British Columbia's Fisheries & Aquaculture Sector

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BRITISH COLUMBIA

Ministry of Management Services

BC STATS

Table of Contents

List of Tables

Introduction

This is the third edition of a report on the fisheries and aquaculture sector, commissioned from BC STATS by the Ministry of Agriculture, Food & Fisheries. The first report, which was released early in 2000, presented estimates of gross domestic product (GDP[1]), revenue, employment and earnings in the province's fisheries and aquaculture sector for the period from 1984 to 1997. Also included were data on international trade in fish and seafood products, as well as counts of the number of fishing-related establishments in the province for selected years.

The initial report represented the first-ever attempt to provide an overview of all four components of the province's fisheries and aquaculture sector, which includes the following industries:

- Commercial fisheries;
- Aquaculture (fish and shellfish farming);
- Fish processing; and
- Sport fisheries (freshwater and saltwater)

The report was the first to put all four component industries in the sector on a consistent footing, using standard concepts and data similar to those used to assess other sectors such as forestry, agriculture, tourism and high tech. This made 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 vis-à-vis the rest of the economy will provide a basis for a better understanding of the current structure and long-term prospects of British Columbia's fisheries and aquaculture sector.

What's new in this report?

This edition of the report updates the previously published information, and extends the data to the year 2001.

A change in how industries are classified

Previous editions of the report were based on information classified using the 1980 Standard Industrial Classification System (SIC). During the last few years, Statistics Canada has been moving over to a new classification system, known as the North American Industrial Classification System (NAICS), which has also been adopted by the United States and Mexico. This means that industry data for the three countries will eventually be completely comparable. In Canada, the conversion from SIC to NAICS is now complete, and virtually all of the information reported by Statistics Canada is now based on this system.

[1] GDP is a measure of the value added by an industry or activity to the economy. It is equal to total revenue from the sale of goods or services produced by the industry less the cost of materials and purchased services consumed in the process of production.

However, many of the NAICS-based series are only published from 1997 on. Because the industry classification changes were significant in some cases, it was necessary to link previously-published SIC-based estimates with the new data. Virtually every industry was affected to some degree by the classification change. In the fisheries and aquaculture sector, the changes are most noticeable in the sport fishing industry, where the estimates are generated by taking proportions of totals for standard industry groups. The revenue, expenditure and employment estimates in this edition of the report are now derived using NAICS information.

Other changes to the data

- A conversion to a base year of 1997 (currently in use by Statistics Canada) for the constant dollar GDP estimates. All real GDP figures have been restated using 1997 dollars.
- Expenditure estimates from the 2000 Survey of Recreational Anglers were incorporated in the sport fishing data. Estimates for the period from 1995 on were affected by this change.

Future revisions to the data

Statistics Canada will be introducing consistent historical series on a NAICS basis for some economic indicators in the future. This means that there may yet be some adjustments to the historical (pre-1997) period as more complete information on a NAICS basis is published by the agency.

Because the methodology used to produce the estimates in this document has only recently been developed, it is likely that the data developed for the fisheries and aquaculture sector will continue to exhibit some variability. When new data series are being developed, it typically takes a few iterations before a methodology for producing estimates becomes completely stable.

The remainder of this paper presents the results of the study, including an overview of the sector and each of its component industries. A brief summary of the methodology used to derive the estimates has also been included.

Highlights

BC's fisheries and aquaculture sector generated $601 million of the province's gross domestic product in 2001

- The fisheries and aquaculture sector generated $601 million of the province's real[2] gross domestic product (GDP) in 2001[3]. It accounted for less than one percent (0.5%) of BC's total GDP at basic prices, which reached $114 billion in that year.
- Compared to other industries, the fisheries and aquaculture sector is relatively small. Agriculture and related food-processing industries generated a real GDP of almost $3 billion in 2001. As a whole, resource-based industries (agriculture, fishing, forestry, mining, and related processing activities) accounted for about 15% of BC's total economic output in 2001.

Table 1[4]

Gross domestic product ($1997 million)	***2000***	***2001***	***% of total***	***% change since 1984***
Fisheries & aquaculture	***564***	***601***	***0.5***	***-5.0***
Commercial fishery	157	170	0.1	-14.9
Aquaculture	85	116	0.1	4,907.2
Fish processing	89	82	0.1	-52.4
Sport fishing	233	233	0.2	-9.8
Goods sector	30,293	29,102	25.6	37.0
All resource-based industries	17,837	17,256	15.2	27.8
Agriculture & food	2,496	2,585	2.3	42.3
Service sector	82,764	84,746	74.4	82.0
Total, all industries	***113,058***	***113,849***	***100.0***	***68.2***

- The largest industry within the fisheries and aquaculture sector is sport fishing, with a total GDP of $233 million in 2001. Fish processing ($82 million), the commercial fishery ($170 million) and aquaculture ($116 million) make smaller contributions to BC's GDP.
- Both goods and service-producing industries are included in the fisheries and aquaculture sector. The commercial, fishery, aquaculture and fish processing

*[2] GDP data quoted here are in **constant, or real (1997) dollars**. This means that they have been adjusted to eliminate the effect of price changes over time. Changes in real GDP indicate the degree to which economic activity in an industry has increased or decreased. Current dollar estimates, which are not adjusted for inflation, may grow or shrink as a result of price changes as well as changes in economic activity.*

[3] The data presented in this paper is based on information available as of September 2002.

[4] 1984 is the first year for which comparable GDP data is available for all industries, and is used as a reference point for long-run comparisons

industries are part of the goods sector while sport fishing activities are included in the service sector.

Goods and service producing industries

Commercial fishing, aquaculture (both finfish and shellfish farming) and fish processing are all part of the **goods-producing sector**, which includes industries such as forestry, agriculture or manufacturing–industries that produce a tangible product.

Sport fishing is part of the **service sector**. Service industries do not produce a tangible product. Instead, their output is a service such as retailing, financial services, or accommodation. In the case of the sport fishery, the service provided is the sport fishing experience–everything from guiding to boat rentals or accommodation for recreational anglers.

- The tourism and sport fishing industries overlap, but not completely. A significant percentage of all sport fishing activities are tourist-related (and therefore attributed to both the tourism and sport fishing industries). This includes the GDP related to guiding, transportation, accommodation, food and other services provided to anglers who are also tourists, as well as that which is attributable to non-angling related activities such as visiting attractions or shopping.

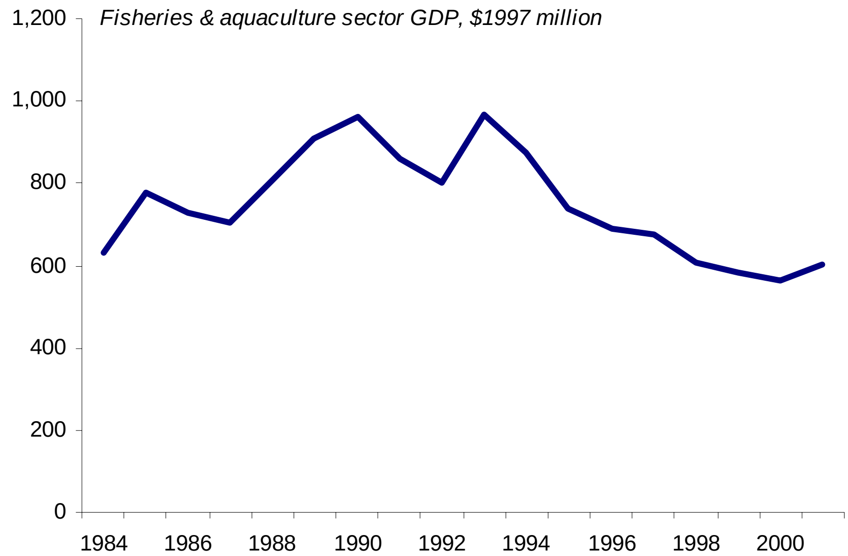
What is Gross Domestic Product (GDP)?

GDP is a measure of the *value added* by an industry or activity to the economy. It is calculated by subtracting the cost of materials and purchased services consumed in the process of production from total revenues received from the sale of goods or services. GDP is one of the two basic measures used to compare the performance and relative size of industries in an economy. The other commonly used measure is employment.

GDP is preferred over other measures such as revenues because it includes only the value attributable to the activities which occur in an industry and thus avoids the problem of double-counting the value of goods and services consumed in production

- The slower growth of the fisheries and aquaculture sector in recent years partly mirrors a general shift in the economy away from goods production and towards service industries. Between 1984 and 2001, the GDP originating in the goods sector grew 37%, less than half of the 82% increase in the size of service-producing industries.

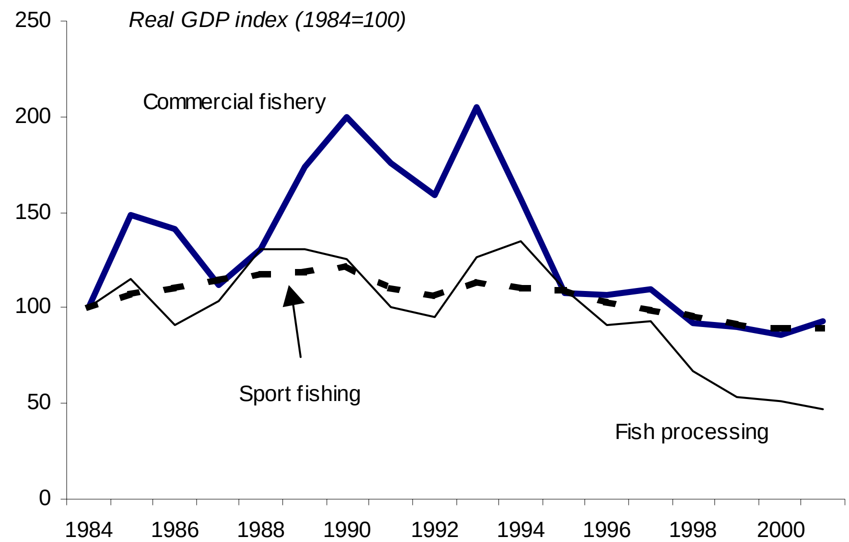
The fisheries and aquaculture sector shrank during the late 1990s, but made a modest improvement in 2001



Source: BC STATS
Figure 1

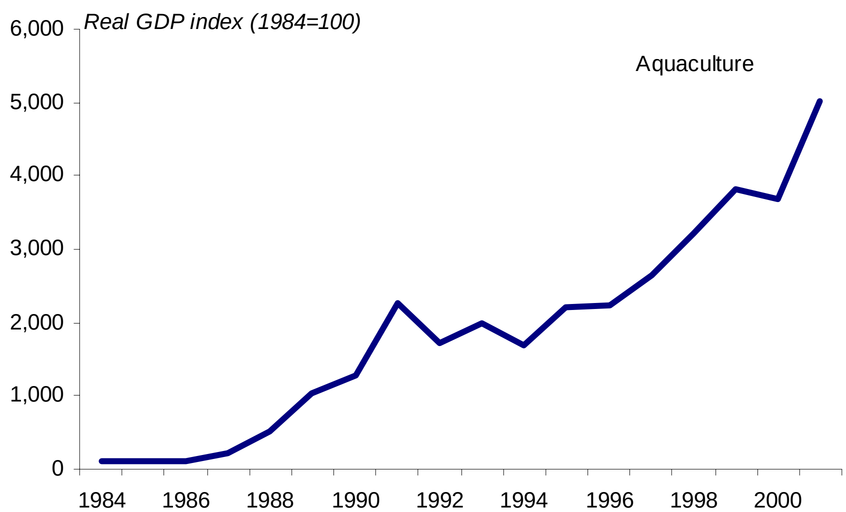
- The last few years have been extremely challenging ones for the commercial salmon fishery, as the catch dropped to its lowest level in a century, and has remained at near-historic lows. GDP data for the commercial fishery and fish processing industries reflect this dramatic decline.
- Government initiatives to reduce the number of salmon fishing licences, together with a decline in the stock of salmon available for harvest, had a big effect on the province's fisheries and aquaculture sector during the latter half of the 1990s. GDP in both the commercial fishery and the fish-processing sector fell sharply. Sport fishing GDP also decreased, but the downturn in this industry was not as severe.
- Offsetting the weakness in the commercial fishing and fish processing industries was a substantial rise in the value of aquaculture activities in the province during the 1990s, as the output of the finfish and shellfish farming industry continued to expand. BC's aquaculture industry is the biggest in the country. Its contribution to total GDP was $116 million in 2001. In real terms, the industry has grown by a factor of more than 50 since 1984, when its GDP was just $2.3 million.

Both the commercial fishery and fish processing industries saw substantial declines during the late 1990s as the salmon catch fell to historic lows.



Source: BC STATS
Figure 2

Strong growth in BC's aquaculture industry continues to boost the sector's overall performance



Source: Statistics Canada & BC STATS
Figure 3

More than 20,000 British Columbians were employed[5] in the fisheries and aquaculture sector in 2001

- An estimated 20,100 British Columbians worked in the fisheries and aquaculture sector in 2001. Sport fishing (8,900) was the biggest employer, followed by commercial fishing (5,400), fish processing (3,900), and aquaculture (1,900).
- One percent of all the people with jobs in British Columbia work in the fisheries and aquaculture sector. By comparison, agriculture and related food processing activities employed just over 2% (46,300) of the workers in BC, while the forest sector provided about 5% (90,600) of the jobs in 2001.

The number of people working in the sector has increased during the last two years, after plunging in the late 1990s

- Employment in the fisheries and aquaculture sector is beginning to rise after falling below 1984 levels in 1998 and 1999. Strong job growth in the commercial fishery and fish processing industries since then has helped boost employment in the sector back up to the levels reached during the mid 1990s.
- In 2001, the number of jobs in the fisheries and aquaculture sector was 21% higher than in 1984. The fish processing industry (-5%) was the only industry within the sector where there were fewer jobs than in 1984. Over the long run, employment in sport fishing has grown 18%, and the commercial fishery has expanded 33%. The number of people with jobs in aquaculture has more than doubled (+115%).

Table 2

Employment ('000)	*2000*	*2001*	*% of total*	*% change since 1984*
Fisheries & aquaculture	***17.0***	***20.1***	***1.0***	***21.1***
Commercial fishery	4.6	5.4	0.3	33.1
Aquaculture	1.8	1.9	0.1	114.5
Fish processing	2.2	3.9	0.2	-4.9
Sport fishing	8.4	8.9	0.5	17.9
Goods sector	414.4	392.0	20.2	22.2
Service sector	1,534.7	1,550.4	79.8	67.2
Total, all industries	***1,949.1***	***1,942.4***	***100.0***	***55.6***

The sector's revenue topped $1.9 billion in 2001

- Revenue[6] from sales of fish and seafood products, as well as services provided to recreational anglers topped $1.9 billion in 2001. Of this total, $358 million was

[5] These employment figures are based on information from the Labour Force Survey. They do not distinguish between full-time and part-time workers. The Labour Force Survey numbers were used because they allow for comparison with other industries. Previously-published employment figures from other studies of the commercial fishery and fish processing may differ because they rely on other data sources.

[6] Revenue figures for the commercial fishery and aquaculture industries are based on landed values.

generated by the commercial fishery, $287 million from aquaculture activities, and another $602 million from fish processing. Sport fishing activities generated an estimated $675 million in revenues during 2001.

