework within which the sport fishing industry was defined. In fact, BC Stats drew heavily on its earlier work when addressing the issue of how to define the sport fishing industry. The first challenge in the previous exercises was to come up with an acceptable definition of the industry.

In consultation with the Ministry of Environment (including the working group for the Sport Fishing Regional Economic Impact Survey<sup>17</sup>) the sport fishing industry was initially defined to include all establishments that sell directly to sport fishermen. The narrowest definition of sport fishing thus includes the following industries, which make direct sales to anglers:

- Angling guides and charter operators;
- Resorts and fish camps;
- Boat rentals and marinas;
- Retail outlets selling directly to sport fishers (e.g., fish and tackle shops, sporting goods stores, boat and outboard motor retailers, and so on);
- Air, rail, water and other transportation industries which transport sport fishermen travelling to and from BC and within the province;
- Hotels, motels, campgrounds, and other accommodation providers; and
- Restaurants, bars, and other food and beverage establishments.

Other activities such as manufacturing and wholesaling were also examined. However, manufacturing and wholesaling outlets were excluded from the definition because they did not sell directly to anglers<sup>18</sup>.

The data underlying the estimates presented here is reported on an industry basis, and it was not possible to disentangle the information for individual establishments. Instead, it

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<sup>&</sup>lt;sup>17</sup> A pilot study undertaken by BC Stats and the Ministry of Fisheries in 1999, which was expanded to cover all regions of the province in 2000.

<sup>&</sup>lt;sup>18</sup> While wholesale activities are not explicitly included in the definition, a small percentage of wholesaling activity is deemed to be tourism-related, and the angler share of this total was included in the sport fishing data.

was necessary to determine what share of the total activities of each industry should be assigned to sport fishing. Therefore, the "50% rule" could not be applied. Instead, it was necessary to devise a method for determining an appropriate sport fishing share for the various industries that sell directly to anglers.

The relationship between sport fishing and the tourism sector complicated the issue. Many sport fishing activities are also tourist activities, as anyone who travels 80 kilometres or more from their home for business, pleasure, or to visit friends or family, is considered a tourist. In order to ensure consistency with the previously published tourism estimates, data for the sport fishery was linked to these numbers.

# 14.9. Relationship between sport fishing and tourism industries

Tourism GDP estimates are generated by allocating a (usually fixed) percentage of the total GDP for each service-producing industry to tourism. For example, it is assumed that nearly all (99.5%) passenger air transportation is tourism-related. These tourism ratios vary from industry to industry. They are highest in the transportation, accommodation and food services industries, and lowest in industries where there is a relatively small tourism component (for example, about 2% of the activity of garages is estimated to be tourism-related). Certain service industries (e.g., doctors' offices) are deemed to have no tourism-related component, so the tourism ratio is set to zero.

Some sport fishers do not travel 80 kilometres or more from home in order to fish. Their expenditures on fuel, sporting goods and equipment (including boats) have been explicitly included in these estimates, but some tourist-type spending by non-tourists anglers may be under-estimated in this data. However, it should also be noted that the tourism GDP estimates include a business travel component, which might be quite substantial. By allocating a percentage of tourism activities to sport fishing, we are de facto overestimating the impact the sport fishery has, as some of tourism activities are related to business, not recreational, travel. At present, an estimation defining the proportions of tourism motivated by business and recreation is unavailable.

### 14.10. Determining sport fishing shares

Freshwater and saltwater angler expenditures for each year were calculated by multiplying data on the total number of angler licences sold by average expenditures from the five-yearly Fisheries and Oceans Canada angler surveys. Expenditures included all direct angling expenditures (food and lodging, transportation, fishing services, fishing supplies and equipment, packages and other expenditures), plus major purchases (e.g., vehicles, boats and so on) that were wholly attributable to angling. Purchases that were only partly attributable to angling were excluded from the estimated expenditures.

For the years between surveys, average angler expenditures for each relevant expenditure category (as outlined above) were linearly interpolated. For the period from 2000 on, price indices corresponding to the goods and services in each category were used to extend the average expenditure data. This assumes that changes in the average amount spent by each angler are due to price rather than behavioural changes. These average expenditure estimates were then combined with data on the number of fresh and tidal water angling licences sold in each year to create a time series of expenditures for the major categories. Expenditure estimates were generated for both freshwater and saltwater anglers.

The derived time series was then compared to other data on spending by individuals, which comes from the provincial economic accounts. Detailed data on personal spending on goods and services were aggregated into groups that corresponded to the categories used in the expenditure survey. For example, transportation was defined to include motor vehicle maintenance services, parts, fuel, air, rail, bus, water and other transportation, plus vehicle rentals. Similarly, food and lodging corresponds to total spending on accommodation, and at restaurants, taverns and bars. Expenditures on fishing supplies and equipment were compared to total spending on sporting and camping equipment, while fishing services were compared to total expenditures on recreational services. Data on purchases of vehicles and equipment were also compared to the derived expenditure figures.

In most cases, the relationship between sport fishing expenditure estimates based on the Fisheries and Oceans Canada survey and personal expenditure data fell within the bounds of what might be expected. For example, estimated angler expenditures on food and lodging were approximately 3% of total food and lodging costs in BC for 1999. This was consistent with other data on angler activity. However in some cases, the percentages based on this methodology were too high to be realistic. Using this method, the sport fishing component of total spending on boats and aircraft would have exceeded 100% in certain years.

The ratio of survey-based expenditure estimates to total personal spending in BC was used to allocate industry totals for:

- air and water transportation, plus vehicle rentals;
- motor home and travel trailer retailers;
- gasoline service stations, auto parts and garages;
- sporting goods;
- accommodation; and
- food and beverage services.

For air and water transportation, accommodation and food and beverage services, sport fishing estimates were determined by applying the appropriate expenditure ratio to the tourism component of each industry.

For retailers of boats and accessories, sporting goods, gasoline service stations, and boat rentals and marinas, the sport fishing estimate was based on total activity (tourism and non-tourism related) in the relevant industry. This was done in order to capture expenditures made by sport fishermen who might not have to travel 80 kilometres or more from home in order to fish. It was assumed that: 50% of boat purchases and 50% of marina and boat rental activities were related to sport fishing. For gasoline, the "transportation" ratio derived from the angler expenditure data was applied to the total for gas stations.

Both tourist and non-tourist anglers purchase sporting goods such as rods or reels in order to engage in their sport. However, the sport fishing ratio implicit in the angler survey was too high to be realistic, given that this category includes everything from athletic clothing and footwear to playground equipment, and equipment for sports such as golf, hockey, or skiing. The expenditure-based ratio was adjusted down in the pre-1992 period to correct for this, but was used for the years from 1993 on 19.

The goal of developing estimates for the sport fishing industry that would be comparable with those for other industries, together with the relationship between sport fishing and tourism, made it necessary to develop a sport fishing proportion for every industry with

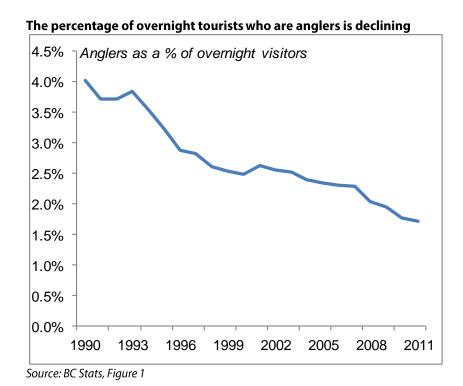
<sup>&</sup>lt;sup>19</sup> In the 2000 edition of this report, the estimates had been modified by applying the ratio only to the tourism component of GDP/employment, etc for sporting goods retailers. However, this significantly under-represented the angling share, relative to what other data suggest would be appropriate.

a tourism component. This is because it did not make sense to allocate part of the activities of, say, a food retailer, to tourism and ignore the fact that some tourists are also sport fishers.

An estimate of the percentage of tourists that are sport fishers was derived using data on angling licences, information from the Canadian Travel Survey, and Tourism BC's estimates of visitor volumes and revenue.

#### It was assumed that:

- 80% of Canadian residents (including residents of BC) who bought angling licences in BC were on overnight trips. This figure was derived by comparing the number of visitors making overnight trips with an estimate of anglers, based on information from the Canadian Travel Survey on the number of Canadians travelling within Canada who said that fishing was one of the activities in which they participated.
- Every non-Canadian who purchased an angling licence in BC was on an overnight trip to the province.



This information was used to generate annual estimates of the percentage of overnight tourists who were also anglers. The ratios were also generated for both freshwater and saltwater anglers.

For all activities included in Tourism GDP but not mentioned in the previous section, the percentage of tourists who were also anglers was applied to the tourism data for the appropriate industries.

The overall estimates of GDP, revenue, employment or wages for this industry were calculated by summing up the sport fishing components for all industries.

# 14.11. Commercial fishing boats versus those used in the sport fishing industry: why are they treated differently?

A major cost incurred by fish boat operators is for capital equipment: the boats and other gear that they need in order to harvest the fish. Similarly, a fish farmer uses pens, nets and other equipment. And a fish and seafood processing firm must also invest in capital equipment before it can begin operations. The initial capital outlay required to purchase this equipment is large, but because it usually has a long life span, the cost is amortized over several years. In other words, the cost of the equipment is treated as an annual expense over its expected lifetime rather than as a one-time purchase by the business.

The initial cost is incurred because the equipment is used to generate income. A producer who purchases a piece of equipment expects that the price received for his/her product will cover its amortized cost. In economic accounting, an estimate of the value of the income generated by the equipment is included in GDP, in the same way that the value of the work done by an employee is.

One way of looking at this is to say that the owner of the boat expects to earn enough income over time to pay for the boat. Presumably, the value of the boat represents the expected income stream arising from its use, and a portion of this value—the depreciation on the equipment—is included in the GDP figure for each year in the life of the equipment.

In the commercial fishing industry, the income accruing to capital is amortized over the life of the equipment. This is because the equipment is purchased—just as labour is—as one of the inputs needed to produce the product. In other words, the value of a boat purchased by a commercial fisher in the province shows up in the GDP of the fishery over the period of its expected life.

If an establishment that caters to sport fishers purchases a boat, it would be treated in a similar manner. It would be viewed as a capital purchase required for doing business whose cost is amortized over the life of the asset.

In the sport fishing industry, boats, gear and other equipment purchased by individual sport fishers are viewed somewhat differently. They are final products, not inputs into a production process. Owning and using them is part of the sport fishing experience, just as owning and using skis is part of the skiing experience. Boats and gear purchased by sport fishers represent a consumer purchase. Their value is reflected in the GDP of the industries that produce and market them in the year in which they are purchased.

The definition of the sport fishery adopted in this study includes establishments which sell directly to sport fishers, plus those in the tourism sector (e.g., souvenir stores, or museums) which may benefit from the presence of sport fishers in the province. Using this definition, the activity associated with the manufacture of boats or gear is not included in the value of the sport fishery. However, boat retailing activities are, because the retailer deals directly with the sport fisher.

## 15. Appendix II: Data Sources

#### 15.1. Gross Domestic Product

The GDP data used to derive the estimates in this report comes from Statistics Canada's Industry Accounts Division. Summary statistics are available from Statistics Canada's freely available electronic database, but more detailed unpublished information was used by BC Stats. Estimates for the commercial fishing, aquaculture, fish processing and sport fishing industries were derived from these numbers. Commercial fishing and aquaculture data are based on the Statistics Canada estimates of GDP in the fishing and trapping industry. GDP in fish processing is obtained directly from Statistics Canada. Finally, the GDP estimate for the sport fishing industry was derived based on sport fishing's share of the output of various industries where there is a sport fishing or tourism-related component. Specific data sources are identified below.

- The value and volume of the commercial catch, from the Ministry of Environment and Fisheries and Oceans Canada.
- The value and volume of aquaculture production, from the Ministry of Environment and Statistics Canada.
- Data on revenue and expenditures of the fishing fleet, from various reports prepared by ARA Consulting and GS Gislason & Associates Inc.
- Financial statistics relating to aquaculture production for 1997-2010, from the Agriculture Division of Statistics Canada.
- Cost and return studies for finfish and shellfish farming, and various Ministry of Environment reports.
- Total angling licence sales, freshwater (BC Fisheries) and saltwater (Fisheries and Oceans Canada) anglers.
- Spending estimates from the 1980, 1985, 1990, 1995, 2000, 2005 and 2010 surveys of recreational anglers, Fisheries and Oceans Canada.
- Data on characteristics of tourists, from the Canadian travel survey.

- Data on tourism volumes and revenue, from Tourism BC, supplemented by information from Statistics Canada for earlier years.
- Tourism GDP estimates, and tourism proportions from BC Stats' tourism accounts.
- Room revenue by accommodation category, from BC Stats' tourism room revenue report.
- Personal expenditure estimates (by type of expenditure) from the Income and Expenditure Accounts Division of Statistics Canada (unpublished data).
- Revenue data from various Statistics Canada surveys, including annual and monthly
  surveys of retail and wholesale trade, annual surveys of transportation (air, rail, bus,
  shipping) and communication industries, accommodation services, food and
  beverage services, leisure and personal services, and the business service industries.

#### 15.2. Revenue

Data sources used to calculate revenue include:

- Value of fish landings, from the Ministry of Environment and Fisheries and Oceans Canada.
- Value of aquaculture production, from the Ministry of Environment and Statistics Canada.
- Shipments of processed fish and seafood products, from the annual and monthly Surveys of Manufacturers conducted by Statistics Canada.
- Revenue for the sport fishing industry is based on the same information that is used to derive the GDP figures.

## 15.3. Employment

Employment estimates are based on information from Statistics Canada's Labour Force Survey, including both published and unpublished data. However, employment estimates for the sport fishing industry are based on the tourism employment figures, which come from the Survey of Employment, Earnings and Hours.

## 15.4. Wages and salaries

Labour income estimates come from the Income and Expenditure Accounts Division of Statistics Canada. They are based on Canada Revenue Agency records from T4 slips. Because Canada Revenue Agency data is not available until about a year and a half after the end of the reference year, data for the most recent year(s) is estimated by Statistics Canada using information from the Labour Force Survey. Once the Canada Revenue Agency numbers are available, the estimates are recalibrated.

### 15.5. Exports and Imports

- Data on exports of fish and seafood products are based on information provided to BC Stats by Statistics Canada. It is compiled from export documents filed at Canadian customs ports or, in the case of exports to the US, from import data provided by American authorities.
- Import estimates were calculated using data on imports clearing customs in BC. These estimates were adjusted using information from the BC Input-Output model and the Interprovincial Trade Flows project to exclude imports entering the country via BC, but destined for use elsewhere. The import figures are therefore intended to show the value of imported fish and seafood products consumed in BC.

# 15.6. Consumption of fish and seafood products

Retail spending estimates are from Statistics Canada's Retail Commodity Survey. Estimates of household food expenditure and consumption by product are based on information provided in Statistics Canada's Food Expenditure in Canada Survey and Survey of Household Spending. Information in the ABACUS Seafood Survey: Public Opinion on Aquaculture and a National Aquaculture Act provided estimates of frequency of consumption by type of fish and seafood.

#### 15.7. Location Counts

The location counts presented in this paper are derived from Statistics Canada's business register.

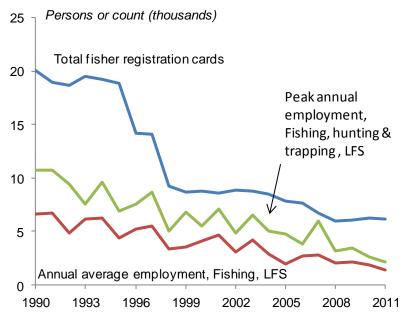
# 16. Appendix III: Measuring Employment in the Capture Fishery

# 16.1. Measuring employment in the commercial fishery: conflicting estimates?

Employment figures measure the amount of labour used by a given industry in order to produce its output. They are not meant to be counts of every person who spends time working in the industry during a given period.