- Total revenue in the fisheries and aquaculture sector grew 89% between 1984 and 2001. Because revenue is reported in current dollars, this increase reflects the effects of inflation, as well as volume changes over time.
- Within the sector, the strongest growth has been in aquaculture, where revenue has increased from $3.2 million in 1984 to $287 million in 2001.
- All industries in the sector have seen growth over the longer term. In sport fishing, revenue has increased 76%, while the commercial fishery (+49%) and fish processing (+54%) industries have posted smaller gains.

Nearly a billion dollars of fish and seafood products were exported from BC in 2001

- Exports of BC fish and seafood products totalled $971 million[7] in 2001, an increase of 8% over the previous year.
- International shipments of fresh, chilled, frozen and processed commercially caught fish and seafood products accounted for the bulk ($694 million) of total exports. The value of aquaculture (mainly farmed salmon) products shipped to the US and overseas was $269 million.
- The increase in 2001 marked the third straight year in which fish and seafood exports have risen. Exports had been falling during the late 1990s, but the recent gains have pushed the value of exports over pre-1995 levels.
- Exports of wild finfish were up 6% in 2001, as international shipments of salmon rose 9%, and exports of other finfish posted even stronger gains (+25%). At the same time the value of herring (-21%) and halibut (-3%) exports fell below 2000 levels. Shellfish exports were virtually unchanged in 2001.
- Aquaculture product exports improved in 2001, with the value rising 16% largely due to an increase in the value of farmed salmon (+16%) products shipped to the US and overseas. Exports of farmed shellfish products rose 3% in 2001.
- The US is British Columbia's biggest market for fish and seafood products, absorbing $621 million of the $971 million worth of fish and seafood products exported from the province in 2001. Japan ($200 million) is the next-biggest market, while the European Union (EU) purchased $55 million of fish and seafood products from British Columbia producers. Other countries, primarily in Asia, accounted for another $96 million of international shipments from BC.
- The value of fish and seafood exports from BC is about three times as high as its imports of these products. The total trade surplus for fish and seafood products was $666 million in 2001.
- The province has a trade surplus in fish and seafood products with the US (+$495 million), Japan (+$198 million) and the EU (+$49 million), but imported $77 million more fish and seafood products from all other countries than it

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[7] *This total includes fish and seafood-related products such as fish meal.*

exported to them in 2001. Thailand, the Philippines and other parts of Asia are important sources of fish and seafood products consumed in the province.

1. Defining the fisheries and aquaculture sector

The definition of the fisheries and aquaculture sector used in this report was derived in consultation with the Ministry of Agriculture, Food & Fisheries. It covers the activities of the following industries, which are described in more detail below:

- Commercial fishing;
- Aquaculture (fish and shellfish farming);
- Fish processing; and
- Sport fishing (freshwater and saltwater)

Classifying industries

The industry definitions used in this report come from the 1997 North American Industrial Classification System (NAICS), which is now used by Statistics Canada to classify virtually all of the industrial data that it publishes. Previous editions of this report were based on the 1980 Standard Industrial Classification System (SIC).

Commercial fishing 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 includes all establishments primarily engaged in farm-raising finfish, shellfish, or any other kind of aquatic animal or plant. These establishments use some form of intervention in the rearing process to enhance production, such as keeping animals in captivity, regular stocking and feeding, and protecting them from predators.

Fish processing 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.

Sport fishing includes the sport fishing-related activities of all establishments that sell directly to anglers. This includes operators in the transportation, accommodation, food and beverage services, boat and sporting goods retailing, marinas, and other recreation industries. 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 service industries that includes only those services that are sold directly to anglers.

2. What's the best measure to use when comparing industries?

To those who are most familiar with using revenue (e.g., the landed or wholesale value of the fish catch) or the volume of production as the basis for assessing the contribution made by an industry, the notion of using GDP as a yardstick may seem somewhat strange. However, GDP is the measure of economic activity that is most often used to assess trends in the economy and to compare the size of various industries.

The value of goods purchased from other industries is counted more than once when revenue is the basis for comparison

The reason that GDP is the preferred measure is that comparisons based on revenue (or the value of production) are not always meaningful because of the complex interrelationships that exist among industries. When goods produced by one industry are used as inputs by another one, their value ends up being counted in each industry's revenue every time they change hands.

This can be illustrated using an example from within the fisheries and aquaculture sector. 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 his or her investment of $30,000.

Suppose further that the boat owner sells the catch to a fish processing plant, which then turns it into canned salmon that is sold for $180,000[8]. This amount is enough to covers 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 produced 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

[8] *This example is for illustrative purposes only, and is not meant to reflect the actual cost structure in the fishing or fish processing industry.*

Fish processor	
Total revenue (value of sales):	$180,000
less total costs:	
salmon purchased from boat owner	$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 has been counted twice. First, by the fish boat owner who sold it to the fish processor and second, when it was built into the price for which the canned salmon was sold.

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 size of industries because the value of goods that are purchased and used by other firms is counted every time they change hands. When revenue is the basis for comparison, the industry at the beginning of the chain (fishing, in this example) by definition must be smaller than any of the industries (such as fish processing) that use its products. That occurs 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.

GDP avoids this pitfall

This pitfall can be avoided by the use of GDP measures, in which the value of a good or service used in production is counted only once, and is attributed to the producing industry. By eliminating the double counting of inputs, GDP estimates make it possible to compare, across industries, the contribution to the economy made by various economic activities.

What is GDP and how is it calculated?

Gross Domestic Product defined

GDP is a measure of the *value added* by an industry or activity to the economy. It is equal to total revenue from the sale of goods or services produced by the industry less the cost of materials and purchased services consumed in the process of production.

GDP measures the value added by an industry to the economy. 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. What remains is the industry's GDP.

Wages; profits and earnings of owner/operators; interest and investment income, changes in the value of inventories/stock held; and depreciation can all be viewed as measures of the value of the work done by the labour and capital employed in an industry and are included in GDP. Indirect taxes (e.g., PST and GST) levied on products purchased by firms are not included. However, taxes net of subsides on production are included in GDP as it is now measured[9].

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 a business or 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 a business exceeded the total value of all its revenue. This is possible, but highly unlikely, as it would mean that a business was spending more on raw materials, energy and purchased services than it could expect to realize from sales of its product.

Fish boat owner	
Total revenue	$100,000
less cost of materials & services:	
fuel	$30,000
other supplies & services	$10,000
equals: GDP	$60,000

Fish processor	
Total revenue	$180,000
less cost of material & services:	
salmon purchased from boat owner	$100,000
fuel, electricity, other services	$20,000
tins, labels, other materials	$10,000
equals: GDP	$50,000

Going back to our 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.

Is GDP a "level playing field"?

The answer to this question is yes. GDP values the contribution made by each industry on a consistent basis.

[9] Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

In our fictitious example, the fish boat operator had a total revenue of $100,000, and generated a GDP of $60,000. The fish 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 fish-processing firm was the larger of the two.

But 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. In 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 and supplies 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.

The next few sections of this paper contain overviews of trends in the fisheries and aquaculture sector, and the four industries within it. The analysis in these sections focuses primarily on GDP, but includes a discussion of trends in other economic measures such as employment, earnings and revenue.

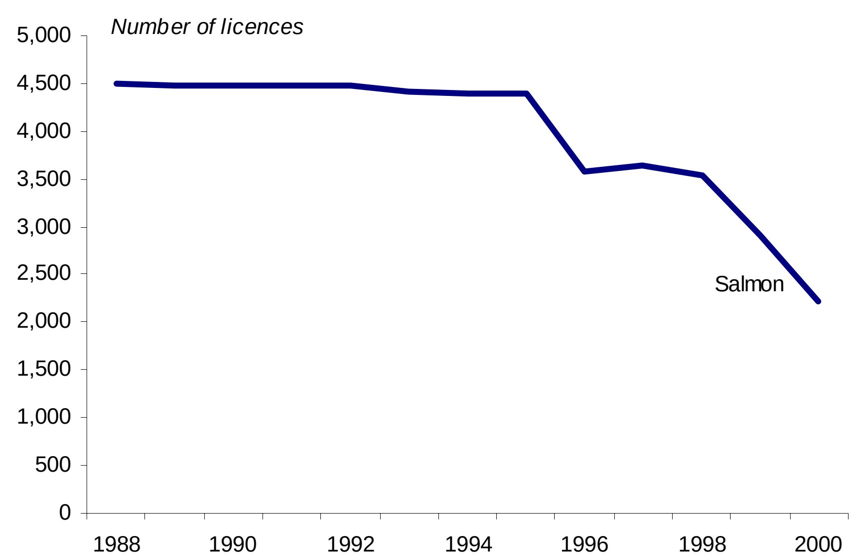
3. An overview of the fisheries and aquaculture sector

Fisheries and aquaculture: an evolving sector of the economy

British Columbia's fisheries and aquaculture sector has undergone substantial changes during the last decade. Historically, the sector was dominated by activities related to the harvest and processing of wild salmon while other species accounted for a relatively small share of the sector's total output. More recently, the commercial fishery in BC has been diversifying, placing an increased emphasis on the harvest of species other than salmon.

Government initiatives to balance the size of the salmon fleet with stocks played an important role in the restructuring of the industry that took place in the late 1990s. The commercial fishery responded to these initiatives by retiring vessels from the active fleet, focussing on the harvest of species other than salmon, and developing new markets for products already being harvested.

The size of the salmon fleet has been halved since the mid-1990s



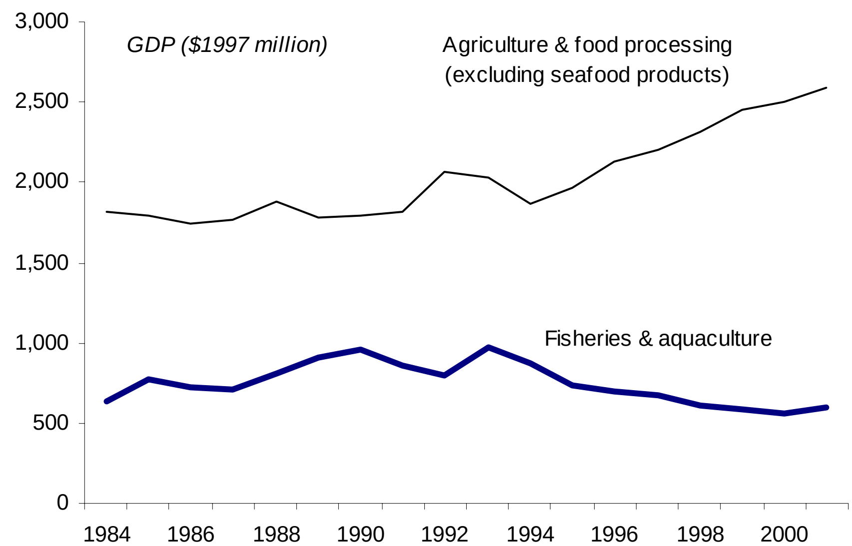
Source: Fisheries & Oceans Canada
Figure 4

At the same time, technological advances have led to the development of a growing aquaculture (farmed finfish and shellfish) industry in the province. In the early 1980s, the industry focussed almost exclusively on shellfish farming, but is now dominated by finfish farming activities. The output of the aquaculture industry has grown to the extent that the landed value of farmed finfish and shellfish produced in BC now rivals that of the wild catch.

BC's fish processing industry processes more than 80 species of both wild and farm-raised fish into seafood products. Both domestic and foreign vessels deliver fish to processing plants in BC ports or to fish processing vessels offshore.

In addition to the goods industries, a variety of businesses catering to recreational anglers operate in British Columbia, and sport fishing activities play an important role not only in fisheries and aquaculture, but also in the province's tourism sector.

BC's fisheries and aquaculture sector is a quarter the size of the agriculture and food processing industry



Source: Statistics Canada & BC STATS
Figure 5

0.5 percent of British Columbia's GDP originates in the fisheries and aquaculture sector

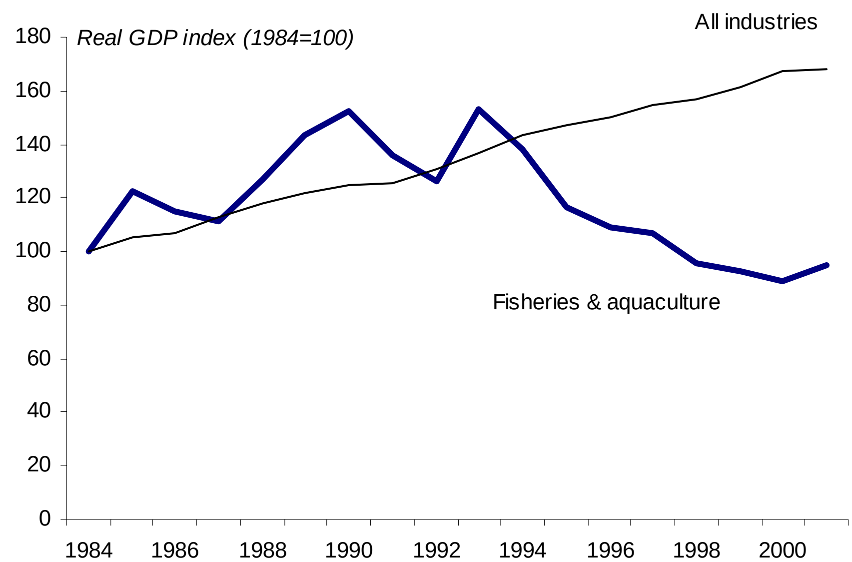
Real GDP in the fisheries and aquaculture sector (including all four industries) was estimated at $601 million in 2001, accounting for 0.5% of the province's total gross domestic product. The sector is currently about a fourth as big as agriculture and food processing. When sport fishing (a service industry) is excluded from the total, the goods-producing side of the fisheries and aquaculture sector makes up 0.3% of BC's total GDP.

The fisheries and aquaculture sector faced significant challenges during the latter half of the 1990s, when real GDP began to decline, largely due to weakness in the commercial fishery and fish processing industries. The sector's GDP, which had peaked at $969 million in 1993, fell throughout the latter part of the 1990s, and only recently has begun to show signs that the downward trend may be reversing. Losses since 1993 totalled nearly 40% of GDP.

In 2001, gains in the commercial fishery and fish processing industries, together with continued growth in aquaculture, contributed to the first advance (+7%) that the sector has recorded since 1993. Sport fishing, where GDP edged down less than half a percent in 2001, was the only industry within the sector to post a decline. The decrease last year was the smallest that the sport fishing industry has seen since the early 1990s.

Because the commercial fishery, fish processing and sport fishing industries depend on a resource stock that varies from year to year, the fisheries and aquaculture sector displays considerable volatility. At times it has outperformed the provincial average in terms of GDP growth, but in recent years the sector has faced significant challenges as the decline in the salmon fishery and uncertainties related to resource management issues in the sport fishing industry adversely affected the sector's performance during the late 1990s.

The fisheries and aquaculture sector is more volatile than other industries



Source: Statistics Canada and BC STATS
Figure 6

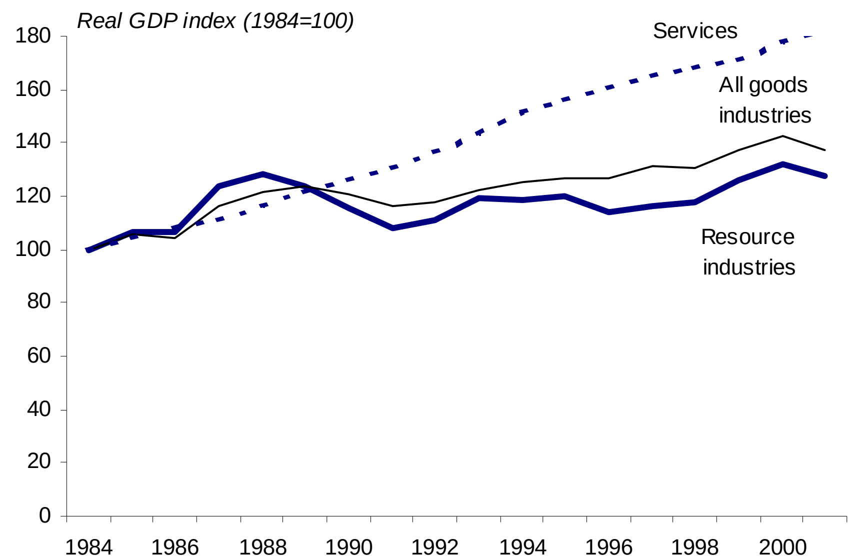
Other resource-based sectors such as agriculture, mining and forestry are also subject to big swings. As a whole, goods-producing industries have not fared well during the last decade and a half. Fishing, forestry and agriculture have all made only modest gains since 1984, despite very strong performances in some years. Of the three, fisheries and aquaculture displays the most volatility and has had the weakest performance during the last decade.

Generally speaking, goods industries, especially those that depend on the extraction and processing of natural resources, tend to experience deeper troughs and higher peaks in output from year to year than do other sectors of the economy. This is partly due to the nature of these industries, as they are subject to a number of externally generated constraints such as availability of supply and changes in world market conditions. These factors also affect other industries, but usually to a lesser extent.

BC's economy, like many others in the developed world, has been shifting away from a focus on resource extraction to a greater service-sector orientation. Three-quarters of the province's total GDP is currently generated by service industries.

Since 1984, goods-producing industries have expanded 37%–less than half the increase (+68%) for the economy as a whole, and well below the 82% expansion seen in the service industries. Over the same period, GDP in the fisheries and aquaculture sector has declined 5%, largely due to its relatively weak performance during the late 1990s.

In general, resource-based industries show considerably more volatility than other industries do

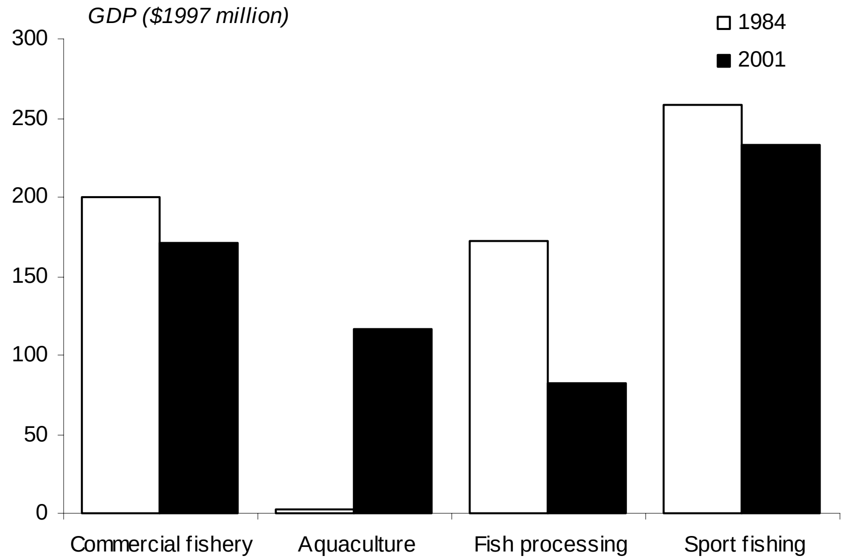


Source: Statistics Canada and BC STATS
Figure 7

Tourism, the sector which is most like the sport fishing industry, has experienced relatively steady growth since 1984, increasing about 44% during that period. The industry stalled in 2001, partly because of the effects of the September 11 terrorist attacks, but also due to weaker economic conditions in the US and overseas. Both factors dampened tourism in British Columbia during 2001.

It should be noted that, because some recreational anglers in the province are also tourists, there is a certain amount of overlap between the two industries. Some, but not all, of the GDP originating in sport fishing activity is also attributed to tourism.

The aquaculture industry has seen strong growth since 1984, but other industries in the sector have been shrinking.



Source: BC STATS
Figure 8

Sport fishing is the largest industry in the sector

Sport fishing is the largest industry within the fisheries and aquaculture sector, with a total GDP of $233 million in 2001. The commercial fishery produced $170 million of the province's gross domestic product in that year, with another $82 million originating in fish processing activities. Finfish and shellfish farming added $116 million to the province's total GDP.

Over the longer term, these industries have experienced different growth patterns. Real GDP in the sport fishing industry was 10% lower in 2001 than it was in 1984. The commercial fishing industry posted a 15% decline in GDP over this period, while fish processing fell 52%. In both the commercial fishery and fish processing industries, most of the decline has occurred since the mid-1990s. Up to that point, both industries were on an upward path, even though overall growth lagged behind the provincial average. Similarly, the sport fishing industry had been growing, but is showing the effects of uncertainty surrounding the salmon stock and resource conservation measures, as salmon fishing has traditionally represented a big part of the industry's total activities.

As has been mentioned previously, the most significant growth has been in the aquaculture industry, which is gaining prominence within the sector. Aquaculture's contribution to total GDP in 2001 exceeded that of the fish processing industry.

More than 20,000 people work in the fisheries and aquaculture sector

Employment (including both full-time and part-time jobs) in the fisheries and aquaculture sector was estimated at 20,100 in 2001. This includes 5,400 workers in commercial fishing, 3,900 people employed in fish processing, 1,900 people at finfish and shellfish farms, and 8,900 workers in the sport fishing industry. Four out of ten jobs are in the sport fishing industry, which is the biggest employer in the fisheries and aquaculture sector. It should be noted that these figures only include people who are directly employed in the sector. Workers in industries supplying goods and services to the fisheries and aquaculture sector (such as truckers or feed plants) are not included.

Employment Estimates

The employment data in this report are based on information from Statistics Canada's Labour Force Survey, a survey of households. Because of the small number of people who work in industries such as aquaculture or the commercial fishery, slight variations in the sample can affect the data. ***Therefore, the employment figures for aquaculture should be used cautiously***. Employment data are probably more robust for the fish processing and sport fishing components of the sector.

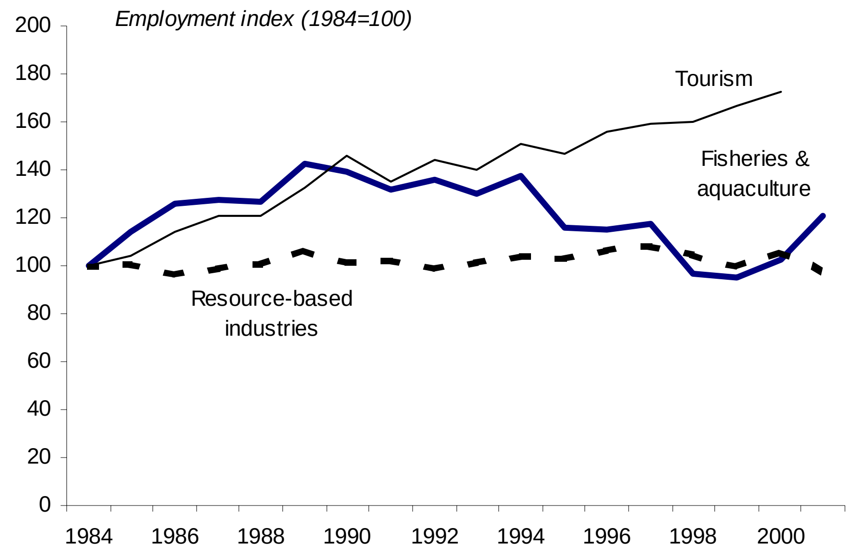
It should also be noted that these figures do not distinguish between full-time and part-time workers. A more complete discussion of employment measures follows at the end of this section.

By comparison, the agriculture and food processing sector employed 46,300 people, while 90,600 British Columbians worked in the forest products sector in 2001.

Employment in the fisheries and aquaculture sector has fluctuated between 16,000 and 24,000 during the period since 1984. The 2001 figure (20,100) was up substantially from 2000, when an estimated 17,000 people were working in the sector, virtually the same number as in 1984 (16,600).

Most of the job growth that has occurred in the province since the early 1980s has been in industries outside the resource sector. In general, the number of people working in resource-based industries has been either flat or declining. Employment in resource-based industries was at virtually the same level in 2001 (186,200) as it had been in 1984 (190,900). Overall, the number of jobs in the economy grew 56% during this period. In the service sector, the number of jobs has risen 67%, three times as much as in the goods producing industries (+22%). Employment in tourism has grown 82% since 1984.

The number of people working in fisheries and aquaculture has fallen since the early 1980s. Resource-based industries as a whole have seen little change in employment during this period.



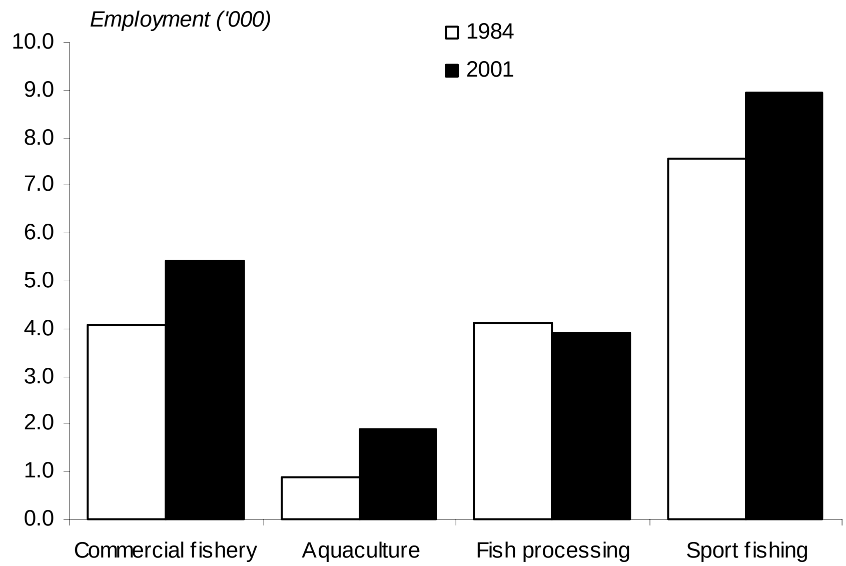
Source: BC STATS
Figure 9

Within the fisheries and aquaculture sector, employment gains have not followed the same pattern as GDP growth. For example, the number of people with jobs in the aquaculture industry has doubled since 1984. While that increase is very strong, and well above the average for all industries, it also falls far short of the fifty-fold increase in GDP seen in aquaculture during this period.

However, it is not necessarily true that GDP and employment should grow in tandem. Changes in the composition of an industry, or in the way goods and services are produced will affect GDP and employment measures differently. In the case of aquaculture, the industry has undergone a restructuring during the last two decades, shifting away from a primary focus on shellfish farming to an emphasis on finfish production. Relative to the value of sales, less labour is required to raise and harvest finfish than shellfish and this is part of the reason for the slower employment growth. In addition, some fish farming operations are now using automated feeding processes rather than manual labour in their grow operations.

The number of jobs in the commercial fishery increased 33% between 1984 and 2001, while employment in fish processing facilities was 5% lower than in 1984. In the sport fishing industry, the number of jobs has increased 18%.

Employment in the sector[10] has increased modestly since 1984



Source: Statistics Canada and BC STATS
Figure 10

Employment measures for the commercial fishery: what do they mean?

The employment figure (5,400 in 2001) for the commercial fishery may seem low to those who are familiar with data on the number of people connected to the fishery. Fisheries and Oceans Canada data on the number of vessels and individuals who are licenced to participate in the commercial fishery is substantially higher, at about 8,600 for 2001. The number of vessels licenced is also much higher than the figure reported in the Labour Force Survey.

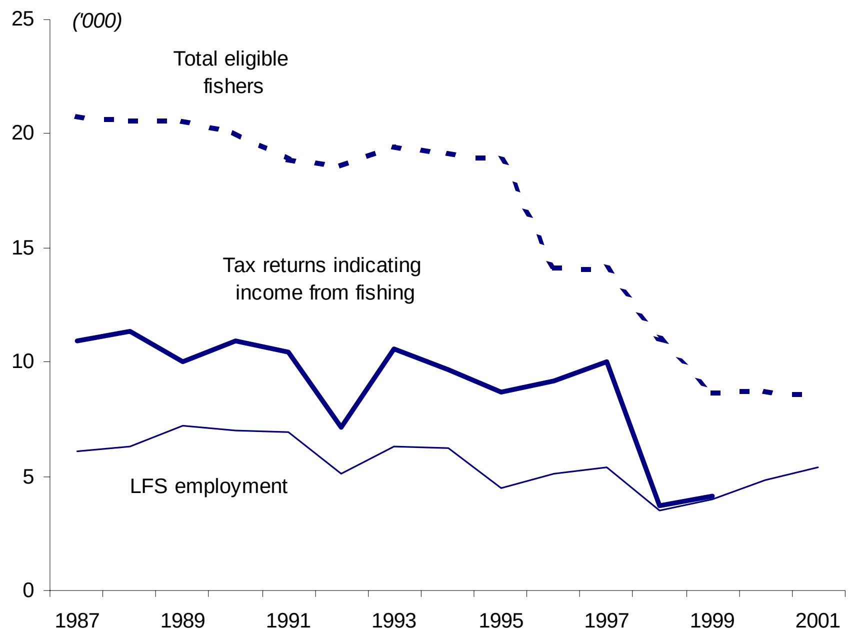
There are a number of reasons for this discrepancy, which are primarily related to what the different data sets are measuring. DFO requirements mean that anyone involved in the fish harvest during a given year must have a fisherman's registration card (FRC). Individuals are obliged to register regardless of how much time they spend working in the commercial fishery. This means that the FRC counts should be a good measure of the number of people who spend some time working in this industry throughout the year.

However, they do not measure actual employment in the industry in a way that is comparable with estimates reported for other industries. Because the period during which it is possible to commercially harvest the stock of fish is limited by the availability of the stock, and by fishery openings and closures, some of the people who work in the fishery are not able to earn a living at this activity year-round. It is likely that many people who spend some time working in the industry also hold another job. They may spend two or three months fishing, and during the rest of the year, work at other jobs. Each individual in this position would have a fisherman's registration card.

[10] These figures include both full-time and part-time workers

In any given month, each individual surveyed by Statistics Canada is classified to one industry. If he or she has worked in two industries during that month, the industry to which their employment is attributed is the one where most of their hours of work are spent. In other words, the employment data from the Labour Force Survey could only equal the FRC figures if every individual with a commercial fishing licence spent all of his/her time on the job working in the commercial fishery. Given the seasonal nature of this industry, that is highly unlikely.