According to Fisheries and Oceans Canada, which requires all participants in the commercial fishery to hold a valid a Fishers' Registration Card (FRC), there were 6,121 people in British Columbia eligible to fish commercially in 2011, the latest year for which this information is available. This is over four times the number (2,200 for fishing, hunting & trapping) reported in Statistics Canada's Labour Force Survey. This difference between the number of people holding FRCs and the number of people counted in the Labour Force Survey has persisted throughout the study period. There are a number of reasons why these differences exist.

## The number of eligible fishers in the province is significantly higher than estimated employment



Source: Statistics Canada, Fisheries and Oceans Canada

A fisher must hold a valid FRC even if he/she only participates in the fishery for a few days of the year. Because the period during which it is possible to commercially harvest the stock of seafood is limited by the availability of the stock, and by fishery regulations surrounding openings and closures of the season, some of the people who work in the fishery do not earn a living at this activity year-round. Some fisheries are open for only a few days, while others have a longer harvesting period. Individuals are obliged to obtain an FRC regardless of how much time they spend working in the commercial fishery. Some individuals who hold valid FRCs may fish only for a very short period, in only one fishery or only at certain times of the year.

People who hold more than one job are considered to be employed in the industry in which they spend most of their time working. The Labour Force Survey is a monthly survey of households. Respondents are asked to identify which industry they either worked or were looking for work in during the reference week. If they hold more than one job during the reference period, they are considered to be working in the industry in which they spend most of their time on the job. This means that multiple jobholders who spend less time fishing than working in other industries are not included in the employment statistics for the commercial fishery.

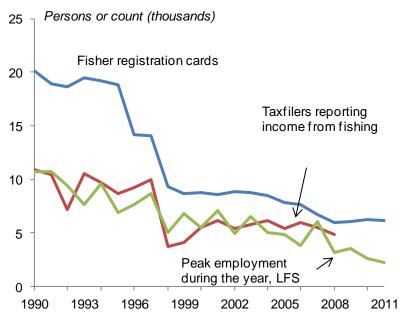
Employment in the fishery is highly seasonal. Annual employment figures are calculated as averages of the monthly data. Monthly employment figures from the

Labour Force Survey are a count of the number of people who were working in a particular industry during the reference week. Annual employment figures are calculated as averages of the monthly data.

# 16.2. Peak employment levels are closer to the FRC counts...

Since there is such a marked seasonality in the data, and since the number of FRCs indicates the maximum number of people potentially working in the commercial fishery during the year, a more valid benchmark for comparison with the FRC numbers would be the yearly maximum from the Labour Force Survey data. Monthly data by individual industry is unavailable, however, the aggregate monthly data for fishing, hunting and trapping serves as an acceptable proxy, as employment related to hunting and trapping has averaged approximately 1.8% of annual employment, historically. Using this as a basis for comparison, it can be seen that the discrepancy between the two data sets is much smaller than it seems to be at first glance. However, the numbers are still quite different.

## Tax filer data suggests that the Labour Force Survey estimates are in the right ballpark



Source: Statistics Canada, Fisheries and Oceans Canada, Canada Revenue Agency

# 16.3. ...and tax filer data are in line with peak employment levels from the Labour Force Survey

One other source of information, which is a more direct measure of employment than the FRC figures, is tax data. The Canada Revenue Agency reports on the number of people who indicate that they received some of their income from fishing on their annual tax returns.

When the number of tax filers reporting fishing income is compared to the annual maximum for the commercial fishery, it can be seen that in most years, the numbers are of the same general magnitude. This confirms that the employment data published by Statistics Canada is generally consistent with information obtained from tax records.

## 16.3.1. What is the best measure of employment in the commercial fishery?

For most industries, sample sizes in the Labour Force Survey are adequate and the methodology ensures that the numbers are robust. However, in the case of relatively small industries such as the capture fishery, sampling error is relatively more significant in changes from month to month. The use of annual averages should theoretically correct for variations in the sample from month to month, but data for every industry should be viewed as an approximate figure rather than an exact number.

Annual averages give the best indication of the amount of labour used by each industry. For example, if one industry employs 12,000 people full-time for one month of the year, and another industry employs 1,000 full-time workers each month, the total amount of labour used by both industries is the same. The first industry has simply concentrated its efforts into one month of the year rather than spreading them over all twelve.

The use of annual averages thus ensures that employment comparisons among industries are consistent, in that seasonal fluctuations in the data are averaged out. However, it should be noted that the use of annual averages does not take into account variations in the actual number of hours worked. It only smoothes out the seasonal fluctuations in different industries so that the yardstick used to measure employment is the equivalent of a year-round job. This is another reason why the employment figures for the commercial fishery are lower than may have been reported elsewhere.

Monthly data, which show variations from season to season, is better able to illustrate the movement of people into and out of employment in an industry such as the commercial fishery than are annual figures.

The number of Fishers' Registration Cards indicates how many people could potentially be working in the commercial fishery at some point during the year. It does not distinguish between people who spend only a few days working in the fishery and those for whom fishing is a full-time, year-round occupation.

Similarly, data on the number of tax filers who indicate that they have received some income from fishing is not necessarily a good measure of employment in the industry, since the income could be derived from only one day or from 365 days of fishing effort during the year.

#### Other Measures of Employment

Employment estimates presented in other studies of the commercial fishery and fish and seafood processing industries may differ from the numbers in this report because they use different data sources. In addition, they often measure full-time equivalents rather than simply counting the average number of employees in a given year.

Full-time equivalents (FTEs) are better measures of the amount of effort expended in the industry, since they differentiate between part-time jobs and full-time employment. However, FTE measures are not available for all industries. In this study, a simple count of the average annual number of jobs has been used, making it possible to compare employment in the sector with the number of jobs in other industries.

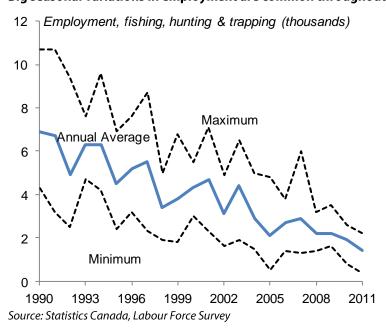
## 17. Appendix IV: Seasonality of Employment

# 17.1. Seasonal industries and annual employment figures

Many industries, including agriculture, forestry, retailing, education and fishing show marked fluctuations in employment from month to month in any given year. As such, there may be a substantial difference between the estimated number of people working during a given month and the stated annual employment figure for the industry.

Take, for example, the capture fishery. In 2011, employment in the capture fishery peaked at 2,200 in September, but dropped to just 400 in November and December. Therefore, the annual average employment figure of 1,400 may be considered an unexpectedly low number for those more familiar with peak levels of employment in the industry. This difference is bound to appear given the fact that activity, and thus employment, in the capture fishery is very seasonal and strictly managed by species-specific conservation policies.

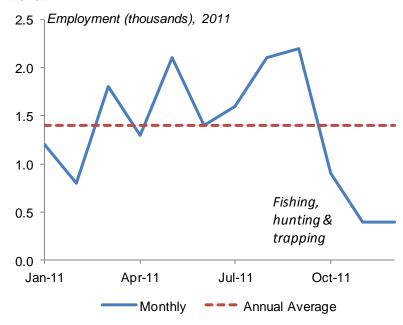
#### Big seasonal variations in employment are common throughout the period



The fluctuation in employment levels as illustrated during 2011 is not uncommon. In any given year, the maximum number of people working in the fishery during a single

month can be more than double the annual average for that year. Similarly, the minimum employment level during the year can be as little as a quarter of the annual average.

## The number of workers in the capture fishery can vary significantly from month to month



Data Source: Statistics Canada, Labour Force Survey

In order to help explain the clear and often vast difference between the monthly and annual employment estimates, it is important to consider the way in which industry level employment data are calculated. The Labour Force Survey is a monthly survey of households. Respondents are asked to identify which industry they either worked in, or were looking for work in, during a reference week. An individual who, say, was employed in the fish processing industry for ten months of the year and in the capture fishery for two months during the summer would only be counted as employed in the capture fishery for those two months of the year. Furthermore, if they hold more than one job during the reference period, they are considered to be working in the industry in which they spend most of their time on the job. This means that holders of multiple jobs who spend less time fishing than working in other industries are not included at all in the employment statistics for the capture fishery for that month.

## 18. Appendix V: Statistical Tables

Table 1: Real gross domestic product at basic prices (chained \$2002 million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Capture Fishery																						
Salmon	116.6	85.8	64.2	96.7	73.2	29.3	20.9	22.5	12.9	5.9	6.8	5.4	9.5	9.6	10.9	10.0	9.0	6.7	2.8	8.2	11.0	9.3
Seine	31.1	23.0	14.3	23.1	13.9	6.5	4.7	6.8	5.6	2.9	2.5	2.2	3.2	3.6	2.8	4.2	2.0	3.2	0.4	4.8	3.9	4.0
Gillnet/Troll	85.5	62.8	50.0	73.6	59.3	22.7	16.2	15.7	7.3	3.0	4.3	3.3	6.3	6.0	8.1	5.8	7.0	3.5	2.4	3.5	7.1	5.3
Groundfish	99.7	101.4	95.4	113.2	85.5	65.7	68.5	82.2	62.5	50.0	55.1	39.6	48.8	44.2	51.1	58.3	66.1	47.4	40.6	36.7	33.5	38.9
Halibut	15.2	12.9	13.7	23.0	17.5	14.8	18.1	24.9	15.7	14.7	16.9	12.2	18.0	15.0	15.8	17.2	21.9	16.6	13.3	11.3	11.1	13.5
Sablefish	31.8	32.7	30.6	35.9	27.6	20.8	16.6	21.9	17.2	12.5	14.8	8.5	8.5	7.5	9.4	15.9	15.9	10.9	8.6	7.2	6.6	8.1
Hake	5.6	6.9	6.5	4.4	6.8	3.7	7.6	8.1	6.1	3.9	1.5	2.6	3.4	2.6	5.7	5.8	8.0	4.5	5.1	4.0	4.1	3.6
Rockfish	10.6	9.0	9.9	9.6	6.8	6.2	6.9	9.7	8.2	7.5	8.6	7.1	7.8	7.1	6.6	5.9	6.8	6.6	6.0	6.1	4.2	5.1
Other groundfish	36.5	39.9	34.8	40.2	26.9	20.1	19.2	17.7	15.2	11.4	13.2	9.2	11.0	12.1	13.7	13.5	13.5	8.7	7.5	8.0	7.5	8.6
Herring	40.7	40.6	35.3	48.9	38.7	26.6	27.3	58.6	29.2	19.5	20.8	17.7	22.6	21.9	19.7	21.8	23.0	11.2	9.3	9.3	6.8	7.2
Geoducks & clams	69.1	52.9	46.3	48.5	37.4	31.8	29.3	31.1	23.6	19.8	23.4	18.3	23.3	19.0	22.5	20.7	25.2	21.8	19.7	18.2	17.0	17.4
Prawns & shrimp	4.9	7.3	6.8	9.6	8.0	10.8	13.8	14.7	9.0	6.8	9.5	8.8	8.4	10.0	9.3	10.3	14.2	11.6	8.3	13.4	7.3	10.5
Crab	8.4	7.0	12.2	27.7	21.1	15.6	17.5	16.4	9.2	7.7	8.4	12.4	11.2	15.4	21.2	13.0	12.7	16.0	13.2	10.1	8.9	7.3
Other	7.0	8.7	15.5	10.6	8.1	7.8	8.0	9.6	6.3	7.4	10.8	8.7	10.2	9.6	14.2	10.1	11.6	10.1	10.5	10.0	10.8	11.7
Tuna	0.4	0.2	0.7	0.8	0.8	1.1	0.6	1.0	0.6	3.7	5.5	5.2	5.3	6.0	8.1	4.8	8.1	7.6	4.5	5.2	5.5	4.6
Capture Fishery Total	346.4	303.7	275.8	355.3	272.1	187.6	185.2	235.0	152.8	117.0	134.7	110.9	134.0	129.6	148.9	144.3	161.7	124.7	104.4	105.8	95.2	102.3
Aquaculture																						
Salmon	14.7	23.3	18.3	23.0	20.6	23.7	24.2	30.7	24.2	33.4	39.7	56.9	58.2	54.6	48.6	54.2	64.3	68.1	68.7	59.5	63.1	58.5
Shellfish	2.1	2.5	2.9	3.1	3.8	4.9	5.6	3.5	3.2	3.8	5.2	8.2	8.0	10.1	10.8	10.2	10.9	11.7	9.1	8.4	10.3	9.0
Oysters	2.0	2.0	2.0	2.1	2.2	2.3	2.4	1.6	1.9	2.0	2.6	3.9	3.6	4.7	5.1	4.4	5.4	4.6	3.2	2.9	3.7	3.2
Clams	0.1	0.5	0.9	1.0	1.5	2.5	2.7	1.8	1.3	1.7	2.5	4.0	4.1	4.9	5.1	5.2	4.7	5.2	4.1	3.6	3.7	3.3
Other shellfish	0.0	0.0	0.0	0.1	0.1	0.1	0.5	0.1	0.0	0.1	0.2	0.3	0.3	0.5	0.5	0.5	0.8	1.9	1.7	1.9	2.9	2.5
Other	-1.3	-2.1	-1.7	-2.2	-2.0	-2.3	-2.5	-2.6	-0.8	-2.4	-3.0	-0.6	0.2	-0.2	-0.5	-2.5	-3.5	-6.1	-5.8	-5.2	-6.7	-5.6
Aquaculture Total	15.5	23.7	19.5	23.9	22.4	26.2	27.3	31.6	26.5	34.8	41.9	64.6	66.4	64.4	58.8	61.9	71.7	73.7	72.0	62.7	66.7	61.9
Fish Processing	220.8	176.6	168.6	222.6	237.1	192.4	160.5	176.0	145.7	176.8	173.6	219.2	219.8	192.2	193.5	199.6	217.1	191.5	171.8	160.3	175.4	177.5
Sport Fishing																						
Saltwater	202.6	180.0	180.3	184.3	172.7	163.8	157.9	142.5	140.6	137.9	132.8	145.0	145.7	143.7	171.6	166.8	165.8	168.7	175.2	185.4	181.7	182.6
Freshwater	151.5	138.8	139.3	147.2	143.7	140.4	136.8	121.2	122.9	119.4	115.5	119.8	114.8	104.0	126.7	116.7	120.0	124.4	134.4	144.8	144.6	143.1
Sport Fishing Total	354.1	318.9	319.5	331.5	316.5	304.3	294.7	263.7	263.5	257.2	248.3	264.8	260.4	247.7	298.3	283.5	285.9	293.0	309.5	330.2	326.4	325.7
Total, Fisheries & Aquaculture	936.9	822.9	783.5	933.3	848.1	710.4	667.7	706.3	588.4	585.9	598.5	659.5	680.6	633.9	699.5	689.3	736.4	682.9	657.8	659.0	663.7	667.4
All Industries in BC	91,753	92,944	96,094	100,464	104,624	106,247	108,092	111,554	112,913	116,307	121,546	122,848	126,761	130,026	135,021	141,339	146,762	150,874	151,695	148,300	153,085	157,525
Goods-producing Industries	26,471	25,971	26,131	27,068	27,529	27,677	27,424	28,432	27,811	29,145	31,322	30,714	31,664	32,429	34,252	36,334	37,237	37,198	36,575	33,210	35,468	37,466
Service-producing Industries	65,109	66,787	69,743	73,161	76,885	78,387	80,558	82,997	85,038	87,073	90,128	92,061	95,097	97,599	101,026	105,217	109,809	114,098	115,667	115,874	118,386	120,785