The number of people with commercial fishing licences, or reporting income from fishing on their tax returns, is substantially higher than the employment data



Source: DFO and Canada Customs and Revenue Agency
Figure 11

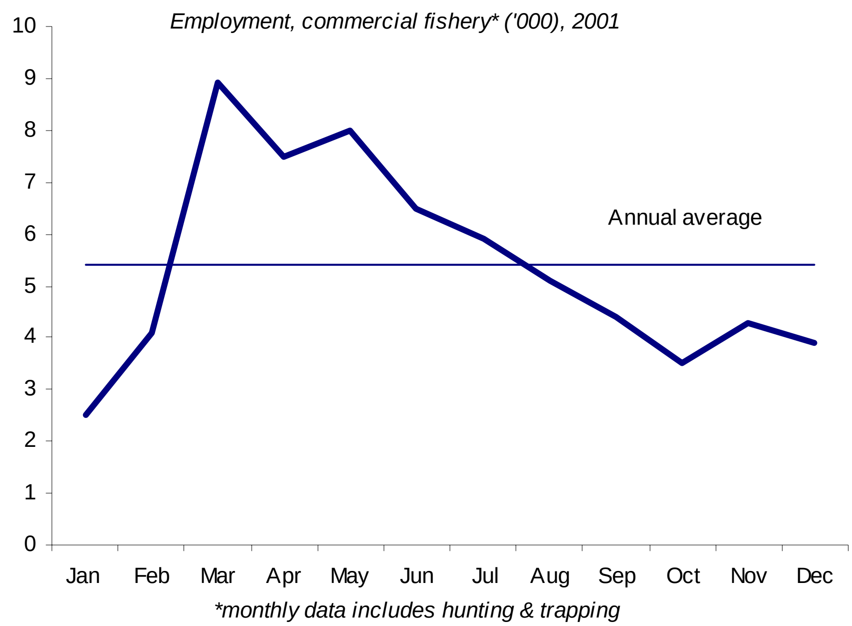
This situation is not unique to the fishery. Many industries, including agriculture, forestry, retailing, education and others, show seasonal fluctuations in employment. People may work for short periods in these industries even if their main job is in another sector of the economy. A good example of this is a teacher who spends part of the summer months working in a retail outlet.

How should employment data be interpreted?

Employment data should not be interpreted as a count of every person who works in the industry at some point in time during a given period. Instead, the employment figures measure the number of people who spend ***most*** of their time working in a given industry during the period in question.

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 annual figures are. When monthly Labour Force Survey data for fishing, hunting and trapping is compared to the number of FRCs in 2001 the discrepancy virtually disappears. In 2001, employment in the fishery, as reported in the Labour Forcey Survey, peaked at an estimated 8,900 in March, and remained at around the 8,000 mark throughout the spring. DFO data for that year suggest that about 8,600 people were eligible to fish in 2001. The correspondence between the two data sets is not that tight in every year, but the annual averages do mask the month-to-month fluctuations in the data.

Seasonal fluctuations in the commercial fishery are large



Source: Statistics Canada, Labour Force Survey
Figure 12

Why use annual averages to measure employment?

Annual averages are used to measure employment because they give the best indication of the amount of labour used by each industry. For example, if one industry employs 12,000 people for one month of the year, and another industry employs 1,000 in each month, the first industry hasn't used more labour than the second one. It 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.

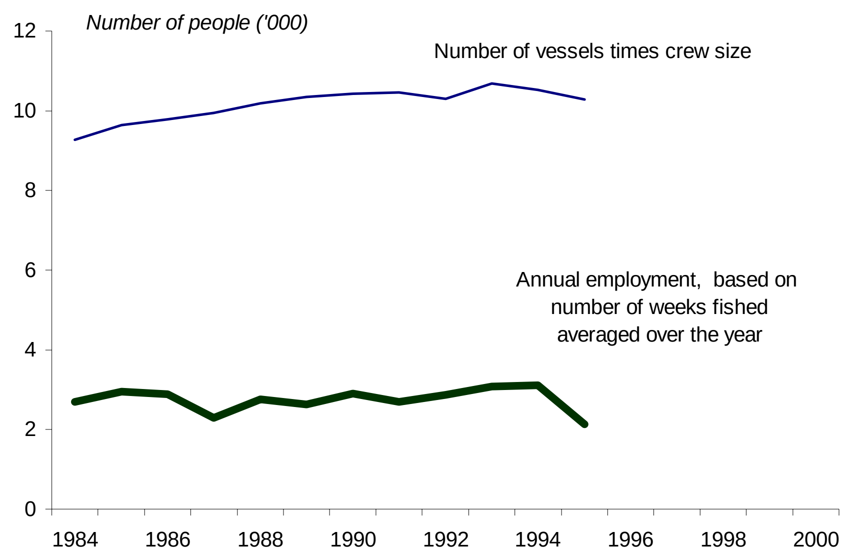
Other Measures of Employment

Employment estimates presented in other studies of the commercial fishery and fish 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.

This can, perhaps, be best illustrated using the salmon fishery as an example. There were just under 4,000 vessels fishing for salmon in 1995. These vessels had an average crew size of 2.6 people. During the salmon-fishing season, total employment in the salmon fishery would have been about 10,400. However, the fishery lasted just 10.8 weeks. When that employment figure of 10,400 is averaged over the year, it represents the equivalent of just over 2,000 yearlong jobs.

Because the salmon fishing season is relatively short, average annual employment in the salmon fishery is much smaller than the size of the fleet

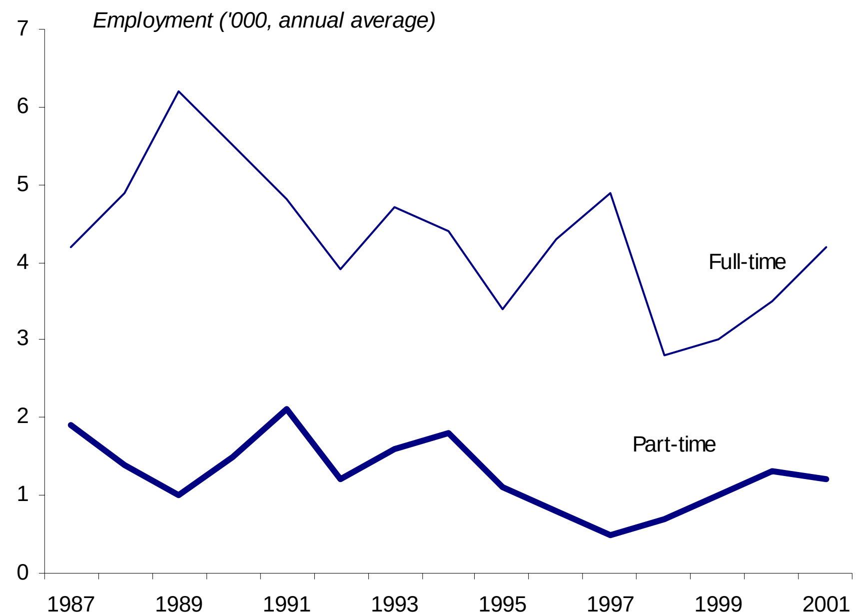


Source: BC STATS estimates
based on salmon fleet return data for 1984 to 1995
Figure 13

Part time employmet is more common in the commercial fishery than in other industries

Apart from the seasonal nature of the industry, part-time employment is more prevalent in the commercial fishery than in many other industries. As many as a third of the people who are counted as employed in this industry, spend less than 30 hours a week on the job. On average, about a quarter of the workers in this industry are employed part-time. By comparison, the part-time employment rate for the goods sector as a whole is 8%. This type of employment is more common in service industries, where about 22% of the people with jobs work part time.

Part-time employment is prevalent in the commercial fishery



Source: Statistics Canada
Figure 14

The Labour Force Survey

Much of the discrepancy between the Labour Force Survey (LFS) data and other measures of the number of people who spend some time working in the commercial fishery can be explained by the definitional issues discussed above. However, it is important to note that the LFS is a household survey. Nationally, 53,000 households, or about 104,000 people are surveyed each month. In BC, the sample size is about 5,000. Households remain in the survey for six months, and one-sixth of the sample enters or is dropped from the survey in each month. For most industries, that sample size is adequate and the methodology ensures that the numbers are robust. However, in the case of relatively small industries such as the commercial fishery, the size of the sample may have a bearing on the numbers. The use of annual averages should theoretically correct for variations in the sample from month to month, but data for every small industry should be viewed as a ballpark rather than an exact figure.

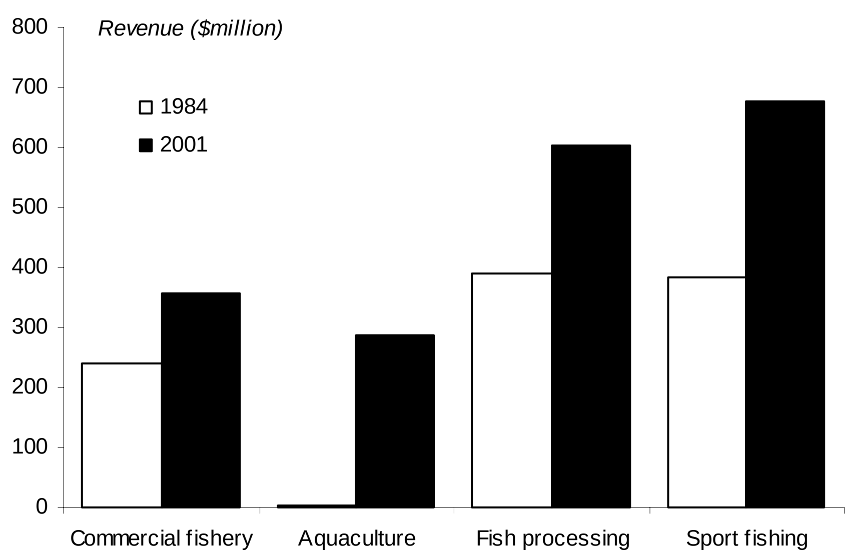
Workers in the fisheries and aquaculture sector earned $333 million in 2001

British Columbians employed in the fisheries and aquaculture sector brought home an estimated $333 million in wages and salaries in 2001. This does not include the income of owner-operators of fish boats who are not considered employees. The income of unincorporated businesses in the commercial fishing and aquaculture industry is estimated at about $56 million in 2001. This figure includes a return to both the labour of, and the capital invested by, the owner-operator of an unincorporated fishing business.

Revenues fell just shy of $2 billion in 2001

Revenues in the commercial fishing, aquaculture, and sport fishing industries totalled $1.9 billion[11] in 2001. This compares to revenue of just over $1.0 billion in 1984. Among the industries within the sector, sport fishing generated the greatest revenue ($675 million), followed by fish processing ($602 million), commercial fishing ($358 million) and aquaculture ($287 million). In comparison, total revenue in the agriculture sector (farm cash receipts plus shipments of food and beverage products, excluding fish) was $6.7 billion in 2000.

Revenue in the fisheries and aquaculture sector reached $1.9 billion in 2001

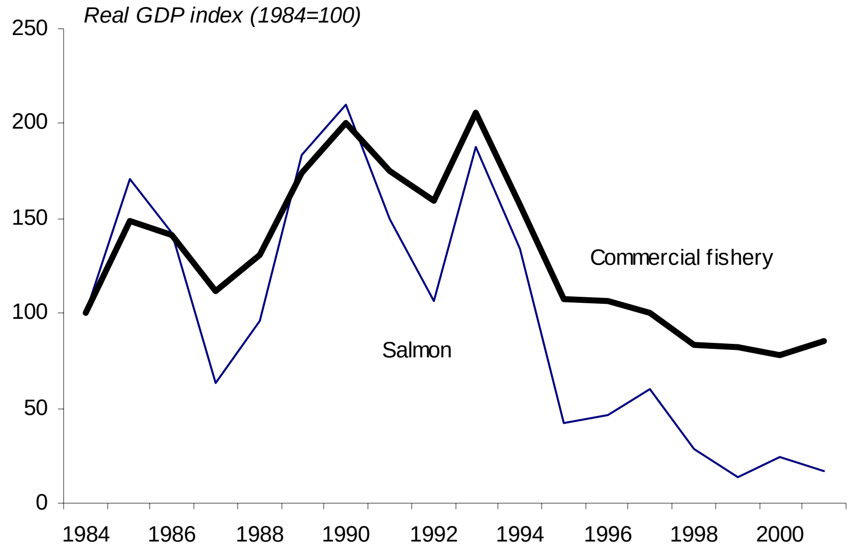


Source: Statistics Canada and BC STATS
Figure 15

[11] *All revenue data are in current dollars*

4. Commercial fishing

Species other than salmon are accounting for a growing share of the commercial fishery's output



Source: BC STATS
Figure 16

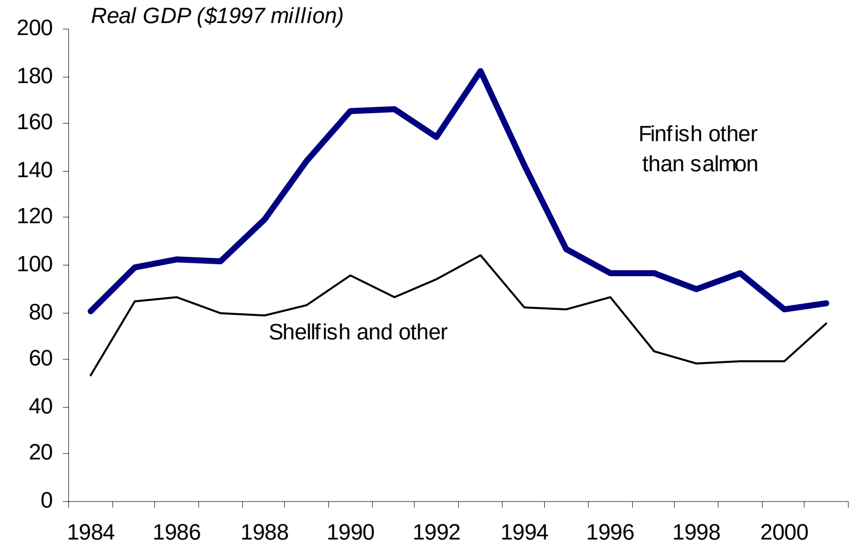
GDP (valued added) in the commercial fishery increased 9% in 2001, posting its first gain since 1993. The GDP growth occurred despite a continued decline in the value of the salmon fishery, which fell 31% in that year. The herring fishery also contracted (-7%) in real terms, but other commercial fisheries posted increases ranging from 2% to 10%.

The drop in real GDP occurred even though the value of the catch, unadjusted for price increases, fell 2% in 2001. This is because prices for several species fell, so the decline in landed values was price rather than volume driven. The harvest of groundfish and shellfish provided the impetus for growth in 2001, as it has in recent years.

The last few years have been extremely challenging for the salmon fleet. In 1999, the salmon catch dropped to its lowest level in a century. Declining stocks, and programs designed to reduce the size of the salmon fleet have played a role in the recent downturn. The salmon fishery, which dominated the industry in 1984, accounting for more than half of total value added in commercial fishing, contributed less than a tenth of the industry's GDP in 2001.

The value added by the commercial fishery remains well below the levels seen in the mid-1990s, but over the longer run, most fisheries other than salmon have held their own. The real value added by both the shellfish harvest, as well as the harvest of other finfish species remains at or above 1984 levels, despite declines in the 1990s. This is largely due to the strength of the halibut, groundfish and shellfish fishery, where GDP has increased substantially since since 1984.