Table 1a: Real gross domestic product at basic prices (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	201
Capture Fishery																						
Salmon	21.1	-26.4	-25.1	50.6	-24.3	-60.0	-28.6	7.6	-42.6	-54.6	16.3	-20.2	74.7	0.8	13.7	-7.8	-10.5	-25.7	-57.7	191.8	33.0	-14.9
Seine	25.1	-26.1	-38.0	62.0	-39.8	-53.0	-28.1	44.3	-17.3	-48.5	-12.6	-14.6	49.7	11.7	-23.1	52.4	-52.8	59.2	-86.6	1015.8	-19.0	3.6
Gillnet/Troll	19.7	-26.5	-20.4	47.3	-19.5	-61.6	-28.8	-3.0	-53.6	-59.3	44.4	-23.5	91.2	-4.9	35.9	-28.3	20.2	-50.0	-31.5	45.1	104.0	-24.9
Groundfish	10.6	1.7	-5.9	18.6	-24.4	-23.2	4.2	20.0	-23.9	-20.1	10.2	-28.1	23.3	-9.5	15.7	14.1	13.3	-28.3	-14.3	-9.7	-8.6	15.9
Halibut	-7.8	-15.1	6.0	68.5	-24.0	-15.1	21.9	37.4	-36.9	-6.3	14.7	-27.9	48.3	-16.9	5.5	9.0	27.0	-24.0	-19.8	-15.3	-1.7	21.1
Sablefish	6.1	2.8	-6.6	17.6	-23.1	-24.8	-20.3	32.1	-21.2	-27.5	18.6	-42.4	-0.2	-12.6	25.9	69.6	0.3	-31.9	-20.7	-16.1	-8.5	21.9
Hake	24.3	22.9	-5.3	-32.1	52.4	-45.0	105.7	5.5	-23.8	-36.1	-61.9	74.2	31.1	-24.1	118.2	2.1	38.7	-43.3	12.7	-21.3	0.9	-10.4
Rockfish	40.8	-14.9	10.0	-3.1	-29.4	-8.2	11.5	39.8	-15.6	-8.8	16.0	-17.7	10.0	-9.5	-7.2	-10.0	14.8	-3.0	-8.5	1.5	-31.7	22.0
Other groundfish	15.2	9.4	-12.8	15.6	-33.2	-25.1	-4.6	-8.1	-13.7	-25.5	16.5	-30.7	20.0	9.7	13.4	-1.4	-0.2	-35.1	-14.0	6.4	-5.6	13.7
Herring	14.5	-0.3	-13.0	38.8	-21.0	-31.2	2.4	114.7	-50.2	-33.2	6.7	-14.7	27.6	-3.0	-10.2	10.8	5.3	-51.2	-16.7	-0.6	-27.1	7.2
Geoducks & clams	10.4	-23.4	-12.5	4.6	-22.8	-15.0	-7.9	6.0	-24.0	-16.0	18.1	-21.9	27.6	-18.5	18.4	-8.0	21.3	-13.5	-9.4	-7.8	-6.2	1.9
Prawns & shrimp	-1.5	48.6	-7.2	41.8	-17.3	35.1	27.8	7.0	-38.7	-25.1	40.4	-7.6	-4.5	18.8	-6.9	11.6	37.2	-18.5	-28.0	60.8	-45.6	44.1
Crab	62.0	-17.3	75.6	126.2	-23.6	-26.3	12.3	-6.3	-43.7	-16.5	8.4	48.9	-10.1	37.3	38.2	-38.9	-2.1	26.2	-17.9	-23.7	-11.4	-18.2
Other	10.4	25.0	77.5	-31.5	-23.5	-4.7	2.9	20.0	-33.7	17.2	44.8	-19.5	17.2	-5.9	48.5	-29.0	14.7	-13.0	3.9	-4.7	7.9	9.1
Tuna	121.7	-48.7	279.2	18.6	-4.6	36.9	-42.5	69.0	-39.8	495.6	49.6	-6.1	3.2	11.8	35.8	-40.6	67.6	-5.2	-41.4	17.1	4.5	-15.4
Capture Fishery Total	15.1	-12.3	-9.2	28.8	-23.4	-31.1	-1.3	26.9	-35.0	-23.4	15.1	-17.6	20.8	-3.3	14.9	-3.1	12.0	-22.9	-16.2	1.3	-10.0	7.4
Aquaculture																						l
Salmon	31.7	58.4	-21.3	25.3	-10.1	14.8	1.9	27.1	-21.2	38.2	18.7	43.6	2.2	-6.2	-11.0	11.6	18.6	5.9	0.9	-13.4	6.0	-7.3
Shellfish	22.4	15.6	16.6	9.3	21.7	28.1	15.4	-37.6	-10.0	19.5	38.6	57.1	-2.5	25.4	7.3	-5.9	7.2	7.4	-22.3	-7.5	23.0	-12.9
Oysters		-1.4	0.0	6.1	4.9	5.4	4.2	-33.4	15.0	9.2	27.4	52.8	-8.1	30.5	8.4	-13.4	20.6	-14.1	-29.7	-9.4	26.3	-12.9
Clams		332.5	82.2	12.6	56.2	63.3	10.6	-33.7	-30.1	32.1	49.5	59.7	4.1	17.4	6.0	0.6	-8.7	9.7	-20.0	-13.5	4.3	-12.9
Other shellfish		-	-	181.8	58.6	-3.1	443.5	-80.5	-55.8	102.4	91.8	87.2	-14.7	83.5	8.3	4.4	50.6	138.4	-10.6	11.0	53.8	-12.9
Other	31.0	60.5	-16.3	27.7	-8.5	17.1	5.3	5.7	-67.6	183.1	25.0	-81.3	-134.8	-206.3	160.6	357.1	40.6	75.7	-5.1	-10.1	29.4	-16.8
Aquaculture Total	30.4	52.4	-17.8	22.7	-6.1	16.9	4.1	15.7	-16.1	31.3	20.4	54.2	2.8	-3.0	-8.7	5.3	15.8	2.8	-2.3	-12.9	6.4	-7.2
Fish Processing	-4.3	-20.0	-4.5	32.0	6.5	-18.9	-16.6	9.7	-17.2	21.3	-1.8	26.3	0.3	-12.6	0.7	3.2	8.8	-11.8	-10.3	-6.7	9.4	1.2
Sport Fishing																						l
Saltwater	-1.4	-11.1	0.1	2.2	-6.3	-5.2	-3.6	-9.7	-1.4	-1.9	-3.7	9.2	0.4	-1.4	19.4	-2.8	-0.6	1.7	3.8	5.8	-2.0	0.5
Freshwater	3.4	-8.4	0.3	5.7	-2.3	-2.3	-2.6	-11.4	1.4	-2.9	-3.2	3.7	-4.2	-9.4	21.8	-7.9	2.8	3.6	8.1	7.7	-0.1	-1.0
Sport Fishing Total	0.6	-10.0	0.2	3.7	-4.5	-3.9	-3.1	-10.5	-0.1	-2.4	-3.5	6.6	-1.7	-4.9	20.4	-4.9	0.8	2.5	5.6	6.7	-1.1	-0.2
Total, Fisheries & Aquaculture	4.6	-12.2	-4.8	19.1	-9.1	-16.2	-6.0	5.8	-16.7	-0.4	2.2	10.2	3.2	-6.9	10.3	-1.5	6.8	-7.3	-3.7	0.2	0.7	0.6
All Industries in BC	1.8	1.3	3.4	4.5	4.1	1.6	1.7	3.2	1.2	3.0	4.5	1.1	3.2	2.6	3.8	4.7	3.8	2.8	0.5	-2.2	3.2	2.9
Goods-producing Industries	-3.0	-1.9	0.6	3.6	1.7	0.5	-0.9	3.7	-2.2	4.8	7.5	-1.9	3.1	2.4	5.6	6.1	2.5	-0.1	-1.7	-9.2	6.8	5.6
Service-producina Industries	3.9	2.6	4.4	4.9	5.1	2.0	2.8	3.0	2.5	2.4	3.5	2.1	3.3	2.6	3.5	4.1	4.4	3.9	1.4	0.2	2.2	2.0

Table 2: Nominal gross domestic product at basic prices (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	201
Capture Fishery																						
Salmon	177.8	121.6	127.1	132.3	170.7	42.2	47.8	25.2	16.3	7.2	10.5	4.5	9.5	7.8	11.0	7.6	9.5	6.0	4.9	8.0	23.9	15.2
Seine	84.4	53.1	46.8	60.2	71.9	16.1	16.6	12.2	7.5	3.1	4.5	1.7	3.2	3.2	3.9	2.9	3.6	2.4	1.1	3.7	12.9	7.2
Gillnet/Troll	93.4	68.5	80.4	72.1	98.8	26.1	31.2	13.0	8.8	4.1	6.0	2.8	6.3	4.6	7.1	4.7	5.9	3.6	3.8	4.3	11.0	7.9
Groundfish	64.5	94.3	85.0	83.4	94.2	108.1	85.3	64.1	53.8	52.7	51.4	34.3	48.8	49.1	53.0	55.7	56.8	49.0	44.3	43.1	43.1	49.0
Halibut	15.1	19.9	19.2	26.4	30.0	32.2	26.5	19.8	11.2	13.9	14.7	10.1	18.0	18.8	20.4	19.4	20.7	20.9	16.0	15.0	18.6	21.9
Sablefish	16.2	30.3	24.4	22.0	28.4	32.4	23.2	19.4	14.0	12.1	13.5	7.2	8.5	8.4	7.6	11.9	10.9	8.3	8.2	9.2	8.4	10.0
Hake	5.6	8.2	7.5	4.0	6.5	4.7	6.4	4.6	5.4	3.9	1.5	2.6	3.4	3.1	6.1	6.5	7.4	5.5	7.8	5.5	5.7	5.0
Rockfish	7.6	8.8	9.3	8.0	7.7	10.3	9.9	8.3	9.4	9.8	9.4	6.9	7.8	7.4	6.9	6.1	6.1	6.2	5.3	5.7	4.4	5.1
Other groundfish	20.1	27.1	24.7	23.0	21.6	28.5	19.4	11.9	13.9	12.9	12.3	7.7	11.0	11.3	12.0	11.8	11.6	8.2	7.0	7.7	6.0	6.9
Herring	58.4	53.5	53.2	71.1	70.2	96.1	100.6	39.9	18.6	21.9	21.4	15.7	22.6	20.4	14.5	14.0	8.4	9.4	7.4	8.7	5.7	1.8
Geoducks & clams	13.6	13.6	19.3	29.7	34.7	52.2	42.2	24.7	20.7	20.0	22.3	17.5	23.3	18.6	19.1	19.2	19.4	19.0	14.7	18.4	23.6	23.4
Prawns & shrimp	5.3	8.2	8.2	8.8	10.1	20.0	24.4	20.8	10.5	9.5	14.1	10.9	8.4	13.9	12.5	19.6	18.3	11.1	8.7	17.3	8.9	17.0
Crab	6.1	7.0	8.7	14.1	17.6	20.8	19.5	16.3	11.0	9.6	8.0	10.1	11.2	13.2	14.8	9.8	8.3	12.4	10.8	10.5	11.2	11.5
Other	5.6	7.4	14.0	10.0	10.4	13.4	14.3	9.0	6.8	8.8	11.6	10.2	10.2	9.9	16.5	11.4	10.1	9.9	7.1	7.6	13.0	17.6
Tuna	0.6	0.3	1.3	1.3	1.1	1.8	1.3	1.1	0.7	4.7	7.2	7.5	5.3	6.4	12.7	8.3	8.1	8.5	6.4	7.6	10.6	13.4
Capture Fishery Total	331.5	305.6	315.4	349.5	407.9	352.7	334.2	200.0	137.8	129.8	139.4	103.3	134.0	132.9	141.4	137.2	130.9	116.8	98.1	113.5	129.3	135.5
Aquaculture																						ı
Salmon	38.3	54.0	56.2	67.2	74.8	82.9	75.9	85.7	84.6	117.1	128.6	109.0	58.2	49.3	35.6	90.0	138.0	143.4	129.6	135.2	188.9	164.5
Shellfish	3.3	3.7	4.3	5.0	6.4	9.4	11.1	7.0	6.9	8.4	13.2	15.9	8.0	9.6	7.3	13.1	16.4	19.7	12.7	13.8	17.5	15.6
Oysters	3.2	3.0	3.1	3.5	4.0	4.7	5.0	3.4	3.7	4.5	6.1	7.4	3.6	4.6	3.4	6.0	7.8	7.7	4.7	5.4	7.0	6.3
Clams	0.2	0.6	1.2	1.4	2.2	4.5	5.2	3.4	3.1	3.8	6.8	8.1	4.1	4.6	3.5	6.4	7.3	9.0	6.1	6.1	6.8	6.1
Other shellfish	0.0	0.0	0.0	0.1	0.2	0.2	0.9	0.2	0.1	0.1	0.3	0.4	0.3	0.4	0.4	0.7	1.3	3.0	1.8	2.3	3.7	3.3
Other	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.5	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	1.1	1.2	0.7	1.8	2.1
Aquaculture Total	41.9	58.0	60.7	72.3	81.4	92.5	87.2	93.2	91.6	125.7	142.1	125.1	66.4	59.0	43.1	103.4	154.8	164.2	143.5	149.7	208.2	182.2
Fish Processing	252.1	233.8	175.3	241.7	395.7	381.1	252.7	171.6	166.4	209.4	195.2	236.4	219.8	184.0	177.3	194.1	221.0	167.5	161.7	161.0	179.2	183.0
Sport Fishing																						l.
Saltwater	140.7	138.6	136.5	145.7	141.3	141.8	139.3	129.4	129.9	131.7	127.6	142.3	145.7	144.7	177.1	175.3	176.8	183.5	192.0	202.6	202.8	202.7
Freshwater	106.1	107.3	106.2	117.5	118.9	122.5	121.5	110.3	113.5	113.8	110.9	117.6	114.8	104.9	130.6	121.6	126.4	133.1	145.4	157.5	160.1	157.3
Sport Fishing Total	246.8	245.9	242.7	263.1	260.2	264.2	260.8	239.7	243.5	245.5	238.5	259.9	260.4	249.7	307.7	297.0	303.3	316.6	337.3	360.1	362.9	360.0
Total, Fisheries & Aquaculture	872.2	843.2	794.2	926.6	1,145.3	1,090.6	934.8	704.5	639.3	710.4	715.2	724.6	680.6	625.5	669.5	731.7	809.9	765.1	740.6	784.3	879.6	860.7
All Industries in BC	74,185	77,448	81,515	87,719	94,773	99,065	101,865	104,554	105,907	110,806	120,756	122,773	126,761	133,213	144,461	155,534	167,376	176,297	184,559	176,906	187,678	198,128
Goods-producing Industries	21,624	21,080	21,529	23,806	26,636	27,984	27,595	27,806	26,623	29,237	34,555	32,477	31,664	33,517	38,929	43,704	46,240	47,095	49,589	39,700	43,769	47,604
Service-producing Industries	52,560	56,368	59,986	63,913	68,137	71,081	74,269	76,748	79,284	81,569	86,201	90,296	95,097	99,696	105,532	111,829	121,136	129,202	134,970	137,206	143,909	150,523

Table 2a: Nominal gross domestic product at basic prices (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	201
Capture Fishery																						
Salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Seine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gillnet/Troll	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Groundfish	44.3	97.7	-11.4	-67.1	52.6	38.2	0.2	-82.4	46.0	-28.9	-72.2	11.1	91.9	-11.8	95.6	-6.5	11.8	-53.6	12.9	-11.5	-42.0	19.5
Halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sablefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hake	9.2	46.9	-8.7	-46.6	63.1	-27.9	36.4	-28.0	16.2	-26.6	-63.1	76.0	33.9	-8.9	96.3	5.9	13.7	-25.3	42.8	-30.1	3.5	-12.7
Rockfish	23.2	15.7	6.2	-13.5	-4.7	34.3	-4.4	-15.6	13.1	4.3	-4.3	-27.0	14.3	-5.3	-7.3	-10.9	0.1	1.2	-14.9	7.3	-22.7	16.2
Other groundfish	11.8	35.1	-8.9	-7.0	-5.9	31.8	-31.8	-38.8	16.6	-6.6	-4.8	-37.8	43.7	2.4	6.6	-1.4	-2.0	-29.5	-15.0	11.3	-22.8	15.9
Herring	3.5	-8.4	-0.7	33.7	-1.2	36.8	4.7	-60.3	-53.4	18.0	-2.3	-26.5	43.6	-9.8	-28.8	-3.7	-39.6	11.4	-21.0	16.9	-34.9	-68.3
Geoducks & clams	-20.5	0.0	42.0	54.3	16.8	50.4	-19.1	-41.4	-16.3	-3.4	11.6	-21.7	33.6	-20.4	3.0	0.0	1.5	-2.4	-22.2	24.8	28.3	-0.7
Prawns & shrimp	-5.4	53.7	-0.2	7.7	14.4	98.0	22.1	-14.7	-49.4	-9.6	48.2	-22.5	-23.4	66.0	-10.4	57.1	-6.6	-39.5	-20.9	97.7	-48.8	92.1
Crab	48.6	13.9	24.2	63.0	24.8	17.8	-6.2	-16.5	-32.3	-12.5	-16.5	25.9	10.5	18.0	11.8	-33.8	-14.8	48.8	-12.5	-3.6	7.1	3.0
Other	-3.0	31.2	89.4	-28.5	3.7	28.7	7.2	-36.9	-24.5	28.8	32.4	-12.4	-0.4	-2.0	65.4	-30.6	-11.2	-2.0	-28.3	7.1	70.6	34.9
Tuna	110.7	-49.5	299.9	-1.6	-11.2	56.9	-27.3	-16.7	-37.2	601.4	50.8	4.5	-28.6	19.9	97.8	-34.7	-1.9	5.2	-25.4	19.0	40.1	26.4
Capture Fishery Total	1.7	-7.8	3.2	10.8	16.7	-13.5	-5.3	-40.2	-31.1	-5.8	7.4	-25.9	29.7	-0.8	6.4	-3.0	-4.6	-10.7	-16.0	15.7	13.9	4.8
Aquaculture																						
Salmon	31.6	41.0	4.2	19.6	11.3	10.8	-8.5	13.0	-1.3	38.4	9.8	-15.3	-46.6	-15.3	-27.7	152.8	53.3	3.9	-9.6	4.3	39.7	-12.9
Shellfish	23.9	10.6	17.4	14.8	28.4	47.3	17.6	-36.5	-2.5	22.3	57.8	20.0	-49.6	19.2	-23.3	78.1	25.9	20.0	-35.7	8.9	26.5	-10.5
Oysters		-4.1	3.1	12.0	14.2	17.3	5.7	-30.8	7.6	20.2	36.7	20.9	-50.8	25.8	-25.4	75.1	31.8	-1.5	-39.0	14.6	29.3	-10.5
Clams		297.1	80.4	15.8	63.0	105.1	14.0	-34.4	-9.4	25.2	77.7	18.6	-48.9	10.4	-22.7	81.0	13.6	23.7	-31.9	-0.9	11.9	-10.4
Other shellfish		-	-	304.6	59.7	5.8	423.0	-78.1	-56.8	10.8	234.5	34.2	-42.3	68.1	-6.6	77.3	88.1	126.2	-38.8	27.0	57.6	-10.5
Other	43.3	0.4	-39.8	-20.6	46.3	15.7	-10.2	110.3	-73.5	43.8	41.4	-4.5	-17.3	-15.4	-0.9	113.2	16.6	172.2	8.4	-40.2	156.4	12.0
Aquaculture Total	31.1	38.3	4.8	19.1	12.6	13.6	-5.8	6.9	-1.7	37.2	13.0	-12.0	-46.9	-11.1	-26.9	139.9	49.7	6.1	-12.6	4.3	39.1	-12.5
Fish Processing	9.8	-7.3	-25.0	37.9	63.7	-3.7	-33.7	-32.1	-3.0	25.8	-6.8	21.1	-7.0	-16.3	-3.6	9.5	13.9	-24.2	-3.5	-0.4	11.3	2.1
Sport Fishing																						
Saltwater	3.8	-1.5	-1.5	6.7	-3.0	0.3	-1.7	-7.1	0.4	1.3	-3.1	11.5	2.4	-0.6	22.4	-1.0	0.9	3.8	4.6	5.5	0.1	-0.1
Freshwater	9.2	1.2	-1.0	10.6	1.2	3.0	-0.8	-9.2	2.9	0.2	-2.6	6.0	-2.4	-8.6	24.5	-6.9	3.9	5.3	9.2	8.3	1.6	-1.7
Sport Fishing Total	6.1	-0.3	-1.3	8.4	-1.1	1.5	-1.3	-8.1	1.6	0.8	-2.9	9.0	0.2	-4.1	23.2	-3.5	2.1	4.4	6.5	6.7	0.8	-0.8
Total, Fisheries & Aquaculture	6.3	-3.3	-5.8	16.7	23.6	-4.8	-14.3	-24.6	-9.3	11.1	0.7	1.3	-6.1	-8.1	7.0	9.3	10.7	-5.5	-3.2	5.9	12.1	-2.1
All Industries in BC	5.0	4.4	5.3	7.6	8.0	4.5	2.8	2.6	1.3	4.6	9.0	1.7	3.2	5.1	8.4	7.7	7.6	5.3	4.7	-4.1	6.1	5.6
Goods-producing Industries	-2.9	-2.5	2.1	10.6	11.9	5.1	-1.4	0.8	-4.3	9.8	18.2	-6.0	-2.5	5.9	16.1	12.3	5.8	1.8	5.3	-19.9	10.2	8.8
Service-producing Industries	8.7	7.2	6.4	6.5	6.6	4.3	4.5	3.3	3.3	2.9	5.7	4.8	5.3	4.8	5.9	6.0	8.3	6.7	4.5	1.7	4.9	4.6

Table 3: Employment\* (thousands)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	201
Capture Fishery	6.6	6.7	4.9	6.2	6.3	4.4	5.2	5.5	3.4	3.6	4.1	4.7	3.1	4.2	2.9	2.0	2.7	2.8	2.1	2.2	1.9	1.4
Aquaculture	1.5	1.5	1.7	1.6	1.5	1.4	1.7	1.8	1.4	1.5	1.9	1.8	1.7	1.6	1.6	2.1	2.0	1.5	1.7	1.6	1.7	1.7
Fish Processing	3.0	3.2	5.3	3.0	4.7	3.7	3.3	3.8	2.6	2.5	2.2	3.8	5.9	4.6	4.8	3.6	2.6	2.9	2.8	3.0	2.7	2.4
Sport Fishing	9.7	8.3	8.2	8.2	8.1	8.0	7.7	7.3	6.6	7.0	6.6	7.5	7.1	6.6	8.5	7.2	6.8	7.1	7.6	8.3	8.0	8.4
Saltwater	5.5	4.7	4.6	4.6	4.4	4.3	4.1	3.9	3.5	3.7	3.5	4.1	3.9	3.8	4.8	4.2	4.0	4.0	4.3	4.6	4.4	4.6
Freshwater	4.2	3.6	3.6	3.7	3.6	3.8	3.6	3.4	3.1	3.2	3.1	3.4	3.1	2.8	3.7	3.0	2.9	3.0	3.3	3.7	3.6	3.7
Total, Fisheries & Aquaculture	20.8	19.7	20.1	19.0	20.6	17.5	17.9	18.4	14.0	14.6	14.8	17.8	17.8	17.0	17.8	14.9	14.1	14.3	14.2	15.1	14.3	13.9
All Industries in BC	1,560	1,578	1,617	1,668	1,743	1,786	1,813	1,860	1,858	1,894	1,931	1,920	1,953	1,998	2,033	2,092	2,147	2,223	2,266	2,218	2,257	2,275
Goods-producing Industries	389	378	371	383	402	405	409	419	409	392	407	382	389	410	429	444	454	484	491	439	443	447
Service-producing Industries	1,171	1,200	1,246	1,285	1,342	1,381	1,405	1,441	1,449	1,502	1,524	1,538	1,564	1,588	1,604	1,648	1,693	1,739	1,776	1,779	1,814	1,827

Table 3a: Employment\* (% change)

	1990	1991	1992	1993	1994	1995	1006	1007	1008	1000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000	2010	2011
_		1331					1330	1331	1330	1333	2000	2001		2003	2004	2003	2000	2007	2000	2003		
Capture Fishery	-5.7	1.5	-26.9	26.5	1.6	-30.2	18.2	5.8	-38.2	5.9	13.9	14.6	-34.0	35.5	-31.0	-31.0	35.0	3.7	-25.0	4.8	-13.6	-26.3
Aquaculture	10.0	-0.6	13.3	-5.8	-5.8	-4.4	16.6	7.0	-23.7	9.2	26.7	-5.3	-3.1	-6.8	-1.6	31.3	-4.8	-25.0	10.7	-2.8	5.3	0.3
Fish Processing	-26.8	6.7	65.6	-43.4	56.7	-21.3	-10.8	15.2	-31.6	-3.8	-12.0	72.7	55.3	-22.0	4.3	-25.0	-27.8	11.5	-3.4	7.1	-10.0	-11.1
Sport Fishing	5.9	-14.1	-1.2	0.0	-1.2	-1.2	-3.8	-5.2	-9.6	6.1	-5.7	13.6	-5.3	-7.0	28.8	-15.3	-5.6	4.4	7.0	9.2	-3.6	5.0
Saltwater	-1.3	-14.3	-2.1	0.0	-4.3	-2.3	-4.7	-4.9	-10.3	5.7	-5.4	17.1	-4.9	-2.6	26.3	-12.5	-4.8	0.0	7.5	7.0	-4.3	4.5
Freshwater	17.4	-13.9	0.0	2.8	-2.7	5.6	-5.3	-5.6	-8.8	3.2	-3.1	9.7	-8.8	-9.7	32.1	-18.9	-3.3	3.4	10.0	12.1	-2.7	2.8
Total, Fisheries & Aquaculture	-3.8	-5.2	2.0	-5.5	8.5	-14.9	1.9	2.9	-24.1	4.5	1.4	20.3	0.2	-4.6	4.6	-16.3	-5.4	1.4	-1.0	6.7	-5.4	-2.8
All Industries in BC	3.4	1.1	2.5	3.1	4.5	2.4	1.6	2.6	-0.1	1.9	2.0	-0.6	1.7	2.3	1.7	2.9	2.6	3.5	2.0	-2.1	1.7	0.8
Goods-producing Industries	1.4	-2.9	-1.8	3.2	4.9	0.9	0.9	2.5	-2.5	-4.1	3.9	-6.3	2.0	5.3	4.6	3.6	2.2	6.5	1.5	-10.6	0.9	1.1
Service-producing Industries	4.1	2.5	3.9	3.1	4.4	2.9	1.8	2.6	0.6	3.6	1.5	1.0	1.7	1.6	1.0	2.7	2.8	2.7	2.1	0.2	2.0	0.7

<sup>\*</sup>Employment estimates for these industries are based on Labour Force Survey data .

<sup>\*</sup>Employment estimates for these industries are based on Labour Force Survey data .

Table 4: Wages and salaries (\$million)

	1990	1991	1992	1993	1994	1995	1006	1007	1000	1000	2000	2004	2002	2002	2004	2005	2006	2007	2000	2000	2010	2011
							1990	1991	1990	1999		2001		2003	2004				2000	2009	2010	201
Capture Fishery*	36.6	23.8	25.3	26.7	32.1	23.6	22.4	18.6	10.3	9.0	10.0	12.1	12.1	13.0	12.9	11.5	10.8	10.9	8.6	8.0	8.8	8.4
Aquaculture**	14.1	21.9	21.1	23.6	22.2	34.9	31.2	30.0	30.5	35.0	40.0	43.0	48.0	41.0	43.0	41.0	48.0	53.0	58.9	66.5	58.5	55.7
Fish Processing	100.3	110.3	107.8	124.5	126.3	100.5	98.3	99.1	92.2	97.5	118.3	118.5	121.8	110.0	117.9	120.4	111.6	97.2	91.0	98.1	101.7	105.3
Sport Fishing	164.2	158.6	166.8	171.6	160.2	158.7	147.5	139.0	143.1	143.6	138.9	160.6	161.8	153.3	183.4	177.1	179.3	189.0	204.7	219.3	221.9	218.9
Saltwater	95.2	91.6	95.5	96.3	88.1	85.9	79.6	75.7	77.4	78.0	75.0	88.9	91.2	89.8	106.4	105.5	105.8	110.9	118.2	125.9	125.7	124.9
Freshwater	69.0	66.9	71.3	75.3	72.1	72.8	67.9	63.3	65.7	65.6	63.9	71.7	70.6	63.5	77.0	71.7	73.5	78.2	86.5	93.4	96.2	94.0
Total, Fisheries & Aquaculture	315.2	314.6	321.0	346.4	340.7	317.7	299.4	286.7	276.0	285.1	307.2	334.2	343.8	317.3	357.2	350.0	349.6	350.1	363.2	391.9	390.9	388.3
All Industries in BC	40,010	41,377	43,406	45,343	47,312	49,383	51,179	53,035	54,173	56,263	60,270	61,496	63,193	65,310	69,607	74,455	81,623	86,213	89,472	87,471	91,036	95,463
Goods-producing Industries	10,722	10,542	10,918	11,266	11,874	12,352	12,767	13,163	12,850	13,422	14,126	13,872	13,877	14,303	15,789	17,419	19,401	20,526	19,809	18,054	18,726	20,071
Service-producing Industries	29,288	30,835	32,488	34,076	35,438	37,031	38,411	39,872	41,323	42,842	46,144	47,624	49,316	51,007	53,817	57,036	62,222	65,687	69,663	69,417	72,310	75,392

#### Table 4a: Wages and salaries (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Capture Fishery*	-11.5	-34.9	6.0	5.9	19.9	-26.5	-4.9	-17.0	-44.8	-12.5	11.2	21.5	0.0	7.1	-0.4	-11.5	-6.1	1.0	-20.9	-6.9	9.9	-4.5
Aquaculture**	15.9	55.5	-3.7	11.8	-6.0	57.7	-10.7	-3.9	1.7	14.8	14.3	7.5	11.6	-14.6	4.9	-4.7	17.1	10.4	11.1	12.9	-12.0	-4.7
Fish Processing	1.3	9.9	-2.2	15.5	1.4	-20.4	-2.3	0.8	-7.0	5.8	21.3	0.2	2.9	-9.7	7.2	2.1	-7.3	-12.9	-6.4	7.7	3.6	3.6
Sport Fishing	17.1	-3.4	5.2	2.9	-6.6	-0.9	-7.1	-5.8	2.9	0.3	-3.3	15.6	0.7	-5.3	19.6	-3.4	1.2	5.4	8.3	7.1	1.2	-1.4
Saltwater	9.7	-3.8	4.3	0.8	-8.5	-2.5	-7.3	-4.9	2.2	0.8	-3.8	18.5	2.6	-1.5	18.5	-0.8	0.3	4.8	6.6	6.5	-0.2	-0.6
Freshwater	2.8	-4.7	5.3	2.6	4.1	5.2	2.8	1.5	-1.1	7.9	7.2	-3.6	-1.3	2.7	7.3	6.8	2.8	0.8	-8.1	-10.3	1.7	3.6
Total, Fisheries & Aquaculture	7.7	-0.2	2.0	7.9	-1.7	-6.7	-5.8	-4.3	-3.7	3.3	7.7	8.8	2.9	-7.7	12.6	-2.0	-0.1	0.1	3.8	7.9	-0.3	-0.6
All Industries in BC	9.0	3.4	4.9	4.5	4.3	4.4	3.6	3.6	2.1	3.9	7.1	2.0	2.8	3.4	6.6	7.0	9.6	5.6	3.8 -	2.2	4.1	4.9
Goods-producing Industries	4.7 -	1.7	3.6	3.2	5.4	4.0	3.4	3.1 -	2.4	4.4	5.2 -	1.8	0.0	3.1	10.4	10.3	11.4	5.8 -	3.5 -	8.9	3.7	7.2
Service-producing Industries	10.8	5.3	5.4	4.9	4.0	4.5	3.7	3.8	3.6	3.7	7.7	3.2	3.6	3.4	5.5	6.0	9.1	5.6	6.1 -	0.4	4.2	4.3

Wages and salaries exclude the earnings of owner operators of unincorporated businesses.
 Many people who work in the commercial fishery are fish boat owners who receive unincorporated business income rather than wages and salaries.