As the salmon fishery has been declining, the fishing effort in the commercial fishery has been diverted into the harvest of other species



Source: BC STATS
Figure 17

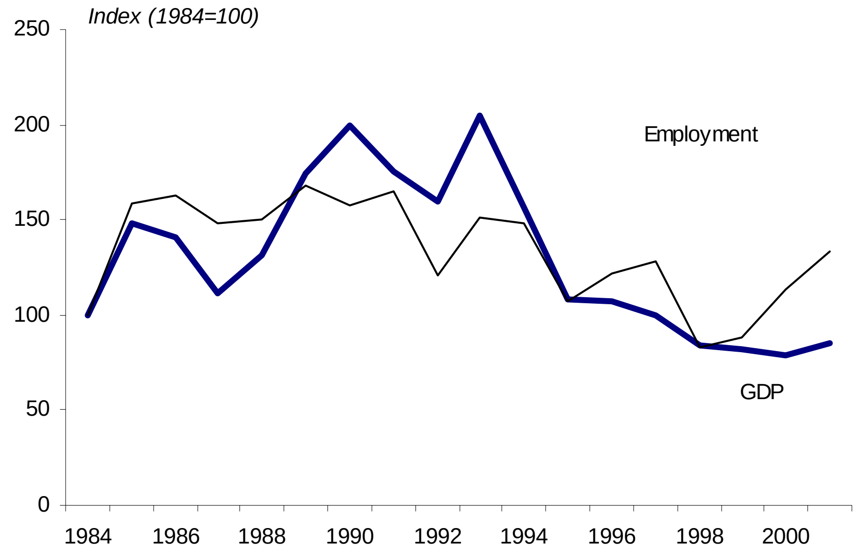
5,400 British Columbians work in the commercial fishery

Employment in the commercial fishing industry was estimated at 5,400 in 2001. This was well below the levels seen in the early 1990s, when employment in the industry topped the 6,000 mark. The average annual number of jobs in the fishery bottomed out at 3,400 in 1998.

The decline in employment over the longer run is due in large part to programs designed to help preserve the salmon stock and boost the long-term viability of the salmon fishery. While the measures under the 1996 Mifflin Plan were aimed primarily at fleet reduction, coho conservation measures that were introduced in 1998 represent a shift in management of Pacific Coast salmon stocks from mixed to weak stock management. This means that catch levels are now set to conserve the most vulnerable salmon stocks rather than at a level that may result in the over harvest of weak stocks. Almost 1,600 commercial salmon licences were voluntarily retired and the fleet was further reduced by regulations requiring single gear and allowing area licence stacking. The buyback provided short-term relief of the pressure on weakened salmon stocks, but contributed to a decline in the industry's output and created significant socio-economic impacts on coastal communities dependent on the salmon fishery.

Although the total wage bill for the commercial fishery was only $6 million in 2001, most of the earnings in this industry are reported as unincorporated business income. Last year, $56 million in unincorporated business income[12] was attributed to fish harvesting activities.

The implementation of measures aimed at conserving weakened salmon stocks has affected both GDP and employment in the commercial fishery



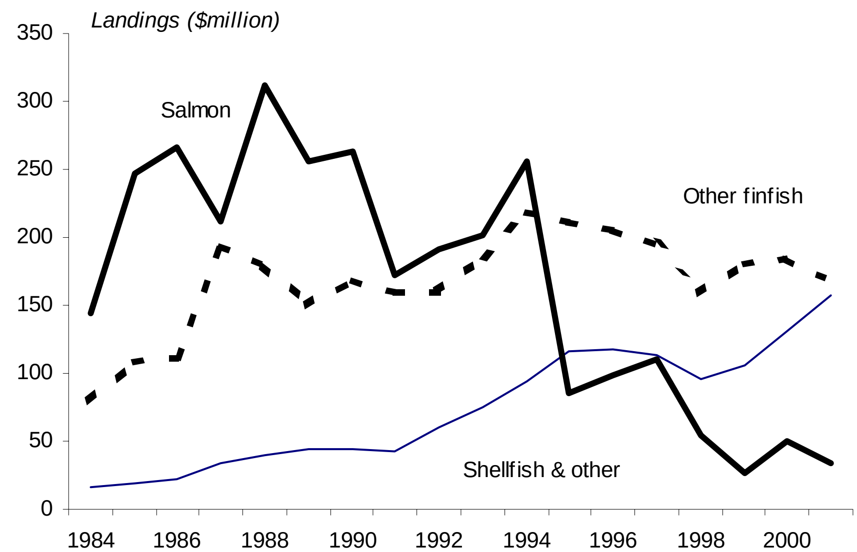
Source: Statistics Canada and BC STATS
Figure 18

Revenue fell 2% in 2001, dropping to $358 million

Revenue in the commercial fishery (as measured by landed value) was $358 million in 2001, down 2% from the previous year. Salmon landings fell to $33 million, only slightly higher than the historic low of $26 million recorded in 1999. The landed value of other major species, including herring (-14%), halibut (-13%) and groundfish (-6%) also declined in 2001, partly due to price effects. However, the value of geoducks and clams (+7%) and other species (+27%) harvested by the commercial fishery increased in 2001.

[12] By themselves, wages in the commercial fishery do not necessarily give a complete picture of the level of compensation received by people working in the industry, as many fishers are self-employed, and do not necessarily draw wages. Unincorporated business income is a measure of the return on labour and capital received by owner-operators of small businesses, of which there are many in the commercial fishery.

Shellfish and finfish other than salmon account for a growing share of total revenue in the commercial fishing industry

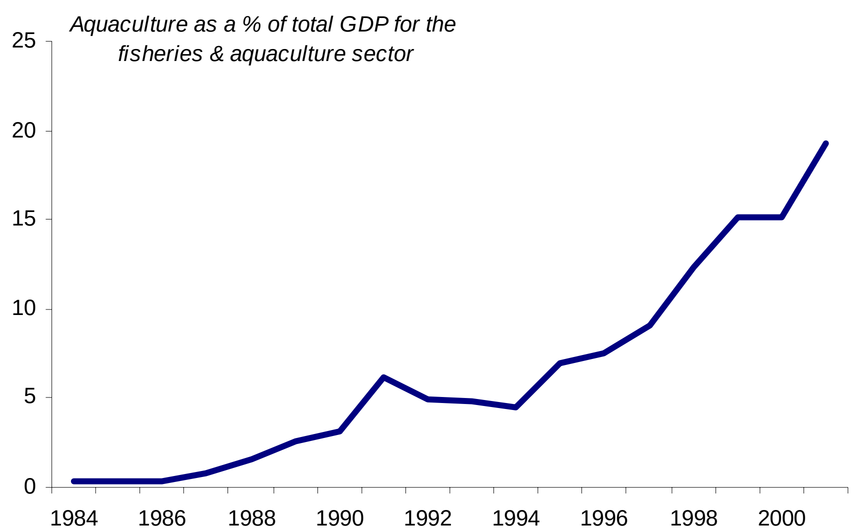


Source: Ministry of Agriculture, Food & Fisheries
Figure 19

5. Aquaculture

The province's aquaculture industry, though small compared to other components of the fisheries and aquaculture sector, is the one that has shown the most rapid growth during the last decade and a half. In 1984, the industry's GDP was estimated at $2.3 million–less than one percent the size of the commercial fishery. By 2001, finfish and shellfish farming activities in the province were contributing $116 million to the province's total GDP. The industry now accounts for nearly a fifth of the total GDP originating in the fisheries and aquaculture sector, and is comparable in size to the fish processing industry.

BC's aquaculture industry has developed into a significant player in the fisheries and aquaculture sector

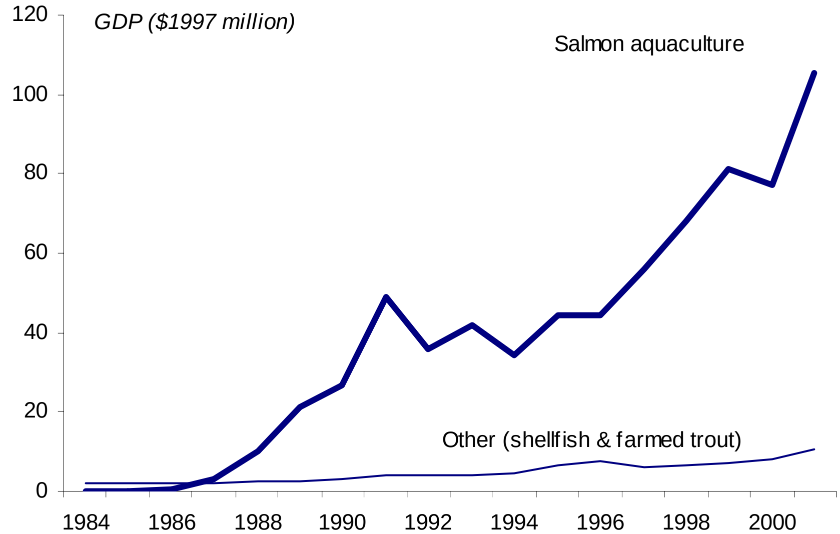


Source: BC STATS
Figure 20

Aquaculture has out-performed virtually every other industry in the BC economy during the period since 1984. Of all the industries for which GDP estimates are produced only a handful have seen similarly strong growth during this period. Many of the industries that have exhibited very strong growth during the 1980s and 1990s have been in the high-tech sector. The computer and peripheral equipment industry, one of the fastest growing in the high-tech sector, has seen a 684% increase, well below the 4,907% increase in aquaculture.

The expansion of the aquaculture industry is largely due to the fact that the salmon farming industry has developed from infancy to maturity during the last fifteen years. Shellfish farming in the province has also made big gains, but is no longer the dominant force in this industry. Between 1984 and 2001, GDP in the salmon farming industry rose from $0.2 million to $105 million, and now accounts for the lion's share of total GDP in this industry. Over the same period, the shellfish farming industry's contribution to GDP also increased substantially, growing from $2 million to $11 million.

The rapid expansion in aquaculture is largely due to the growth of salmon farming, which now dominates the industry



Source: BC STATS
Figure 21

Unlike the commercial fishery, where the main costs borne by producers are those related to the harvesting of the resource, aquaculture operators must purchase their stock and then nurture it until it is ready to harvest. Their capital investment is tied up in pens, nets and other gear rather than in boats. Although aquaculture production is more labour-intensive than commercial fishing, returns to labour and capital in this industry represent a smaller share of the total cost of production, because fish farmers also incur other costs for feed, stock, and so on, which represent a significant share of total spending. The GDP to output ratio in aquaculture is about 35%, well below the average of roughly 60% seen in the commercial fishery during much of the period covered by this study.

Revenue and expenditure data for hog farming, an industry believed to be similar to aquaculture in its cost structure, suggest that the GDP to output ratio in that industry is somewhat lower, at about 25%. As in the aquaculture industry, most of the value of the output produced by hog farmers represents a recovery of costs such as feed, stock and equipment purchased by the farming operation in order to produce its output.

1,900 British Columbians were employed in aquaculture in 2001

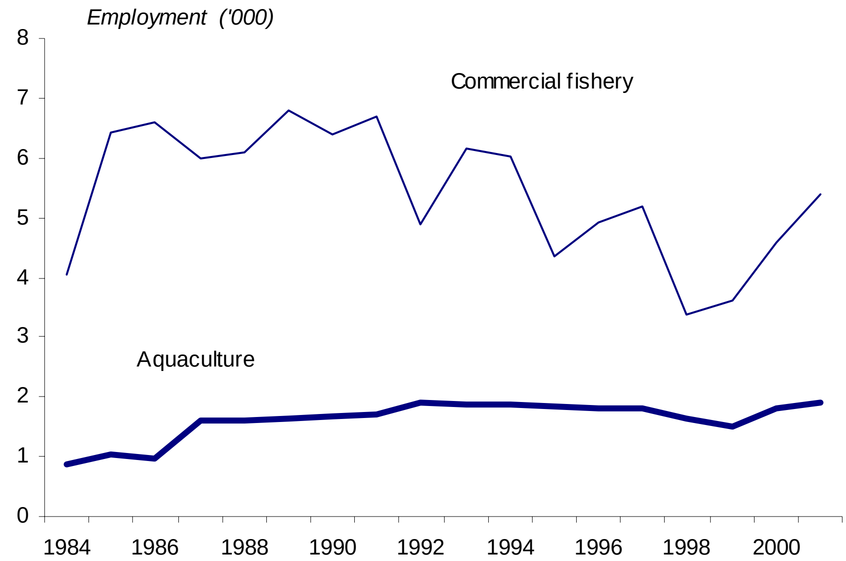
Employment in the aquaculture industry was estimated at 1,900 in 2001 as employment in the industry remained stable. However, it is important to remember that these data, which are derived from the Labour Force Survey, are based on a fairly small sample of the population. Annual fluctuations in the data may indicate changes in the composition of the sample rather than growth or decline, especially for an industry like aquaculture, which employs relatively few workers. Probably the strongest conclusion one should draw from these numbers is that just under 2,000 people work in aquaculture, while the commercial fishing industry employs a larger, but declining, share of the total workforce.

Measuring Employment in Aquaculture

The measurement of employment in small industries, especially those undergoing rapid change, such as aquaculture, is always a challenging exercise.

Statistics Canada has prepared estimates of employment in the aquaculture industry for the period from 1987 on, but has only released its estimates for selected years. BC STATS' aquaculture estimates for the intervening years were derived by linearly interpolating the published data. These employment estimates are higher than the figures implicit in the Statistics Canada totals. However, when aquaculture employment was calculated residually for the missing years, the implicit estimates displayed far too much variability to be consistent with what has been happening in this industry. Therefore, BC STATS' estimates mark a departure from the Statistics Canada data to a certain degree, but are probably more representative of what is happening in the industry. Nevertheless, users should treat the employment figures as fairly rough estimates

About 1,900 people work in BC's aquaculture industry



Source: Statistics Canada and BC STATS
Figure 22

The landed value of farmed fish and shellfish produced in BC was $287 million in 2001, down 2% from the previous year.. Of this total, $269 million came from sales of farmed salmon, while $18 million in revenues were generated by farmed shellfish ($17 million) and other aquaculture ($1 million) production. By comparison, total aquaculture revenues in 1984 were $3 million, with most ($2.5 million) of that coming from the shellfish farming industry. Workers in the province's aquaculture industry earned an estimated $37 million in 2001.

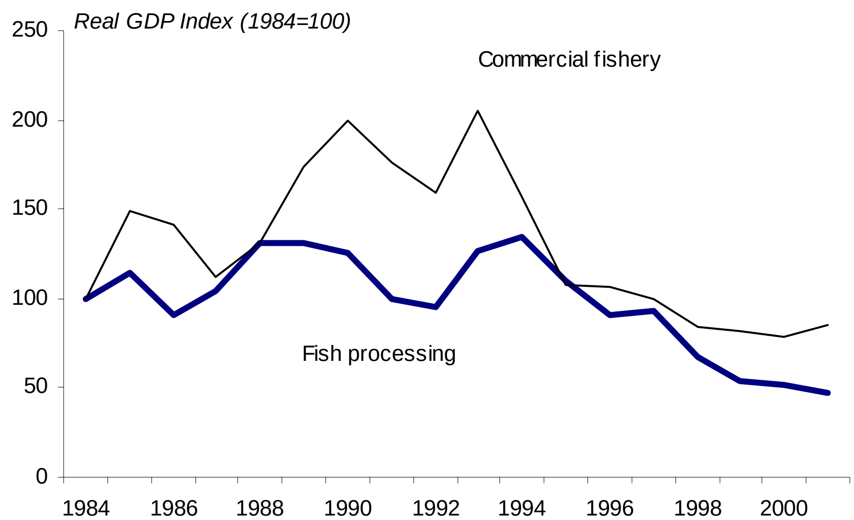
6. Fish processing

Fish processing activities in the province contributed $82 million to the province's GDP in 2001.