<sup>\*\*</sup> Wage and salary estimates for aquaculture are from the Statistics Canada Survey of Aquaculture, and are only available from 1997 on.

Wage and salary estimates for the aquaculture sector for the period prior to 1997 are BC Stats estimates and are somewhat less robust.

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Wage and salary estimates for the aquaculture sector for the period prior to 1997 are BC Stats estimates and are somewhat less robust.

Table 5: Revenues (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011p
Capture Fishery																						
Salmon	263.4	172.4	191.8	201.0	256.3	85.7	97.2	109.7	54.0	26.3	50.5	37.1	57.2	48.8	53.2	34.2	60.9	31.6	21.8	23.7	70.6	46.2
Seine	103.7	61.8	60.5	80.0	99.3	27.6	29.1	46.3	21.6	10.0	19.2	12.1	16.3	16.8	15.8	11.5	19.9	9.7	3.6	9.5	33.7	19.1
Gillnet/Troll	159.7	110.7	131.3	121.0	157.0	58.1	70.9	63.6	33.0	16.9	33.2	25.0	41.0	31.8	37.6	24.2	41.7	22.0	18.1	14.2	37.0	27.1
Groundfish	87.6	102.7	100.0	101.6	128.4	118.2	106.3	128.1	121.8	130.9	136.8	125.4	131.3	137.2	147.5	156.7	149.5	135.5	123.8	108.7	111.9	134.3
Halibut	21.1	21.8	21.5	30.3	37.5	34.1	32.4	41.6	30.9	38.7	42.5	37.2	48.0	49.2	51.4	50.5	51.8	49.5	38.5	31.5	37.5	45.6
Sablefish	19.4	29.8	25.4	23.9	34.6	32.1	23.7	32.6	27.6	26.8	31.6	24.0	20.8	21.3	20.4	31.6	27.0	23.5	23.0	24.0	22.5	27.2
Hake	12.8	15.4	15.5	8.7	16.4	9.1	14.7	15.9	19.1	15.3	6.3	13.8	13.8	13.7	26.6	28.4	29.8	22.5	25.8	14.2	16.9	16.5
Rockfish	15.5	14.6	17.1	15.5	17.1	17.7	20.0	25.4	29.7	33.8	36.1	32.8	28.0	28.9	26.5	23.8	22.0	22.5	21.0	22.5	20.0	26.0
Other groundfish	18.8	21.2	20.6	23.3	22.8	25.2	15.5	12.6	14.5	16.3	20.3	17.6	20.7	24.1	22.6	22.4	18.9	17.5	15.5	16.5	15.0	19.0
Herring	81.5	58.3	60.3	83.0	90.3	93.9	99.7	66.9	36.6	48.6	50.1	46.2	48.4	45.1	34.0	32.5	18.3	20.2	16.0	17.6	11.8	3.8
Geoducks & clams	16.0	13.1	19.0	29.8	37.5	45.9	38.5	37.6	35.1	39.0	46.7	45.3	44.6	37.3	38.7	36.6	35.5	33.6	27.9	33.8	42.7	42.6
Prawns & shrimp	9.6	12.1	12.4	13.6	16.9	31.4	38.6	32.2	25.2	23.2	37.5	36.6	23.5	36.3	32.6	48.9	44.1	31.5	28.2	34.3	24.7	41.0
Crab	9.3	8.7	11.2	18.8	25.7	23.6	23.7	28.7	21.4	21.8	20.3	36.5	29.0	39.1	46.8	29.7	23.9	38.9	37.4	32.2	33.7	32.5
Other	8.7	9.4	17.8	12.9	14.2	15.3	16.3	17.6	14.9	22.0	31.0	32.5	26.3	27.5	42.4	29.2	25.8	25.3	28.7	26.8	35.7	44.4
Tuna	0.8	0.3	1.4	1.4	1.3	1.7	1.2	1.7	1.2	9.7	15.7	19.3	11.2	14.3	26.4	17.1	16.7	17.6	17.8	16.2	22.7	28.7
Capture Fishery Total	476.2	376.8	412.5	460.7	569.3	414.0	420.4	420.9	309.0	311.9	372.9	359.7	360.4	371.3	395.2	367.8	358.0	316.6	283.8	277.1	331.1	344.8
Aquaculture																						l
Salmon	78.6	110.9	115.5	138.1	153.8	170.4	155.9	176.2	229.0	290.4	281.7	270.9	289.0	255.8	225.2	318.3	407.4	384.1	409.3	394.2	499.7	435.3
Shellfish	3.8	4.0	4.6	5.3	6.6	9.4	10.9	7.0	8.6	9.9	13.5	17.1	14.8	17.1	15.9	17.8	19.1	21.3	16.2	17.5	22.0	19.7
Oysters	3.6	3.5	3.6	4.0	4.6	5.4	5.7	3.9	4.9	5.6	6.6	8.4	7.2	8.4	7.7	8.4	8.6	8.6	6.5	7.0	8.7	7.8
Clams	0.1	0.6	1.0	1.2	1.9	3.9	4.4	2.9	3.6	4.2	6.6	8.2	7.1	7.9	7.4	8.5	8.9	9.3	7.2	7.1	8.0	7.2
Other shellfish	0.0	0.0	0.0	0.1	0.2	0.2	0.9	0.2	0.1	0.1	0.3	0.5	0.5	0.8	0.9	1.0	1.5	3.4	2.4	3.0	4.6	4.2
Other	0.5	0.5	0.3	0.3	0.4	0.4	0.4	0.9	0.9	0.8	0.9	1.0	1.2	1.3	1.7	2.6	3.6	6.2	8.0	7.9	12.5	14.0
Aquaculture Total	82.9	115.5	120.4	143.7	160.8	180.2	167.3	184.1	238.5	301.1	296.1	289.0	305.0	274.2	242.8	338.7	430.1	411.6	433.5	419.6	534.2	469.0
Fish Processing	784.5	709.7	634.6	689.8	862.8	793.7	720.2	570.9	505.4	593.0	654.9	735.5	753.2	663.2	616.9	633.2	575.1	403.8	401.5	407.9	418.7	427.5
Sport Fishing																						l
Saltwater	332.7	326.0	320.3	340.5	335.6	337.8	326.4	312.8	326.3	314.3	331.7	357.8	371.8	393.7	480.2	464.2	476.9	517.3	533.9	545.6	531.2	539.8
Freshwater	244.2	248.4	246.6	278.1	291.0	299.4	288.1	268.7	279.0	264.4	277.9	287.1	283.7	275.3	343.8	317.2	329.5	357.0	386.9	405.7	397.8	396.7
Sport Fishing Total	576.9	574.3	567.0	618.6	626.6	637.2	614.6	581.6	605.3	578.7	609.7	644.8	655.5	669.0	824.0	781.4	806.4	874.2	920.8	951.3	929.0	936.5
Total, Fisheries & Aquaculture	1,920.5	1,776.3	1,734.5	1,912.7	2,219.5	2,025.2	1,922.5	1,757.5	1,658.1	1,784.7	1,933.6	2,029.0	2,074.2	1,977.7	2,079.0	2,121.1	2,169.7	2,006.2	2,039.6	2,055.9	2,213.1	2,177.8
Shellfish data is										_			_	_		_						

\*Shellfish data is Source: Fisheries and Oceans Canada, BC Stats & Statistics Canada

Table 5a: Revenues (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011p
Capture Fishery																						
Salmon	2.9	-34.5	11.2	4.8	27.5	-66.6	13.5	12.8	-50.8	-51.3	92.0	-26.4	54.1	-14.7	9.0	-35.7	78.1	-48.1	-31.0	8.7	197.9	-34.6
Seine	-7.3	-40.4	-2.1	32.4	24.1	-72.2	5.5	58.8	-53.2	-53.9	93.1	-37.0	34.3	3.2	-6.1	-27.0	72.5	-51.3	-62.5	161.3	255.2	-43.2
Gillnet/Troll	10.7	-30.7	18.7	-7.9	29.8	-63.0	22.1	-10.3	-48.2	-48.7	96.1	-24.6	64.0	-22.5	18.3	-35.6	71.9	-47.2	-17.5	-21.5	159.5	-26.7
Groundfish	18.4	17.2	-2.6	1.5	26.4	-7.9	-10.1	20.5	-4.9	7.5	4.5	-8.4	4.7	4.5	7.5	6.2	-4.6	-9.4	-8.6	-12.2	3.0	20.0
Halibut	12.7	3.4	-1.1	40.7	23.7	-8.9	-5.1	28.6	-25.7	25.2	9.8	-12.5	29.0	2.5	4.5	-1.8	2.6	-4.4	-22.2	-18.2	19.0	21.6
Sablefish	29.1	53.1	-14.6	-6.0	44.8	-7.3	-25.9	37.3	-15.3	-2.9	17.9	-24.1	-13.3	2.4	-4.2	54.9	-14.6	-13.0	-2.1	4.3	-6.3	20.9
Hake	13.2	19.9	0.5	-44.0	89.4	-44.4	61.0	8.3	20.1	-19.9	-58.8	119.0	0.0	-0.7	94.2	6.8	4.9	-24.5	14.7	-45.0	19.0	-2.4
Rockfish	27.7	-5.6	16.9	-9.3	10.7	3.6	12.9	26.8	16.9	13.8	6.8	-9.1	-14.6	3.2	-8.3	-10.2	-7.6	2.3	-6.7	7.1	-11.1	30.0
Other groundfish	12.0	12.7	-3.1	13.3	-2.0	10.4	-38.4	-18.7	15.0	12.6	24.5	-13.6	17.9	16.4	-6.3	-0.8	-15.6	-7.4	-11.3	6.4	-9.0	26.4
Herring	6.8	-28.5	3.5	37.7	8.7	4.1	6.1	-32.9	-45.3	32.8	3.1	-7.8	4.8	-6.8	-24.6	-4.4	-43.7	10.4	-20.8	10.0	-33.0	-67.8
Geoducks & clams	-18.2	-18.1	44.6	57.1	26.0	22.4	-16.2	-2.3	-6.6	11.1	19.7	-3.0	-1.5	-16.4	3.8	-5.4	-3.0	-5.4	-17.0	21.1	26.3	-0.2
Prawns & shrimp	-2.6	25.9	2.2	9.7	24.1	85.6	23.1	-16.7	-21.7	-7.9	61.6	-2.4	-35.8	54.5	-10.2	50.0	-9.8	-28.6	-10.5	21.6	-28.0	66.0
Crab	52.9	-6.7	28.9	67.5	36.9	-8.3	0.8	20.9	-25.4	1.9	-6.9	79.8	-20.5	34.8	19.7	-36.5	-19.5	62.8	-3.9	-13.9	4.7	-3.6
Other	-0.2	7.5	90.0	-27.7	10.5	7.4	6.5	8.4	-15.5	47.8	40.7	5.1	-19.1	4.3	54.3	-31.2	-11.6	-1.9	13.2	-6.5	33.2	24.4
Tuna	118.4	-58.8	300.9	-1.4	-5.5	32.8	-27.5	39.4	-28.6	691.8	61.9	22.9	-42.0	27.7	84.6	-35.2	-2.3	5.4	1.1	-9.0	40.1	26.4
Capture Fishery Total	5.7	-20.9	9.5	11.7	23.6	-27.3	1.5	0.1	-26.6	0.9	19.6	-3.5	0.2	3.0	6.4	-6.9	-2.7	-11.6	-10.4	-2.4	19.5	4.1
Aquaculture																						
Salmon	31.6	41.0	4.2	19.6	11.3	10.8	-8.5	13.0	30.0	26.8	-3.0	-3.8	6.7	-11.5	-12.0	41.3	28.0	-5.7	6.6	-3.7	26.8	-12.9
Shellfish	-	7.1	14.4	14.4	25.8	42.2	16.4	-35.9	23.1	14.9	36.6	26.1	-13.5	15.9	-7.0	12.0	6.9	11.5	-23.8	8.0	25.7	-10.5
Oysters	23.0	-4.1	3.1	12.0	14.2	17.3	5.7	-30.8	25.1	14.3	17.9	27.3	-14.3	17.2	-9.1	9.4	3.1	-0.4	-24.0	7.7	23.2	-10.5
Clams	45.8	297.1	80.4	15.9	63.0	105.1	14.0	-34.4	24.7	16.1	57.1	24.2	-13.4	11.3	-6.7	14.8	5.2	4.5	-22.5	-0.9	11.9	-10.4
Other shellfish	-	-	-	304.2	59.8	7.1	416.9	-77.6	-41.7	2.7	200.0	40.3	-0.8	65.0	13.1	11.7	53.3	118.8	-27.1	22.8	54.3	-10.5
Other	-	0.4	-39.8	-20.7	46.3	15.7	-10.1	125.6	1.6	-10.7	12.5	11.1	20.0	8.1	32.2	49.7	42.0	70.2	28.4	-0.7	58.2	12.0
Aquaculture Total	31.3	39.2	4.3	19.3	11.9	12.1	-7.2	10.0	29.6	26.3	-1.7	-2.4	5.5	-10.1	-11.4	39.5	27.0	-4.3	5.3	-3.2	27.3	-12.2
Fish Processing	5.4	-9.5	-10.6	8.7	25.1	-8.0	-9.3	-20.7	-11.5	17.3	10.4	12.3	2.4	-12.0	-7.0	2.6	-9.2	-29.8	-0.6	1.6	2.7	2.1
Sport Fishing																						
Saltwater	4.9	-2.0	-1.7	6.3	-1.4	0.7	-3.4	-4.2	4.3	-3.7	5.5	7.8	3.9	5.9	22.0	-3.3	2.7	8.5	3.2	2.2	-2.6	1.6
Freshwater	10.4	1.7	-0.7	12.7	4.7	2.9	-3.8	-6.7	3.8	-5.2	5.1	3.3	-1.2	-3.0	24.9	-7.7	3.9	8.3	8.4	4.9	-1.9	-0.3
Sport Fishing Total	7.2	-0.4	-1.3	9.1	1.3	1.7	-3.6	-5.4	4.1	-4.4	5.3	5.8	1.7	2.1	23.2	-5.2	3.2	8.4	5.3	3.3	-2.3	0.8
Total, Fisheries & Aquaculture	6.9	-7.5	-2.4	10.3	16.0	-8.8	-5.1	-8.6	-5.7	7.6	8.3	4.9	2.2	-4.7	5.1	2.0	2.3	-7.5	1.7	0.8	7.6	-1.6

Source: Fisheries and Oceans Canada, BC Stats & Statistics Canada

Table 6: Exports of BC fish and seafood products (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total, Wild Finfish & Shellfish	753.6	648.0	623.8	677.8	751.7	660.1	683.5	607.9	559.1	584.5	663.0	599.1	618.7	660.0	729.0	675.6	624.3	543.7	539.7	514.6	598.5	555.3
Wild Finfish	698.5	589.2	543.4	584.0	632.7	511.1	533.3	459.5	436.8	465.3	521.6	455.8	498.6	504.5	547.9	510.3	467.8	387.8	388.0	344.1	434.3	375.1
Wild salmon	456.0	352.1	311.8	298.9	349.0	187.5	190.6	189.6	143.4	103.7	117.0	134.3	151.2	155.1	177.6	153.6	152.7	116.7	100.2	93.0	172.6	132.4
Herring	156.3	129.1	120.1	153.2	130.7	157.5	199.9	106.8	104.9	99.7	132.1	104.6	97.9	91.1	93.5	94.1	61.0	47.8	53.9	57.5	47.7	28.7
Sardines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	1.2	2.0	2.2	1.0	4.5	4.2	1.1	1.6	9.6	12.5	17.0	17.2
Halibut	14.0	20.7	22.9	32.1	40.3	35.7	33.5	38.1	48.3	78.1	74.0	71.7	91.1	97.4	78.8	48.4	49.5	43.3	35.2	26.5	28.4	28.8
Sablefish	0.0	0.1	21.5	25.7	32.9	33.9	25.3	31.2	22.2	27.0	23.2	18.7	15.8	15.0	14.3	19.4	23.3	17.2	19.0	19.2	17.5	17.6
Other	72.2	87.2	67.1	74.0	79.8	96.6	84.0	93.7	117.6	156.0	174.2	124.5	140.3	144.9	179.2	190.5	180.0	161.2	170.1	135.4	151.1	150.4
Shellfish*	55.1	58.9	80.4	93.9	119.1	148.9	150.3	148.4	122.3	119.2	141.3	143.3	120.1	155.6	181.1	165.4	156.5	155.9	151.7	170.5	164.3	180.2
Geoducks & Clams	15.1	13.4	19.4	29.2	42.3	58.7	47.0	51.5	51.0	59.0	55.1	51.6	49.6	51.9	54.7	48.4	49.3	48.7	44.2	46.9	51.4	46.7
Shrimp & Prawns	6.0	7.6	7.2	10.0	12.0	26.1	33.0	32.6	26.0	19.5	38.5	31.0	21.3	40.1	36.4	49.8	52.1	35.8	30.5	47.5	30.6	51.1
Crabs	6.9	6.1	10.3	23.1	25.8	25.0	38.7	33.3	19.6	23.4	26.9	42.8	31.0	44.4	62.6	40.3	35.8	55.0	60.8	56.6	65.3	57.3
Other	27.1	31.8	43.4	31.5	38.9	39.1	31.6	31.0	25.7	17.3	20.8	17.9	18.2	19.2	27.5	26.9	19.3	16.5	16.3	19.5	16.9	25.0
Farmed Finfish & Shellfish**	14.4	48.0	95.6	114.9	144.5	179.8	153.7	212.8	245.8	260.5	232.5	366.2	395.4	320.6	244.9	309.5	353.9	353.2	359.5	354.3	346.3	343.1
Farmed Salmon	12.7	46.0	93.7	112.2	140.7	175.4	149.4	208.3	241.5	255.4	227.5	361.1	389.8	313.2	239.4	302.4	343.8	344.6	354.0	347.9	338.5	333.8
Farmed Shellfish	1.7	1.9	1.9	2.7	3.8	4.5	4.3	4.2	3.1	4.6	4.8	4.9	5.6	7.4	5.5	7.0	10.1	8.5	5.5	6.4	7.8	9.2
Other	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	1.2	0.5	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Other Fish & Seafood Products	8.5	7.4	8.7	9.9	14.8	8.4	8.1	8.9	9.0	8.5	8.7	9.2	15.8	16.2	10.3	10.4	8.2	7.8	11.3	13.7	12.1	12.9
Total Fish & Seafood Products	776.5	703.4	728.2	802.6	911.0	848.3	845.3	829.6	813.9	853.5	904.1	974.5	1029.9	996.9	984.2	995.6	986.4	904.6	910.6	882.6	956.9	911.3
Gear & Boats	21.2	19.0	14.5	22.2	33.1	37.1	59.9	53.9	97.0	114.1	92.2	181.0	186.8	163.5	108.1	108.1	88.0	75.0	69.2	54.6	58.3	55.6
Total Fish & Seafood, Gear and Boats	797.7	722.4	742.6	824.8	944.1	885.4	905.2	883.5	910.8	967.6	996.4	1155.4	1216.7	1160.4	1092.3	1103.6	1074.4	979.7	979.8	937.2	1015.2	967.0

Table 6a: Exports of BC fish and seafood products (% change)

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	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total, Wild Finfish & Shellfish	2.5	-14.0	-3.7	8.7	10.9	-12.2	3.6	-11.1	-8.0	4.5	13.4	-9.6	3.3	6.7	10.5	-7.3	-7.6	-12.9	-0.7	-4.7	16.3	-7.2
Wild Finfish	2.1	-15.7	-7.8	7.5	8.3	-19.2	4.3	-13.8	-4.9	6.5	12.1	-12.6	9.4	1.2	8.6	-6.9	-8.3	-17.1	0.1	-11.3	26.2	-13.6
Wild salmon	0.5	-22.8	-11.4	-4.1	16.8	-46.3	1.6	-0.5	-24.4	-27.7	12.8	14.8	12.6	2.6	14.5	-13.5	-0.6	-23.6	-14.1	-7.2	85.6	-23.3
Herring	5.5	-17.4	-7.0	27.6	-14.7	20.5	26.9	-46.6	-1.8	-5.0	32.5	-20.8	-6.4	-7.0	2.6	0.7	-35.2	-21.6	12.8	6.7	-17.1	-39.8
Sardines	-	-	-	-	-	-	1562.5	-	-	96.5	48.4	62.7	8.1	-53.7	349.7	-7.1	-73.1	39.4	512.6	30.2	36.2	1.4
Halibut	43.8	47.7	10.6	40.1	25.6	-11.4	-6.1	13.9	26.8	61.6	-5.3	-3.1	27.2	6.8	-19.1	-38.6	2.4	-12.7	-18.7	-24.8	7.3	1.4
Sablefish	-	-	22337.6	19.7	27.7	3.2	-25.4	23.6	-29.1	21.9	-14.3	-19.2	-15.8	-4.9	-4.7	36.0	20.0	-26.2	10.1	1.5	-9.2	1.0
Other	-0.4	20.7	-23.0	10.3	7.8	21.0	-13.0	11.5	25.5	32.6	11.7	-28.5	12.7	3.3	23.7	6.3	-5.5	-10.4	5.5	-20.4	11.6	-0.5
Shellfish*	7.1	6.9	36.5	16.8	26.9	25.1	0.9	-1.3	-17.5	-2.6	18.6	1.4	-16.2	29.5	16.4	-8.7	-5.3	-0.4	-2.7	12.4	-3.6	9.7
Geoducks & Clams	-37.5	-11.4	44.7	50.8	44.8	38.7	-20.0	9.6	-0.9	15.5	-6.5	-6.4	-3.9	4.7	5.4	-11.5	1.9	-1.3	-9.3	6.1	9.8	-9.3
Shrimp & Prawns	55.5	28.0	-5.3	38.6	20.0	117.3	26.4	-1.2	-20.4	-24.8	97.0	-19.5	-31.0	87.7	-9.2	36.9	4.7	-31.4	-14.8	56.1	-35.5	66.9
Crabs	165.5	-12.1	69.9	123.3	11.8	-3.3	54.9	-14.0	-41.0	19.4	14.9	59.0	-27.6	43.4	40.8	-35.6	-11.1	53.6	10.5	-6.8	15.4	-12.2
Other	30.3	17.3	36.7	-27.4	23.4	0.6	-19.2	-2.0	-17.0	-32.8	20.5	-13.9	1.4	5.4	43.4	-2.0	-28.4	-14.6	-0.9	19.5	-13.4	48.1
Farmed Finfish & Shellfish**	43.9	233.1	99.2	20.1	25.8	24.5	-14.5	38.4	15.5	6.0	-10.7	57.5	8.0	-18.9	-23.6	26.4	14.3	-0.2	1.8	-1.5	-2.3	-0.9
Farmed Salmon	38.5	263.3	103.5	19.7	25.4	24.6	-14.8	39.4	15.9	5.8	-11.0	58.8	7.9	-19.6	-23.6	26.3	13.7	0.2	2.7	-1.7	-2.7	-1.4
Farmed Shellfish	101.7	11.2	-1.9	42.1	39.8	18.0	-4.2	-1.8	-26.0	46.9	5.8	2.6	13.7	32.1	-26.2	28.1	43.5	-15.4	-35.4	16.0	21.7	19.0
Other	-	-	74.3	-98.2	583.3	-	-	-	317.6	-57.4	-57.3	-31.8	-97.7	-	-	79.1	-63.9	25.9	-94.0	166.7	91.1	790.7
Other Fish & Seafood Products	-31.2	-13.7	18.1	14.3	48.6	-43.3	-3.3	10.0	0.4	-4.8	1.8	5.6	72.3	2.6	-36.7	1.5	-21.2	-5.3	45.1	20.9	-11.6	7.3
Total Fish & Seafood Products	2.4	-9.4	3.5	10.2	13.5	-6.9	-0.3	-1.9	-1.9	4.9	5.9	7.8	5.7	-3.2	-1.3	1.2	-0.9	-8.3	0.7	-3.1	8.4	-4.8
Gear & Boats	22.7	-10.4	-23.7	53.5	48.9	12.3	61.4	-10.0	79.8	17.7	-19.2	96.2	3.2	-12.5	-33.9	-0.1	-18.5	-14.7	-7.8	-21.1	6.7	-4.5
Total Fish & Seafood, Gear and Boats	2.9	-9.4	2.8	11.1	14.5	-6.2	2.2	-2.4	3.1	6.2	3.0	16.0	5.3	-4.6	-5.9	1.0	-2.6	-8.8	0.0	-4.3	8.3	-4.7

#### Source: BC Stats

Totals may include some farmed products which are not separately identified
 Total includes farmed trout as well as salmon and shellfish. Although farmed salmon was not a separate export category prior to 1991, it was assumed that all exports of fresh Atlantic salmon were farmed.
 \*\*\* Includes fish meal and similar products

Totals may include some farmed products which are not separately identified
 Total includes farmed trout as well as salmon and shellfish. Although farmed salmon was not a separate export category prior to 1991, it was assumed that all exports of fresh Atlantic salmon were farmed.
 Includes fish meal and similar products

Table 7: Exports of BC fish and seafood products by level of processing (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fresh	175.6	210.4	238.1	292.2	349.4	391.4	342.5	413.7	462.1	520.2	511.2	597.8	646.6	589.9	533.0	544.8	571.8	573.8	565.7	553.7	599.0	559.2
Wild Salmon	88.1	75.9	26.3	35.1	29.1	15.1	10.9	13.7	10.5	7.8	5.7	12.6	26.1	30.9	35.6	31.0	33.9	28.2	18.6	19.2	56.1	33.6
Farmed Salmon	11.5	44.9	93.1	111.6	140.6	175.3	149.4	208.2	241.1	255.3	227.0	360.4	385.0	311.4	236.4	302.0	342.7	344.4	353.9	347.5	337.9	333.6
Herring	1.5	0.1	1.3	2.3	1.6	1.1	0.6	2.5	2.5	3.2	4.1	0.0	0.3	0.1	0.5	1.2	0.6	1.0	0.1	0.0	0.1	0.6
Halibut	10.9	17.5	20.9	31.5	39.2	33.8	32.4	36.9	45.4	70.6	64.5	63.7	83.3	86.7	70.2	46.4	46.8	42.1	33.9	25.7	27.7	27.2
Other groundfish	11.1	13.9	14.9	15.6	14.7	14.2	8.7	7.5	11.2	11.1	15.8	17.8	23.9	21.9	30.1	29.4	19.4	18.4	19.9	18.4	20.1	14.4
Other finfish	23.4	22.5	24.7	27.6	29.8	38.3	38.5	47.2	65.6	83.7	106.3	44.0	43.0	39.2	39.3	35.9	31.2	32.1	32.6	30.3	34.5	33.3
Shellfish	29.2	35.7	56.9	68.5	94.4	113.7	102.0	97.6	85.8	88.5	87.7	99.2	85.1	99.7	120.9	99.0	97.2	107.7	106.8	112.6	122.7	116.5
Frozen	243.8	210.0	212.8	226.3	295.6	200.0	172.9	212.0	153.9	149.2	166.0	168.9	186.7	224.4	281.8	285.2	292.6	223.0	226.1	216.9	250.9	262.5
Wild Salmon	195.3	149.0	156.6	167.6	213.7	99.1	70.0	99.2	53.9	36.2	42.5	44.4	62.7	65.0	88.6	71.7	68.9	47.1	38.1	43.7	77.2	63.4
Farmed Salmon	1.1	1.1	0.5	0.5	0.1	0.1	0.1	0.0	0.4	0.1	0.5	0.7	4.8	1.8	3.0	0.4	1.0	0.2	0.1	0.4	0.6	0.2
Herring	1.7	2.0	2.5	2.6	3.5	5.2	5.7	8.9	15.8	5.4	5.1	8.2	7.3	10.2	9.8	11.8	17.5	7.5	6.6	8.5	9.8	10.5
Halibut	3.1	3.2	2.0	0.5	1.0	1.9	1.0	1.2	3.0	7.4	9.4	8.0	7.8	10.7	8.6	2.0	2.7	1.2	1.3	0.8	0.7	1.6
Other groundfish	27.1	9.9	28.4	31.0	40.4	44.1	35.4	38.4	30.5	41.0	41.8	39.6	37.3	45.3	65.4	86.9	108.6	87.1	96.7	76.8	76.2	85.4
Other finfish	7.6	37.9	14.8	15.5	21.7	24.9	19.5	24.3	24.9	37.4	26.5	36.1	43.9	43.8	58.9	56.7	40.3	38.2	46.1	37.3	52.0	48.8
Shellfish	7.8	6.9	8.0	8.5	15.2	24.7	41.2	40.1	25.5	21.7	40.3	31.9	22.8	47.6	47.4	55.7	53.5	41.6	37.2	49.5	34.4	52.5
Processed	341.3	270.1	263.2	268.8	245.4	240.0	316.1	189.5	183.9	170.0	210.8	189.4	172.1	155.4	150.2	145.3	101.4	88.0	99.7	89.5	84.5	65.6
Wild Salmon	172.6	127.2	128.9	96.2	106.3	73.3	109.7	76.8	79.0	59.7	68.8	77.3	62.4	59.2	53.3	51.0	50.0	41.4	43.6	30.0	39.3	35.3
Farmed Salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Herring	153.1	127.0	116.3	148.3	125.6	151.2	193.5	95.5	86.6	91.1	122.9	96.4	90.4	80.8	83.2	81.1	42.9	39.3	47.3	49.0	37.7	17.6
Halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other groundfish	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Other finfish	3.1	3.1	5.7	10.1	6.0	7.0	7.0	6.7	8.4	10.3	8.0	6.4	9.5	9.9	2.8	3.9	3.5	2.2	2.0	3.3	1.8	2.3
Shellfish	12.5	12.9	12.1	14.2	7.5	8.4	5.9	9.6	9.1	8.1	11.1	9.4	9.8	5.5	10.9	9.3	5.0	5.0	6.8	7.2	5.7	10.4
Other*	15.8	12.8	14.1	15.3	20.6	16.8	13.8	14.4	14.0	14.1	16.2	18.4	24.4	27.1	19.3	20.2	20.6	19.9	19.1	22.4	22.4	24.0
Other Finfish & Shellfish	7.3	5.4	5.4	5.5	6.1	8.5	5.8	5.6	5.1	5.6	7.6	9.3	8.7	11.3	9.2	9.8	12.4	12.1	7.8	8.8	10.4	11.1
Other related products	8.5	7.4	8.7	9.9	14.5	8.4	8.0	8.8	8.8	8.5	8.6	9.1	15.8	15.8	10.1	10.4	8.2	7.8	11.3	13.6	12.1	12.9
Total fish & fish products	776.5	703.4	728.2	802.6	911.0	848.3	845.3	829.6	813.9	853.5	904.1	974.5	1029.9	996.9	984.2	995.6	986.4	904.6	910.6	882.6	956.9	911.3
Boats and Gear	21.2	19.0	14.5	22.2	33.1	37.1	59.9	53.9	97.0	114.1	92.2	181.0	186.8	163.5	108.1	108.1	88.0	75.0	69.2	54.6	58.3	55.6
Total, Fish & Seafood Products	797.7	722.4	742.6	824.8	944.1	885.4	905.2	883.5	910.8	967.6	996.4	1155.4	1216.7	1160.4	1092.3	1103.6	1074.4	979.7	979.8	937.2	1015.2	967.0