The economic performance of the fish processing industry in recent years has followed the fortunes of the commercial fishery, which provides most of the raw materials used by this industry. As a result, the industry's performance in recent years has been weak, with real GDP declining in six of the last seven years. It fell 8% (to $82 million) in 2001.

Fish processing facilities are not entirely dependent on the BC catch. Establishments in the province also process fish that have been caught by US or other foreign fishers, but are brought to processing vessels or on-shore facilities in the province.

The fish processing industry has been affected by the decline in the salmon fishery

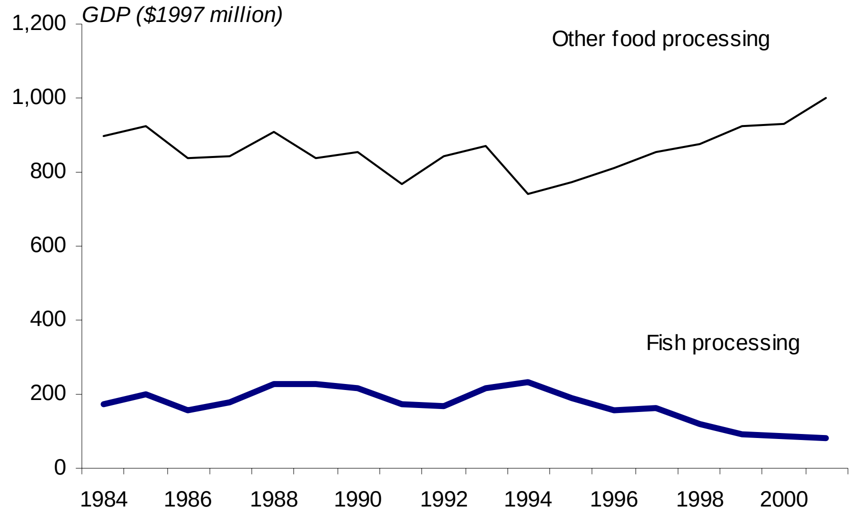


Source: Statistics Canada and BC STATS
Figure 23

Historically, fish processing activities have generated about a quarter of the GDP produced by the food products industry, but with the decline in recent years, the industry's share has been falling. Despite this, it remains one of the most important players in BC's food products industry.

The expansion of the province's aquaculture industry, especially the salmon farming component, has almost certainly helped to offset the effect of the downturn in the commercial fishery on the fish processing industry. However, the extent to which aquaculture activities support fish processing may be somewhat limited, as many fish farming operations also process the fish they raise. At the same time, more processing companies are producing value-added products through secondary processing.

Despite recent declines, fish processing still accounts for a substantial share of total GDP in the food manufacturing industry

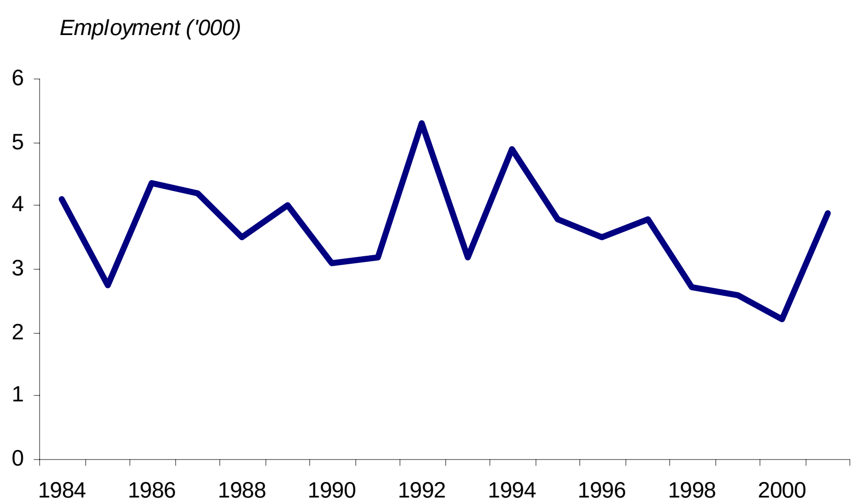


Source: Statistics Canada
Figure 24

3,900 British Columbians work in the fish processing industry

The number of people employed in the fish processing industry has fluctuated during the last fifteen years, reaching a high of 4,900 in 1994. There were 3,900 workers in the fish processing industry in 2001. Workers in the industry earned an estimated $153 in wages and salaries.

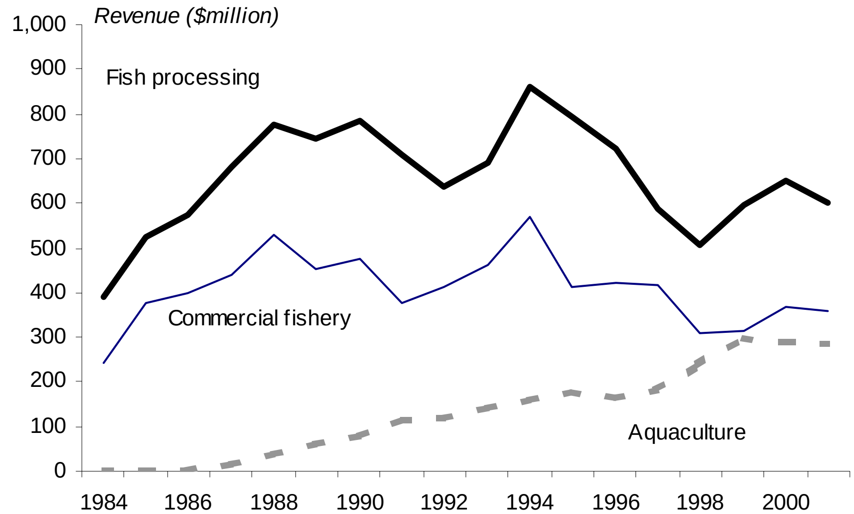
Employment in fish processing fluctuated around the 4,000-mark until the mid 1990s, and returned to that level in 2001



Source: Statistics Canada
Figure 25

Revenues of fish processing establishments in the province fell from $652 million to $602 million between 2000 and 2001 as the industry continued to mirror the ups and downs in the commercial fishery.

There are close links between the fish processing industry and the commercial fishery



Source: Statistics Canada, BC Ministry of Agriculture, Food & Fisheries and Fisheries & Oceans Canada
Figure 26

7. Sport fishing

One of the main goals of this project was to derive estimates of GDP and employment for the sport fishing industry that would be comparable with those for other industries within the sector, as well as for other industries in the economy. The GDP, employment, income and revenue data presented in this section have been developed using methods similar to those used to measure the size of other sectors such as tourism and high tech.

Deriving sport fishing estimates

Like tourism and high tech, sport fishing is not a standard industry group for which economic measures are readily available. Activities that are attributed to a variety of industries–accommodation, food and beverage services, retailing and so on–have a sport fishing related component, but it is not specifically identified separate from the other activities of these industries.

The first step in developing this methodology was to find a suitable definition of the sport fishing industry. The definition, which was developed in consultation with the Ministry of Agriculture, Food & Fisheries, was that the industry should include the sport fishing related activities of all industries that sell directly to anglers. This paralleled the existing definition of the tourism sector, in which a proportion of the activities of all industries that sell directly to tourists is included in the tourism sector. A methodology for deriving estimates of GDP, revenue and employment in the sport fishing industry was developed, drawing on work previously done by BC STATS for the tourism and high tech sectors.

Tourists versus resident (non-tourist) anglers

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 travelling 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.

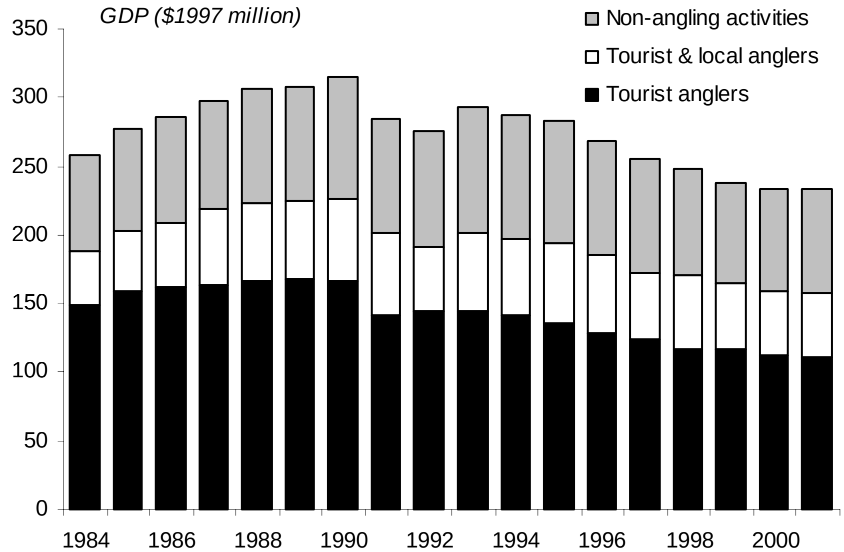
In order to capture the activities of both tourist and non-tourist anglers, industries providing services directly to anglers and other tourists were first sorted into three groups.

- The first group included ***industries providing goods and services that would be used by both tourist and local anglers***. This would include the services of marinas as well as the sport fishing related activities of sporting goods, boat and fuel retailers. The sport fishing allocator for these industries was determined 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.
- The second group included ***industries providing 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. For these industries, an angler proportion was again calculated by comparing data from the angler surveys with total consumer spending on these services. That ratio was then applied to the tourism component of the applicable industry's GDP, revenue, and employment.
- The third group included ***industries providing other services that have a tourism component***. This includes transportation other than air or water transportation, as well as various other services purchased by tourists. 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 allocator for these industries was based on the percentage of overnight visitors to the province who are also sport-fishers, and was applied to the tourism component of these industries.

The definition adopted for this exercise specified that all industries that sell directly to anglers would be included in the sport fishing industry. The question of whether or not to include industries providing services that were not necessarily part of the angling experience was carefully considered. However, 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 size of the tourism sector. There are strong links between tourism and sport fishing activities, and in order to maintain consistency with the tourism-sector methodology, the same approach was adopted in this study.

As illustrated in the figure below, angling-related activities of resident and tourist anglers account for most of the industry's GDP, as would be expected. However, in 2001, anglers who came to BC or travelled within the province to fish, also generated about $46 million in GDP arising from other activities such as shopping or visits to attractions. About a fifth of total GDP in this industry is attributable to these peripheral activities.

Nearly all of the GDP in the sport fishing industry is attributable to angling activities. Other tourist-related activities generated $46 million of the industry's total value added in 2001



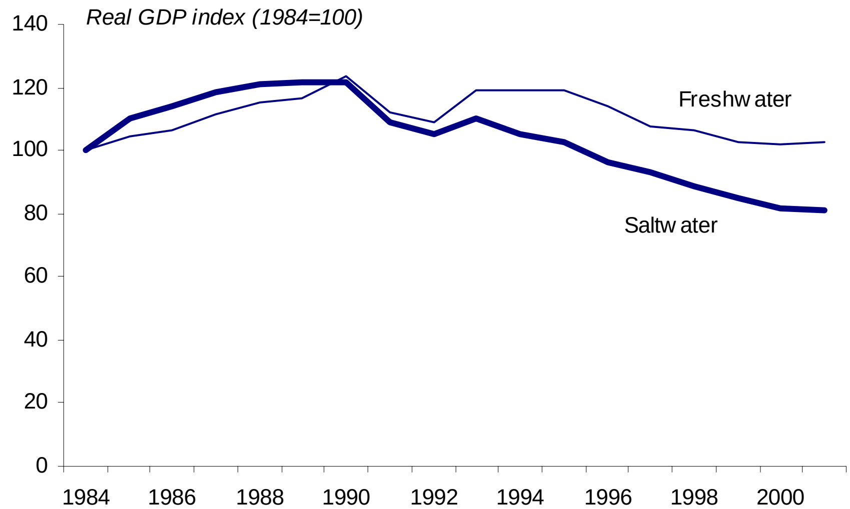
Source: BC STATS
Figure 27

Sport fishing contributed $233 million to BC's total GDP in 2001

GDP in the province's sport fishing industry has been trending down since 1993. This is partly due to an ongoing downturn in the saltwater component of the industry, but also reflects a decline in freshwater fishing activities since the mid-1990s. However, the overall decline in the industry's GDP during 2001 was relatively modest, at less than half a percent. A 1% drop in the value of the saltwater component of the industry was offset by a smaller increase (+0.5%) in the freshwater sport fishery.

The decline in the sport fishing industry reflectsmany factors. Among these are fewer anglers engaging in this activity (as evidenced by the number of both saltwater and freshwater licences sold in the province), and weak performances by some of the main industries providing services to anglers. For example, air transportation, one of the industries that has an angling-related component, has been in a downturn in recent years. In addition, while large hotels have done quite well during the last fifteen years, smaller accommodation properties, such as fishing lodges, have seen their output decline. These industries are important players in the sport fishing industry.

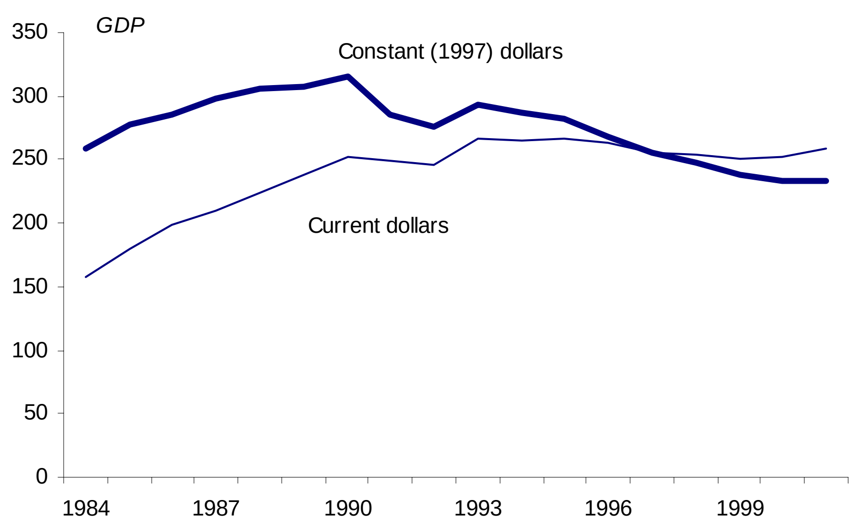
The saltwater component of the industry has suffered a setback in recent years



Source: BC STATS
Figure 28

It is important to keep in mind that the GDP figures presented here are in constant 1997 dollars, which means that they have been restated to remove the effects of inflation. Price increases have to a certain extent masked the lack of growth in the industry since 1984, as revenues have continued to rise, reflecting price rather than volume effects. In current dollars, the industry's GDP has risen 65% since 1984, despite the lack of growth in real terms.

Over the long run, the sport fishing industry's contribution to real GDP has remained fairly stable. Current dollar GDP has risen 65% since 1984, but has also been trending down in recent years.



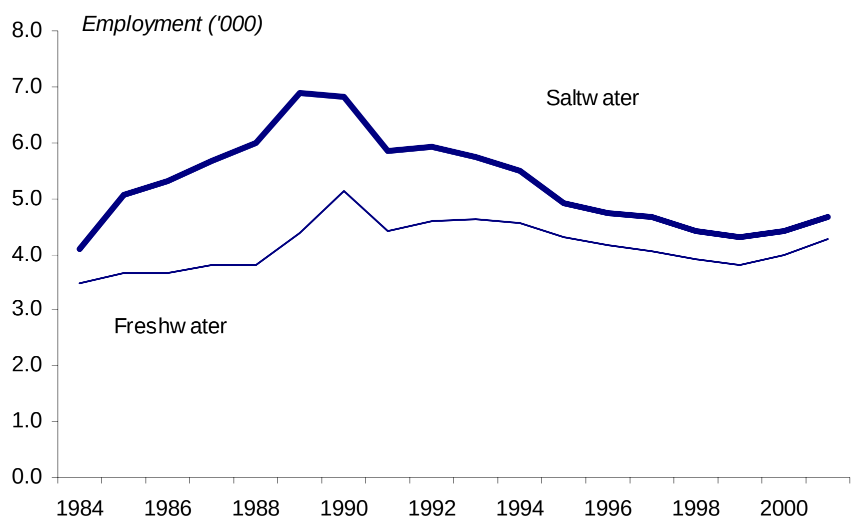
Source: BC STATS
Figure 29

Sport fishing related activities provide employment for 8,900 British Columbians

Sport fishing generated employment for 8,900 British Columbians in 2001, making the industry the biggest employer in the fisheries and aquaculture sector. Four out of every ten jobs in this sector were in sport fishing related activities. These figures include both full-time and part-time workers. Accommodation, food and beverage services, air transportation and guiding services accounted for nearly half of the jobs.

Saltwater (4,700) and freshwater (4,300) angling generated employment for roughly equal numbers of British Columbians in 2001. Historically, saltwater angling had been the biggest source of jobs in the sport fishing industry, but reduced saltwater angling activity during recent years has taken its toll. Fresh water angling activities have also tapered off.

Saltwater and freshwater angling generate roughly equal numbers of jobs



Source: BC STATS
Figure 30

Freshwater and saltwater angling activities put about $138 million (before taxes) into the pockets of BC workers in 2001: $72 million for those employed as a result of saltwater angling activities, and $66 million for workers in the freshwater industry.

Four out of every ten dollars earned in the fishing and aquaculture sector come from sport fishing activities

Revenue arising from angling activities in the province was estimated at $675 million in 2001, more than a third (35%) of the $1.9 billion in total earnings of the fisheries and aquaculture sector. Of this total, an estimated $341 million was generated by saltwater angling, while $334 million came from the activities of freshwater anglers.

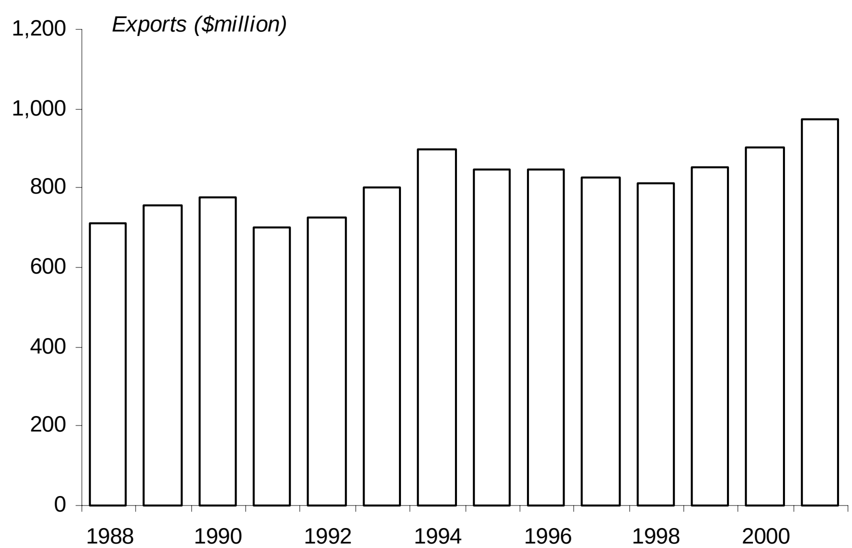
8. International Trade in Fish and Seafood Products

Export and Import Data

The figures presented in this section only include exports of goods produced by the commercial fishery, aquaculture and fish processing industry. 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).

Fish and seafood product exports reached $971 million in 2001



Source: BC STATS
Figure 31

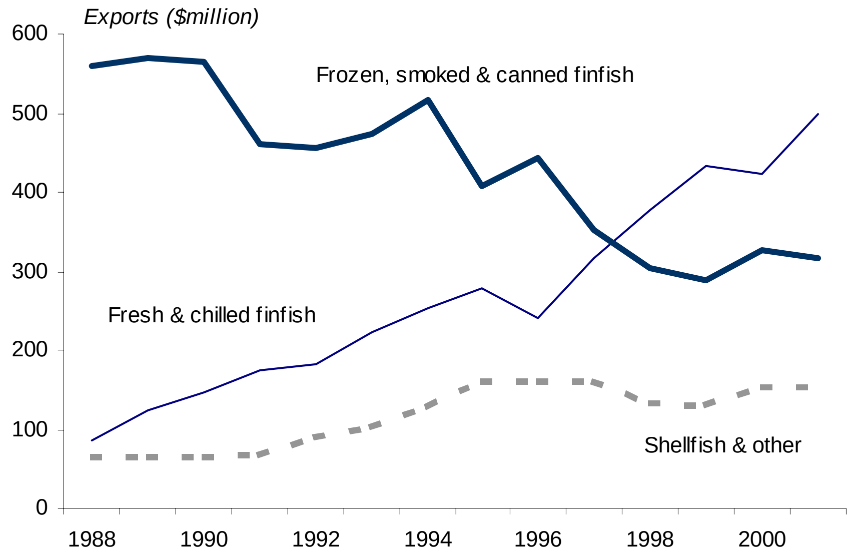
Fish and seafood product exports

BC's exports of fish and seafood products–live fish, fresh/chilled fish and frozen or processed fish and seafood products–reached $971 million[13] in 2001 as exports rose (+8%) for the third straight year. Canned and frozen fish and seafood products have historically accounted for the bulk of BC's fish exports. However, fresh and chilled finfish have been gaining a growing share of the market. In 2001, more than half of the province's exports of fish and seafood

[13] *Al l figures in this report are expressed in Canadian dollars.*

products were fresh or chilled finfish and shellfish. Canned and smoked salmon accounted for $73 million of BC's total seafood product exports.

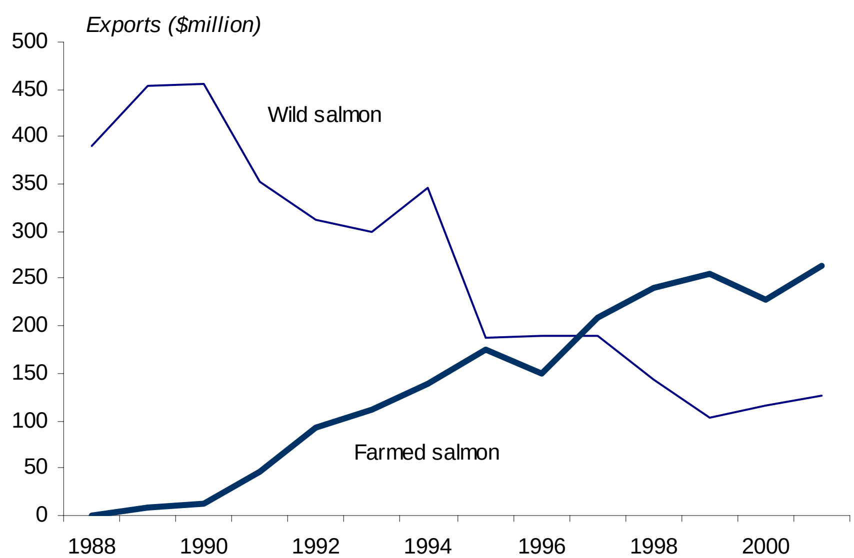
Fresh and chilled finfish are now BC's most important seafood export



Source: BC STATS
Figure 32

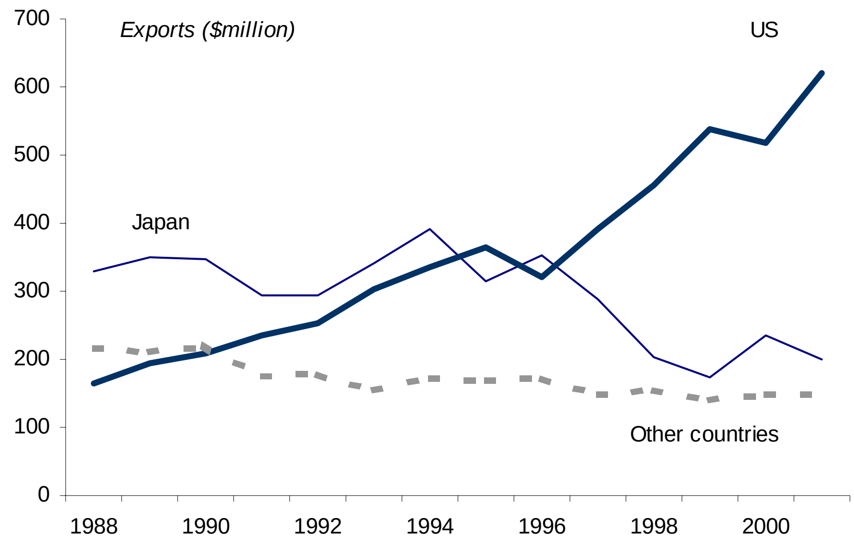
The upward trend in international sales of fresh and chilled finfish from BC reflects the growing importance of the province's aquaculture sector. Many of the farm-raised fish are marketed and sold freshed, dressed or filleted, rather than being canned or frozen.

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



Source: BC STATS
Figure 33

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



Source: BC STATS
Figure 34

The United States is the main market for BC fish and seafood products sold outside the country, with more than half (64%) of the province's international shipments of fish and seafood products destined for use in the United States. Japan (21%) was the second biggest customer in 2001, while the remainder of BC's fish and seafood product exports were shipped to European Union (6%) or other (10%) destinations.

Fish and seafood product imports

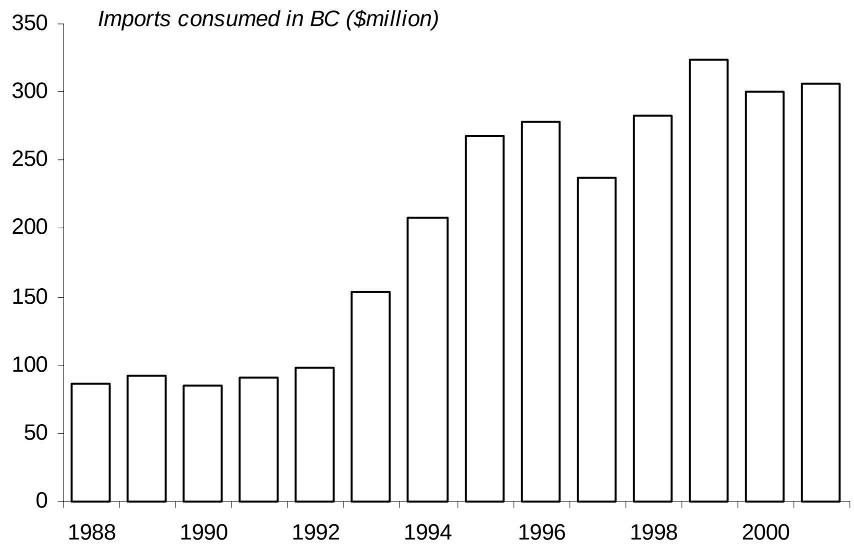
International imports of fish and seafood products consumed in BC increased 2% to $306[14] million in 2001. The value of fish and seafood product imports has more than tripled since 1988. It should be noted that these figures are reported in Canadian dollars, so some (but not all) of the increase over time is related to the drop in the value of the Canadian currency vis-à-vis the US dollar.

Since 1988, the value of fish and seafood products imported from the US has risen from $40 million to $126 million. Asian countries such as Thailand, China and the Philippines are a more important source of fish and seafood products than the US. The value of fish and seafood products imported primarily from these countries has quadrupled since 1988, growing to $172 million[15] by 2001. Japan and the European Union ship relatively little in the way of fish and seafood products to the province.

[14] These estimates have been adjusted so that they include only those imports that are consumed in the province.

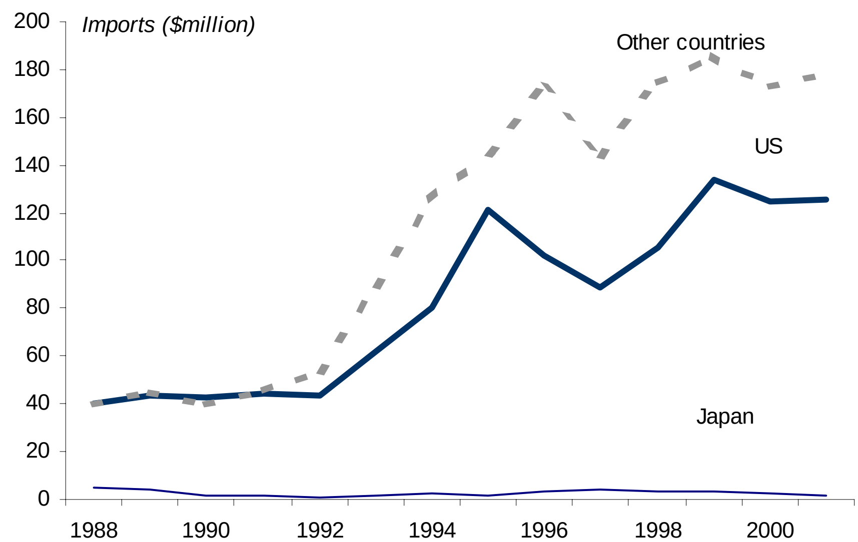
[15] This figure includes total imports from all countries other than the US, Japan and the European Union.