Source: BC Stats

Table 7a: Exports of BC fish and seafood products by level of processing (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fresh	13.7	19.8	13.1	22.8	19.6	12.0	-12.5	20.8	11.7	12.6	-1.7	16.9	8.2	-8.8	-9.6	2.2	5.0	0.4	-1.4	-2.1	8.2	-6.6
Wild Salmon	23.6	-13.8	-65.3	33.4	-17.1	-48.0	-28.2	25.8	-23.1	-25.9	-26.4	120.1	107.2	18.1	15.5	-13.1	9.5	-16.9	-34.2	3.7	191.4	-40.0
Farmed Salmon	32.3	288.9	107.4	19.9	25.9	24.7	-14.8	39.4	15.8	5.9	-11.1	58.8	6.8	-19.1	-24.1	27.8	13.5	0.5	2.8	-1.8	-2.8	-1.3
Herring	247.1	-93.9	1368.9	79.5	-31.8	-31.9	-41.0	285.3	2.8	28.3	26.7 -	-		-58.2	350.4	157.9	-51.1	70.9	-93.0	-42.4	259.6	310.2
Halibut	136.0	61.2	19.0	51.2	24.4	-13.9	-4.0	13.9	22.8	55.7	-8.6	-1.3	30.8	4.1	-19.0	-33.9	1.0	-10.2	-19.5	-24.1	7.8	-1.9
Other groundfish	-41.6	25.3	7.2	4.9	-5.5	-3.9	-38.8	-12.9	47.9	-0.9	42.9	12.6	34.1	-8.5	37.9	-2.6	-34.0	-5.0	8.3	-7.8	9.2	-28.2
Other finfish	14.2	-4.0	10.0	11.5	8.0	28.9	0.5	22.6	39.0	27.5	27.0	-58.6	-2.4	-8.8	0.2	-8.7	-13.0	2.8	1.6	-7.2	13.9	-3.4
Shellfish	-2.7	22.2	59.6	20.4	37.9	20.3	-10.2	-4.3	-12.0	3.1	-0.9	13.1	-14.2	17.2	21.2	-18.1	-1.8	10.8	-0.8	5.5	9.0	-5.0
Frozen	-4.7	-13.8	1.3	6.3	30.6	-32.4	-13.6	22.7	-27.4	-3.1	11.3	1.8	10.6	20.2	25.6	1.2	2.6	-23.8	1.4	-4.0	15.7	4.6
Wild Salmon	-7.9	-23.7	5.1	7.0	27.5	-53.6	-29.3	41.7	-45.6	-32.9	17.3	4.6	41.2	3.7	36.3	-19.1	-4.0	-31.6	-19.1	14.9	76.6	-17.9
Farmed Salmon	168.0	-0.5	-52.2	-3.7	-76.7	-48.6	9.5	-29.6	723.1	-68.9	284.9	46.4	605.9	-63.1	70.3	-85.5	137.5	-81.2	-42.0	278.9	45.9	-71.9
Herring	197.7	16.4	23.6	4.2	36.2	47.6	9.3	55.8	77.2	-66.0	-5.1	62.2	-11.1	39.1	-3.5	19.5	49.2	-57.2	-12.3	28.9	15.7	6.9
Halibut	-38.9	1.0	-35.9	-73.6	93.0	81.3	-44.7	13.5	150.9	152.1	26.7	-15.6	-1.6	36.5	-19.4	-77.1	37.1	-55.4	9.5	-42.7	-8.7	134.6
Other groundfish	18.8	-63.5	187.1	9.4	30.1	9.4	-19.9	8.6	-20.7	34.4	2.0	-5.2	-5.7	21.3	44.3	32.9	24.9	-19.8	11.0	-20.6	-0.8	12.1
Other finfish	17.1	400.6	-61.1	4.9	40.2	14.9	-21.9	24.5	2.6	50.5	-29.2	36.2	21.5	-0.1	34.4	-3.8	-28.9	-5.2	20.6	-19.2	39.6	-6.2
Shellfish	-7.8	-11.4	15.1	6.8	78.2	62.5	67.0	-2.7	-36.3	-15.2	85.9	-20.8	-28.4	108.5	-0.4	17.6	-4.0	-22.2	-10.7	33.1	-30.6	52.9
Processed	4.8	-20.8	-2.6	2.1	-8.7	-2.2	31.7	-40.1	-3.0	-7.5	24.0	-10.1	-9.2	-9.7	-3.4	-3.2	-30.2	-13.2	13.3	-10.2	-5.6	-22.3
Wild Salmon	1.2	-26.3	1.4	-25.3	10.4	-31.0	49.6	-30.0	2.9	-24.4	15.2	12.3	-19.3	-5.1	-9.9	-4.5	-2.0	-17.1	5.2	-31.2	31.0	-10.1
Farmed Salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Herring	4.1	-17.0	-8.4	27.5	-15.3	20.4	28.0	-50.7	-9.3	5.2	34.9	-21.6	-6.2	-10.6	3.0	-2.5	-47.1	-8.4	20.3	3.7	-23.0	-53.4
Halibut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other groundfish	-	-	-	-87.6	-	-	-81.5	2643.1	-5.1	3.6	-97.2	6.8	-	-	-	-	-	-	-	-	-	-95.1
Other finfish	-17.0	0.9	82.4	77.0	-40.1	16.7	-0.7	-3.3	25.2	22.4	-22.8	-20.3	49.4	4.1	-72.1	41.8	-10.1	-38.0	-8.1	64.6	-46.9	33.7
Shellfish	187.0	2.8	-6.4	17.6	-47.1	11.5	-29.4	63.2	-6.0	-10.7	36.7	-15.3	4.9	-43.7	96.3	-14.5	-45.9	0.5	34.6	6.2	-21.4	82.7
Other*	-27.9	-19.3	10.1	8.9	34.6	-18.4	-17.7	4.1	-3.1	0.8	15.2	13.4	33.0	10.9	-28.9	4.8	2.0	-3.6	-3.9	17.4	0.1	7.0
Other Finfish & Shellfish	-23.5	-25.9	-0.7	1.6	11.5	38.9	-31.1	-3.5	-8.4	8.5	36.9	21.6	-6.8	30.2	-18.6	6.9	26.2	-2.3	-35.6	12.6	18.2	6.8
Other related products	-31.2	-13.7	18.0	13.4	47.3	-42.4	-4.2	9.7	0.2	-3.8	1.0	6.2	73.7	0.3	-36.3	2.9	-20.9	-5.5	45.4	20.8	-11.6	7.2
Total fish & fish products	2.4	-9.4	3.5	10.2	13.5	-6.9	-0.3	-1.9	-1.9	4.9	5.9	7.8	5.7	-3.2	-1.3	1.2	-0.9	-8.3	0.7	-3.1	8.4	-4.8
Boats and Gear	22.7	-10.4	-23.7	53.5	48.9	12.3	61.4	-10.0	79.8	17.7	-19.2	96.2	3.2	-12.5	-33.9	-0.1	-18.5	-14.7	-7.8	-21.1	6.7	-4.5
Total, Fish & Seafood Products	2.9	-9.4	2.8	11.1	14.5	-6.2	2.2	-2.4	3.1	6.2	3.0	16.0	5.3	-4.6	-5.9	1.0	-2.6	-8.8	0.0	-4.3	8.3	-4.7

Source: BC Stats

<sup>\*</sup> Includes fish meal and similar products

Subcategories may not add to totals due to the exclusion of codes not categorizable to species

<sup>\*</sup> Includes fish meal and similar products

Subcategories may not add to totals due to the exclusion of codes not categorizable to species

Table 8: Imports of fish and seafood products consumed in BC (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fresh	11.0	11.8	11.7	12.7	16.2	62.9	23.1	22.7	36.5	90.4	96.7	91.2	82.2	78.1	97.2	111.5	91.6	124.2	142.4	137.7	165.0	162.2
Wild Salmon	0.9	0.8	0.6	1.4	1.7	13.8	3.0	1.7	4.6	12.3	12.4	9.5	8.6	12.1	15.0	18.6	15.6	18.6	20.2	19.6	18.6	24.5
Farmed Salmon	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	3.8	4.1	1.4	2.0	8.1	6.1	5.4	4.9	22.1	20.7	32.0	13.9
Herring	0.1	0.1	0.2	0.1	0.2	1.1	0.6	0.3	0.3	0.9	1.1	1.5	0.9	0.6	0.7	0.2	0.2	0.2	0.1	0.4	0.5	0.5
Halibut	0.2	0.3	0.1	0.2	0.3	0.9	0.3	0.2	2.3	6.1	5.7	7.4	7.4	7.3	8.4	9.1	7.3	14.4	13.5	12.8	14.0	9.2
Other groundfish	1.3	1.8	1.3	0.9	1.0	3.8	1.7	1.5	1.7	3.4	3.3	3.6	3.1	2.7	2.7	2.9	3.0	7.5	8.2	7.3	6.9	9.3
Other finfish	3.9	3.9	4.1	4.0	4.8	14.2	4.6	4.4	8.2	15.7	18.8	18.6	15.8	13.6	17.4	20.5	16.8	23.9	25.0	25.3	25.2	27.1
Shellfish	4.6	4.9	5.4	6.0	8.1	28.9	12.8	14.5	19.4	51.8	51.5	46.4	45.0	39.8	45.0	54.1	43.3	54.7	53.3	51.6	67.8	77.8
Frozen	74.5	79.2	84.5	114.7	147.8	140.0	181.9	130.2	138.0	192.0	234.5	210.3	192.1	181.6	199.9	208.0	186.2	160.3	160.2	185.4	177.1	208.9
Wild Salmon	3.8	3.8	4.2	5.8	5.0	7.8	7.7	5.1	4.1	9.3	10.1	7.3	7.7	12.5	14.5	14.9	14.6	14.5	16.1	19.8	15.8	20.9
Farmed Salmon	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.2	0.5	0.3	0.1	0.1	0.2	0.5	0.4	0.1	0.1	1.5	1.3	0.9	0.0
Herring	0.7	0.5	0.8	0.3	0.4	0.8	3.0	2.0	0.7	0.5	0.9	1.0	1.1	1.2	1.5	1.2	0.4	0.3	0.9	1.8	1.1	0.8
Halibut	4.3	4.1	4.6	6.7	7.0	5.0	7.4	5.1	4.2	8.2	9.2	7.0	8.5	8.0	7.8	9.2	10.3	8.4	6.4	8.8	9.5	11.9
Other groundfish	11.7	13.4	16.1	27.9	44.1	42.6	47.3	35.4	39.1	47.0	48.8	44.8	49.6	52.8	51.2	44.7	35.2	26.5	27.4	29.3	27.2	28.7
Other finfish	5.7	6.8	7.4	10.0	15.3	17.8	14.8	13.2	15.3	18.6	19.9	19.2	23.5	21.5	25.7	33.0	32.5	30.7	32.8	41.0	39.4	49.2
Shellfish	48.4	50.5	51.4	63.8	75.8	65.8	101.7	69.3	74.3	107.7	145.3	130.9	101.7	85.5	98.8	104.6	93.1	79.9	75.1	83.5	83.2	97.3
Processed	23.7	25.4	27.1	46.6	61.6	77.3	74.3	65.0	85.0	103.0	129.0	121.7	123.0	107.8	98.4	103.4	86.5	88.6	106.5	116.0	107.3	121.9
Wild Salmon	2.0	1.3	1.6	6.7	9.9	12.8	11.4	7.6	13.0	19.7	24.6	21.7	18.5	17.9	16.4	15.9	11.1	14.4	16.6	19.6	16.6	18.5
Farmed Salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Herring	0.3	0.3	0.3	0.6	0.7	0.7	0.8	0.4	0.5	0.5	0.9	0.5	0.9	0.7	0.6	0.4	0.4	0.3	0.4	0.4	0.4	0.4
Halibut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other groundfish	0.1	0.1	0.1	0.3	1.1	1.3	2.2	1.2	1.8	1.8	3.9	2.9	1.8	2.3	2.1	2.1	1.3	1.2	1.2	1.6	1.7	2.0
Other finfish	12.7	14.7	14.3	23.4	28.9	40.0	38.0	36.5	45.4	51.6	63.6	62.1	64.0	48.6	44.1	47.2	41.1	39.9	51.9	53.5	50.2	54.8
Shellfish	8.6	9.0	10.7	15.6	20.9	22.5	21.9	19.3	24.4	29.4	36.0	34.4	37.9	38.4	35.3	37.7	32.6	32.9	36.3	40.9	38.4	46.2
Other*	3.6	3.3	5.0	5.2	13.1	22.6	19.8	29.3	29.6	31.0	30.7	37.6	34.5	36.4	33.9	39.8	51.6	45.7	51.5	52.8	66.2	67.2
Other Finfish & Shellfish	0.6	0.5	0.6	0.7	0.8	4.9	1.1	1.3	2.6	4.9	4.7	5.2	5.8	5.3	6.3	6.6	6.5	9.2	10.3	11.1	10.5	9.8
Other related products	3.0	2.8	4.4	4.5	12.4	17.7	18.7	28.0	26.9	26.1	26.0	32.4	28.8	31.2	27.6	33.2	45.0	36.5	41.2	41.7	55.7	57.4
Total fish & fish products	112.8	119.6	128.3	179.1	238.7	302.8	299.0	247.2	289.1	416.3	490.8	460.8	431.8	403.9	429.4	462.7	415.8	418.9	460.5	491.9	515.6	560.2
Boats and Gear	41.1	40.6	45.0	34.8	72.2	83.3	57.4	72.1	82.7	83.6	79.7	74.6	89.5	103.4	342.9	190.8	247.9	164.3	188.1	118.4	129.2	128.3
Total, Fish & Seafood Products	153.9	160.2	173.3	214.0	310.9	386.1	356.4	319.3	371.7	500.0	570.6	535.4	521.3	507.3	772.3	653.5	663.7	583.1	648.7	610.2	644.8	688.5

Source: BC Stats

Table 8a: Imports of fish and seafood products consumed in BC (% change)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fresh	6.2	7.3	-0.3	8.3	27.0	289.1	-63.3	-1.5	60.7	147.5	7.0	-5.7	-9.9	-5.0	24.6	14.7	-17.9	35.6	14.6	-3.3	19.8	-1.7
Wild Salmon	-35.6	-16.0	-21.8	129.7	23.4	710.9	-78.1	-43.5	170.2	168.3	0.7	-23.4	-9.8	40.9	23.8	24.1	-16.3	19.6	8.3	-2.7	-5.0	31.6
Farmed Salmon	90.9	90.5	145.0	116.3	-42.5	1311.5	-70.0	9.7 -	-		9261.2	7.1	-65.8	41.0	312.0	-24.6	-11.9	-8.6	349.2	-6.5	54.6	-56.7
Herring	-14.8	37.1	60.7	-33.7	101.1	378.0	-43.1	-55.7	20.3	194.2	18.3	36.0	-38.5	-38.9	16.4	-69.3	6.5	-8.4	-38.9	259.7	22.1	-11.9
Halibut	59.0	46.6	-50.9	55.8	40.2	229.3	-72.6	-23.2	1068.7	167.0	-7.3	30.9	-0.1	-1.3	14.1	9.0	-19.7	96.0	-6.0	-5.3	9.2	-33.9
Other groundfish	52.9	37.4	-27.7	-27.9	11.9	262.3	-54.2	-12.5	10.5	104.5	-2.7	8.3	-15.3	-12.8	-0.4	10.0	2.2	151.3	8.9	-11.1	-5.0	34.0
Other finfish	21.0	1.2	5.0	-2.0	19.3	195.8	-67.8	-3.2	86.0	90.4	19.7	-0.9	-15.3	-13.7	28.1	17.6	-17.8	42.3	4.5	1.2	-0.6	7.7
Shellfish	-0.8	6.3	10.0	11.3	33.7	257.6	-55.6	13.3	33.2	167.4	-0.5	-9.9	-3.1	-11.5	13.1	20.1	-20.0	26.3	-2.6	-3.1	31.4	14.8
Frozen	-3.1	6.3	6.7	35.7	28.9	-5.3	30.0	-28.4	6.0	39.1	22.2	-10.3	-8.7	-5.4	10.1	4.1	-10.5	-13.9	-0.1	15.7	-4.5	18.0
Wild Salmon	-23.3	0.9	10.2	36.5	-13.1	55.3	-1.4	-33.2	-19.7	126.6	8.7	-27.7	4.5	62.4	16.3	2.8	-1.9	-1.1	11.1	23.0	-19.9	32.0
Farmed Salmon	-47.2	121.5	-49.6	196.2	166.7	-48.6	60.7	-33.6	61.4	156.2	-46.4	-64.0	-15.5	134.5	159.4	-17.9	-81.9	33.8	1418.2	-17.5	-30.9	-94.9
Herring	-16.9	-29.2	70.7	-60.8	36.2	97.3	257.3	-33.3	-65.9	-21.3	61.3	19.4	8.4	9.8	20.8	-19.5	-64.6	-16.7	147.8	104.8	-35.4	-26.7
Halibut	-4.4	-3.1	12.0	46.0	3.2	-28.1	47.0	-30.6	-16.9	93.7	12.1	-24.5	21.6	-5.6	-2.1	17.2	12.2	-18.4	-23.5	37.4	7.6	25.3
Other groundfish	2.8	14.4	20.2	73.5	58.0	-3.5	11.0	-25.0	10.4	20.1	3.8	-8.3	10.8	6.4	-3.0	-12.6	-21.3	-24.8	3.3	7.0	-7.1	5.7
Other finfish	-26.9	19.8	8.1	36.3	52.3	16.4	-16.9	-11.1	16.5	21.5	7.0	-3.5	22.0	-8.3	19.4	28.6	-1.5	-5.7	7.1	25.0	-4.0	25.0
Shellfish	1.9	4.4	1.7	24.2	18.8	-13.1	54.5	-31.9	7.2	45.1	34.9	-9.9	-22.3	-15.9	15.5	5.9	-11.1	-14.2	-5.9	11.1	-0.3	16.9
Processed	-19.7	7.1	6.7	72.0	32.3	25.6	-3.9	-12.5	30.9	21.1	25.2	-5.7	1.1	-12.3	-8.8	5.1	-16.3	2.5	20.2	8.9	-7.5	13.6
Wild Salmon	21.2	-34.6	21.1	331.0	47.7	29.1	-11.3	-33.6	72.2	51.2	24.8	-11.8	-14.7	-3.4	-8.3	-3.0	-30.4	29.8	15.8	17.8	-15.2	11.7
Farmed Salmon		-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Herring	-7.7	4.5	2.7	98.2	19.1	-1.7	11.3	-43.8	9.3	0.1	81.4	-37.4	59.6	-15.1	-23.1	-21.1	-1.3	-27.8	38.1	2.1	-0.5	-9.0
Halibut		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other groundfish	26.5	-36.8	97.5	99.7	302.3	15.7	76.4	-47.6	51.1	1.5	118.4	-25.0	-40.0	28.1	-8.7	4.1	-40.1	-6.1	-2.2	35.1	6.0	20.8
Other finfish	-33.6	15.6	-2.5	63.4	23.7	38.3	-5.2	-3.8	24.3	13.7	23.1	-2.4	3.1	-24.1	-9.3	7.2	-12.9	-3.1	30.2	2.9	-6.1	9.1
Shellfish	3.3	4.7	19.2	44.7	34.2	7.7	-2.5	-12.1	26.5	20.7	22.4	-4.4	10.1	1.3	-8.1	6.7	-13.6	0.9	10.5	12.7	-6.1	20.2
Other*	5.4	-8.1	51.8	4.3	152.3	72.2	-12.6	48.1	0.9	4.9	-1.1	22.6	-8.2	5.6	-6.8	17.2	29.7	-11.3	12.6	2.5	25.4	1.4
Other Finfish & Shellfish	-3.1	-11.2	22.5	7.9	11.8	550.2	-77.7	15.6	108.4	87.2	-4.5	10.3	11.2	-8.7	20.9	3.9	-0.7	40.5	11.9	8.0	-5.5	-6.9
Other related products	7.2	-7.5	57.2	3.7	173.0	43.3	5.2	50.0	-3.9	-3.1	-0.5	24.8	-11.3	8.4	-11.5	20.2	35.7	-18.9	12.8	1.1	33.7	3.0
Total fish & fish products	-6.1	6.1	7.3	39.6	33.2	26.8	-1.2	-17.4	17.0	44.0	17.9	-6.1	-6.3	-6.4	6.3	7.7	-10.1	0.7	9.9	6.8	4.8	8.6
Boats and Gear	-14.0	-1.3	10.9	-22.5	107.3	15.4	-31.1	25.7	14.6	1.2	-4.7	-6.4	20.0	15.4	231.7	-44.4	29.9	-33.7	14.5	-37.1	9.1	-0.7
Total, Fish & Seafood Products	-8.4	4.1	8.2	23.5	45.3	24.2	-7.7	-10.4	16.4	34.5	14.1	-6.2	-2.6	-2.7	52.2	-15.4	1.6	-12.1	11.2	-5.9	5.7	6.8

Source: BC Stats

<sup>\*</sup>Includes fish meal and similar products Subcategories may not add to totals due to the exclusion of things not categorizable to species

<sup>\*</sup> Includes fish meal and similar products Subcategories may not add to totals due to the exclusion of things not categorizable to species

Table 9: BC's trade in fish and seafood products, by country (\$million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Exports	776.5	703.4	728.2	802.6	911.0	848.3	845.3	829.6	813.9	853.5	904.1	974.5	1029.9	996.9	984.2	995.6	986.4	904.6	910.6	882.6	956.9	911.3
us	209.3	234.5	253.7	303.7	336.8	363.7	319.7	390.8	455.1	538.3	518.7	623.1	683.9	622.7	549.6	531.6	549.0	548.6	536.7	517.9	534.2	517.6
Japan	347.5	292.9	295.3	342.3	390.8	313.6	353.3	288.4	203.4	173.0	234.3	199.7	200.2	188.1	216.2	218.0	188.4	137.9	136.1	142.7	171.1	108.8
EU	165.7	117.5	106.2	70.7	83.7	58.0	78.3	54.6	61.9	46.4	49.2	55.2	48.8	64.4	65.5	71.1	70.4	60.3	54.6	44.6	43.0	37.8
Other	54.0	58.5	73.0	86.0	99.7	112.9	94.1	95.8	93.5	95.8	102.0	96.5	97.0	121.7	153.0	174.8	178.6	157.9	183.2	177.3	208.5	247.1
Imports	112.8	119.6	128.3	179.1	238.7	302.8	299.0	247.2	289.1	416.3	490.8	460.8	431.8	403.9	429.4	462.7	415.8	418.9	460.5	491.9	515.6	560.2
US	53.7	54.5	52.7	68.1	81.5	138.3	97.4	81.5	103.9	178.6	195.5	183.4	166.0	152.5	171.0	184.2	145.9	166.9	184.6	191.9	213.4	215.4
Japan	2.5	1.5	1.3	1.8	3.0	2.1	3.5	3.9	3.0	4.3	4.3	3.0	3.3	3.0	3.6	3.9	3.7	3.9	3.8	4.0	3.9	3.9
EÚ	6.5	6.5	5.3	5.7	10.2	16.0	24.1	17.7	12.3	25.2	33.7	23.7	16.2	9.6	9.6	12.9	11.1	9.8	9.6	12.5	15.5	16.2
Other	50.1	57.1	69.1	103.6	144.0	146.4	174.0	144.0	169.8	208.2	257.3	250.7	246.3	238.9	245.2	261.7	255.2	238.3	262.5	283.5	282.9	324.8
Balance	663.8	583.8	599.8	623.5	672.3	545.5	546.3	582.4	524.8	437.1	413.3	513.7	598.1	592.9	554.8	532.9	570.6	485.8	450.0	390.7	441.3	351.1
US	155.6	180.0	201.0	235.5	255.3	225.4	222.3	309.3	351.2	359.7	323.2	439.7	517.9	470.2	378.5	347.5	403.1	381.7	352.0	326.1	320.9	302.2
Japan	345.0	291.4	294.0	340.5	387.8	311.5	349.7	284.6	200.4	168.7	230.0	196.7	196.9	185.2	212.6	214.0	184.6	133.9	132.3	138.7	167.2	104.9
ΕÚ	159.2	111.0	100.9	65.0	73.5	42.0	54.3	36.8	49.5	21.2	15.5	31.5	32.6	54.8	55.9	58.2	59.4	50.5	45.0	32.1	27.5	21.6
Other	4.0	1.4	3.9	-17.6	-44.3	-33.5	-79.9	-48.3	-76.3	-112.4	-155.4	-154.2	-149.3	-117.3	-92.2	-86.9	-76.6	-80.4	-79.3	-106.2	-74.4	-77.7

Source: BC Stats
Country composition of EU has changed over time; data shown based on current definition

#### Table 9a: BC's trade in fish and seafood products, by country

(% change)

	4000	1001	1000	1000	1001	1005	4000	4007	1000	4000	0000	2021	0000	2000	0004	2025	0000	0007	0000	2000	0010	2011
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Exports	2.4	-9.4	3.5	10.2	13.5	-6.9	-0.3	-1.9	-1.9	4.9	5.9	7.8	5.7	-3.2	-1.3	1.2	-0.9	-8.3	0.7	-3.1	8.4	-4.8
US	7.0	12.1	8.2	19.7	10.9	8.0	-12.1	22.3	16.4	18.3	-3.6	20.1	9.8	-9.0	-11.7	-3.3	3.3	-0.1	-2.2	-3.5	3.2	-3.1
Japan	-0.7	-15.7	0.8	15.9	14.2	-19.8	12.6	-18.4	-29.5	-15.0	35.4	-14.8	0.2	-6.0	14.9	0.8	-13.6	-26.8	-1.3	4.9	19.9	-36.4
EÚ	11.9	-29.1	-9.6	-33.5	18.4	-30.6	35.0	-30.4	13.4	-25.0	5.9	12.2	-11.5	32.0	1.6	8.7	-1.0	-14.4	-9.4	-18.3	-3.5	-12.1
Other	-16.3	8.2	24.9	17.8	15.9	13.2	-16.7	1.8	-2.4	2.5	6.4	-5.4	0.5	25.4	25.8	14.2	2.2	-11.6	16.0	-3.2	17.6	18.5
Imports	-6.1	6.1	7.3	39.6	33.2	26.8	-1.2	-17.4	17.0	44.0	17.9	-6.1	-6.3	-6.4	6.3	7.7	-10.1	0.7	9.9	6.8	4.8	8.6
US	-1.0	1.5	-3.4	29.4	19.6	69.7	-29.6	-16.3	27.5	71.9	9.5	-6.2	-9.5	-8.2	12.2	7.7	-20.8	14.4	10.7	3.9	11.2	1.0
Japan	-42.0	-39.3	-14.8	37.8	69.8	-30.9	70.4	9.4	-21.6	42.6	-1.0	-28.9	7.9	-9.4	21.0	9.8	-5.5	5.5	-2.4	5.2	-3.8	0.0
EÚ	25.8	0.8	-19.4	7.4	79.7	57.7	50.3	-26.3	-30.4	104.0	33.8	-29.6	-31.7	-40.6	0.0	34.4	-14.5	-11.7	-1.6	30.0	24.2	4.4
Other	-11.2	13.9	21.1	49.9	39.0	1.6	18.9	-17.2	17.9	22.7	23.6	-2.6	-1.7	-3.0	2.6	6.7	-2.5	-6.6	10.1	8.0	-0.2	14.8
Balance	4.1	-12.0	2.8	3.9	7.8	-18.9	0.1	6.6	-9.9	-16.7	-5.5	24.3	16.4	-0.9	-6.4	-3.9	7.1	-14.9	-7.4	-13.2	12.9	-20.4
US	10.1	15.7	11.7	17.2	8.4	-11.7	-1.4	39.2	13.5	2.4	-10.1	36.1	17.8	-9.2	-19.5	-8.2	16.0	-5.3	-7.8	-7.4	-1.6	-5.8
Japan	-0.2	-15.5	0.9	15.8	13.9	-19.7	12.3	-18.6	-29.6	-15.8	36.4	-14.5	0.1	-6.0	14.8	0.7	-13.7	-27.5	-1.2	4.8	20.6	-37.3
EU	11.4	-30.3	-9.1	-35.6	13.1	-42.8	29.1	-32.1	34.5	-57.1	-27.1	103.1	3.7	68.1	1.9	4.2	2.0	-14.9	-11.0	-28.6	-14.3	-21.4
Other	-51.4	-64.2	176.1	-550.1	152.4	-24.5	138.9	-39.6	58.1	47.4	38.2	-0.8	-3.2	-21.5	-21.4	-5.8	-11.8	5.0	-1.4	33.9	-30.0	4.4

Source: BC Stats
Country composition of EU has changed over time; data shown based on current definition



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Web: www.bcstats.gov.bc.ca Twitter: @BCStats

Phone: 250-387-0327 Email: BC.Stats@gov.bc.ca BC Stats Box 9410 Stn Prov Govt Victoria, B.C. V8V 9V1