The value of fish and seafood product imports has tripled since 1988



Source: BC STATS
Figure 35

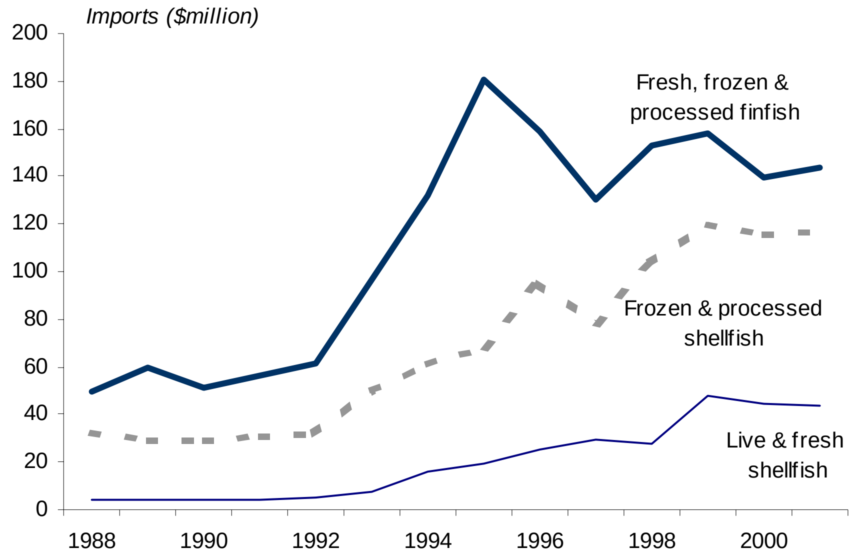
Most of the fish and seafood products imported and consumed in BC come from countries other than the US and Japan



Source: BC STATS
Figure 36

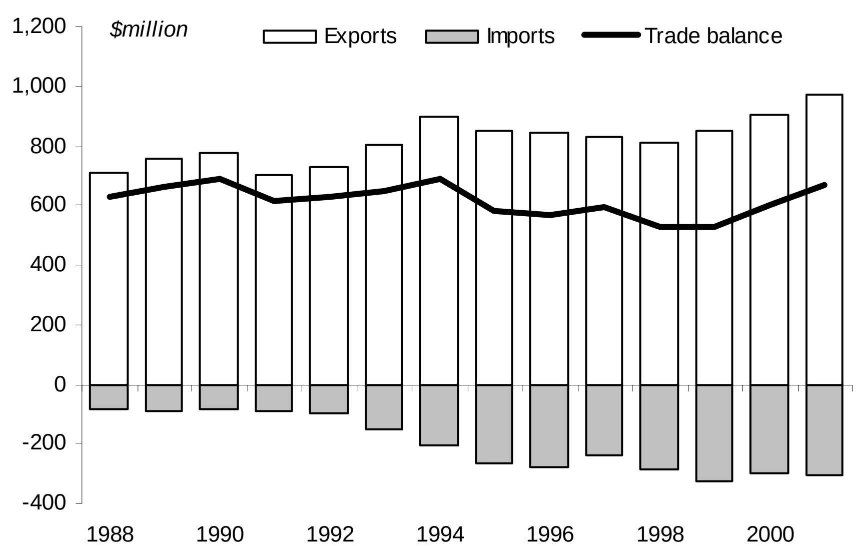
Most of the fish and seafood that is imported and consumed in the province enters the country after it has been frozen or processed (canned, smoked, cooked, or otherwise preserved). Some fish and seafood products are imported for processing in BC and are subsequently re-exported. Of the $160 million of imported shellfish products consumed in 2001, most was either frozen ($96 million) or processed ($20 million).

Most imported fish and seafood products have been frozen, canned, smoked, or otherwise processed



Source: BC STATS
Figure 37

BC's has a substantial trade surplus in fish and seafood products



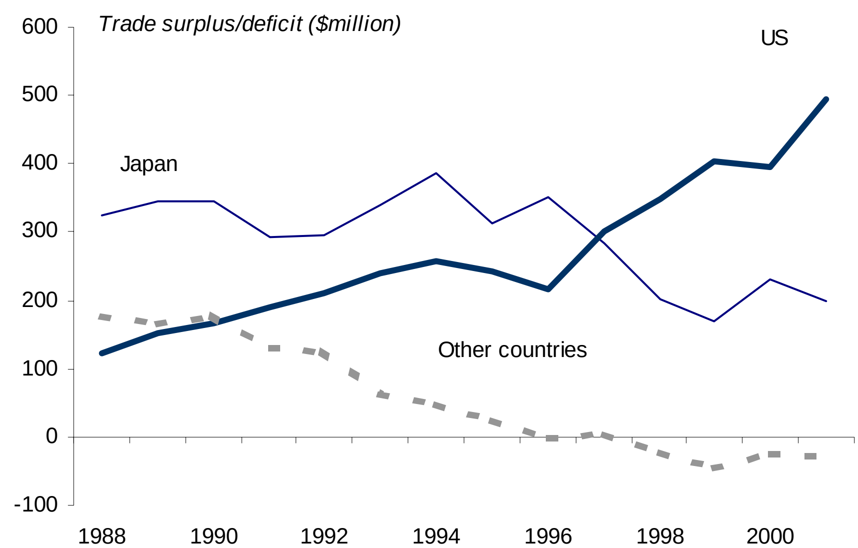
Source: BC STATS
Figure 38

BC has a large trade surplus in fish and seafood products

The province exported $666 million more fish and seafood products in 2001 than it imported from other countries. BC's trade surplus in fish and seafood products declined slightly during the mid to late 1990s, largely because imports were increasing at a time when the domestic industry saw little or no export growth. Export growth in the last three years has contributed to a rising trade surplus. The level of imports, while significantly higher than it was in 1984, has remained fairly stable since 1995.

The province's trade surplus with the US was $495 million in 2001, more than double the $198 million surplus for trade in fish and seafood products with Japan. BC also ships more fish and seafood products (+$49 million) to the EU than it imports from that part of the world. However, the deficit with other countries was $77 million in 2001.

The trade surplus with the US has been growing, but BC hasn't done as well in other parts of the world



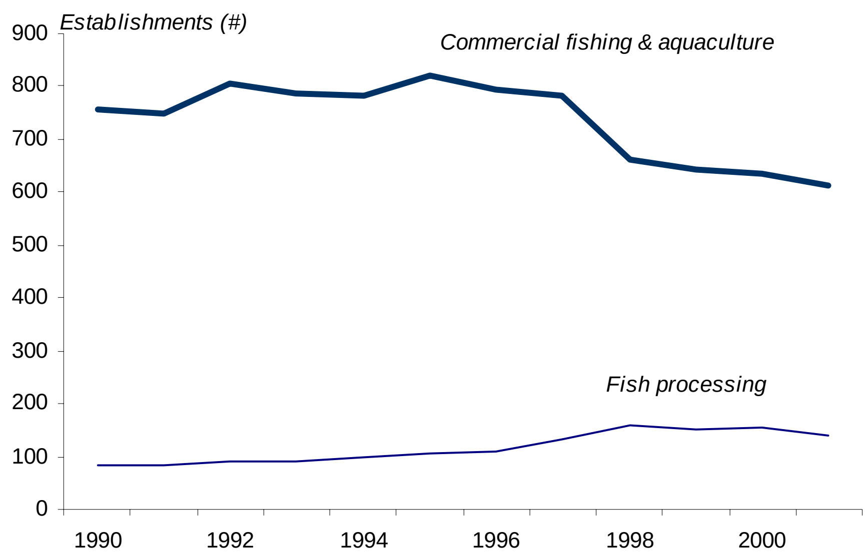
Source: BC STATS
Figure 39

9. Establishment Counts

Statistics Canada's Business Register listed 611 BC establishments actively engaged[16] in the commercial saltwater and freshwater fishery, including aquaculture, in December 2001. Of this total, 109 were primarily engaged in finfish and shellfish farming activities. In addition, 141 establishments in the province were classified as fish processing facilities.

Establishments are classified to an industry based on the activity from which they generate the biggest part of their revenues. For example, an establishment that is mainly engaged in farming finfish but also does some fish processing, would be considered part of the aquaculture industry, rather than in fish processing.

The number of establishments in commercial fishing and aquaculture is falling, primarily due to vertical integration



Source: Statistics Canada, Business Register
Figure 40

Vertical integration of fish farming and processing activities may be partly responsible for differences between the Business Register data and information on the number of companies licenced to engage in fish farming and fish processing activities. Where vertical integration has occurred, two companies that were formerly classified separately to fish processing and aquaculture but have merged and are now operating from a single location would be counted only once, in the industry which corresponds to the activity from which most of their revenues are earned.

[16] These figures exclude establishments that are listed in the register, but do not have an employee payroll.

The Business Register also indicates that there were about 500 boat retailers, guide outfitters and marinas operating in BC at the end of 2001. To put these numbers into perspective, the total number of accommodation establishments was 2,108, and there were 9,450 establishments in the food and beverage services industry.

A total establishment count for the sport fishing industry is not available from Statistics Canada sources. Unlike the commercial fishery, aquaculture or fish processing, many establishments in the sport fishing industry provide services to anglers as well as to people who are not sport fishers. For example, only some of the 2,108 accommodation establishments in the province would have catered primarily to anglers.

The number of establishments is not necessarily a good proxy for the economic activity generated by a particular sector. In some industries, where establishments tend to be large, the count may be low, even though the revenues generated by these establishments could be substantial. For example, in the case of accommodation services, an establishment count would not differentiate between a small bed and breakfast operation and a large hotel in downtown Vancouver.

Estimates of the economic contribution made by sport fishing were based on taking a proportion of activities in all industries providing services to sport fishers. The percentage was applied to industry totals, not to individual data for particular establishments. This means that all establishments in each industry with a sport fishing component have been included, even if only a very small share of their total activities is deemed to be sport fishing related. As a result, a total establishment count for the sector as defined in this study would be of very limited value.

10. Topics for Further Research

Several potential areas requiring further study or work have been identified. They include:

- Revised estimates of GDP by industry (for the period from 1984 to 2001) will be released by Statistics Canada later this year and should be used to update the estimates for the fisheries and aquaculture sector;
- Further refinement of the ratios used to derive the sport fishing GDP, employment and revenue estimates using information from other sources;
- Refining more of the employment data by breaking it down into part-time and full-time employment;
- Developing measures of unincorporated and incorporated business income for the commercial fishery and other components of the fisheries and aquaculture sector, where possible;
- Developing better GDP to output ratios for different types of fish and shellfish farming (this could only be done if additional information on actual costs was collected);
- Incorporating new data from the 2001 Census of Canada when it is released;
- Developing regional data on GDP, employment and revenue;
- Developing export estimates for the sport fishing sector;
- Expanding the export and import data to include estimates of interprovincial trade in fish and seafood products;
- Developing export and import data for other countries such as Thailand or the Philippines, which are major suppliers of fish products to BC;
- Updating the input/output analysis to use the 1997 input/output model when it is available, and
- Developing estimates for some or all components of the fisheries and aquaculture sector for other provinces.

11. Input/Output Analysis

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 1996 input/output tables for the province.

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 1996 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. ***It is important to 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 ($1.9 billion in 2001) 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. It is assumed that these workers will spend $0.75 of every dollar that they earn. 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.

The induced effect, particularly for industries like sport fishing, which are largely supported by personal expenditures (rather than supplying goods and services to other industries) can be difficult to interpret. The reason for this is that it is a measure of increased spending by individuals resulting from an initial increase in spending by individuals (which is what drives the sport fishing industry). In other words, there is a certain circularity inherent in the use of induced effects in this case.

Because it measures increased spending by workers employed as a result of the fisheries and aquaculture sector's activities, the size of the induced effect can vary considerably. It is lower if you assume 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. The "safety net" scenario is based on this assumption

Alternatively, it can be assumed that all of the people who were hired as a result of the sector's activities in the province were previously not receiving any income at all. They were living off savings, or with friends or relatives. The size of the induced effect is much larger in this case, as the increase in income is equal to the total amount of the wages they receive. The "no safety net" scenario is based on this assumption.

The reality is probably somewhere between these two bounds. Some of the people working as a result of the sector's activities may have had no previous source of income, while others might have been receiving some government transfers. Because it is impossible to determine where the actual value lies, the induced effect is usually given as a range.

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. Again, because the induced effect is presented as a range, the overall effect is also presented in this way.

$1 million of output generates an additional $591,000 of economic activity in supplier industries

Based on the 1996 Input/Output results, for every $1 million of output in the fisheries and aquaculture sector, an additional $591,300 of economic activity is generated in the province by industries supplying goods and services used by the commercial fishing, aquaculture, fish processing and sport fishing industries. A $1 million increase in output generates11 direct jobs, and another 4 jobs in industries supplying goods and services to the sector.

Nearly $47,000 in direct tax revenue is generated for every $1 million of output. Of this total, an estimated $18,860 goes into federal coffers (primarily in the form of personal income tax and sales taxes), $23,470 (mainly personal income tax, gas and sales taxes) into provincial coffers, and the remaining $4,430 benefits local governments. In addition, every $1 million spent by the sector produces another $34,740 of additional tax revenue resulting from the economic activity generated in supplier industries.

12. Revisions to the Data in this Report

Most of the changes to the data arise from the reclassification of industries and the rebasing of the constant dollar series. In addition, new sources of data such as the 2000 Survey of Recreational Anglers were used in the calculations. Finally, updated trade data files were used to generate the export and import tables.

Classification System Changes: Using NAICS data

In late 2001, Statistics Canada released provincial GDP estimates by industry that were classified using the North American Industrial Classification System (NAICS). At the same time, the published figures were rebased to use 1997 prices as a basis for comparison and, as was mentioned in the introduction to this paper, the definition of GDP was changed from a factor cost (excluding indirect taxes, but including subsidies) to a basic price concept (which excludes only some indirect taxes).

The effect of the classification system changes was quite substantial for some industries. In the case of the commercial fishery, aquaculture activities, which had previously been included in the total for this industry, were moved into the agriculture sector, and some services (such as bait preparation, fisheries research and development, and fishing gear repair services) were shifted into a number of other industries in the service sector. On the service side, the situation was even more complex as there was considerable shifting of components among industry groups.

At the provincial level, NAICS-based GDP, revenue and wage estimates were only produced for the years from 1997 on. This created some serious challenges for the provincial estimation of GDP by industry estimates. Previously published SIC-based data for 1997 was still preliminary, so some of the changes that were observed in the data were due to the normal revision cycle. This meant that, for the purposes of comparing the new to the old data, there was no year for which consistent estimates were available on both an SIC and a NAICS basis. The waters were further muddied by the change from factor cost to basic prices and, in the case of constant dollar series, by the rebasing of the estimates. The new classification system, together with these conceptual changes, made it difficult to produce time series estimates that would be internally consistent.

Statistics Canada will publish NAICS-based estimates later this fall. As an interim step, BC STATS has produced preliminary GDP data by NAICS industry for the pre-1997 period. The data was generated by comparing reorganized SIC estimates for the province with the new NAICS numbers and with revised national data, for which Statistics Canada provided a longer time series. Constant dollar estimates were then calculated using the linked data, using rebased price indexes. The to be data released by Statistics Canada later this fall may be somewhat different from the BC STATS estimates, as that agency has access to detailed information from individual establishments.

From the perspective of this report, the industry that is most affected by the SIC to NAICS changes is the sport fishery. This is because the sport fishing estimates are derived by applying proportions to industry totals. These proportions may vary from industry to industry, and as they are applied to revised numbers, the overall total has been affected. However, the relative size and trends over time in the sport fishing industry have not changed significantly as a result of these revisions.

Changing to a 1997 base year for constant dollar data

From time to time Statistics Canada revises the base year used to calculate constant dollar (real) GDP. The reason for doing this is that, when there are big changes in prices over time, the use of an increasingly remote base year for constant dollar calculations can introduce distortions into the estimates. This year, the constant dollar GDP estimates have been restated using a base year of 1997. The effect of the rebasing was significant in the commercial fishery, where the mix of species harvested, and their relative prices, changed substantially between 1992 and 1997. The fish processing and aquaculture industries were also affected by these changes. In the case of the sport fishery, swings in prices are less extreme, as the cost of services tends to change more smoothly over time.

Appendix I: Methodological Notes and Issues

A brief summary of various methodological issues that arose in the development of estimates for the fisheries and aquaculture sector follows. Also included is a description of the methods used to generate the estimates.

1. Separating commercial fishing and aquaculture from hunting and trapping.

Statistics Canada data was the starting point for the estimates reported in this study. However, the agency's estimates of GDP, employment and labour income do not report commercial fishing and aquaculture separately. Instead, they are lumped together in the Fishing, Hunting and Trapping Industry (major group 03 in the Standard Industrial Classification system), which includes:

- Commercial fishing (saltwater and freshwater);
- Aquaculture (fish farming); and
- Hunting and Trapping.

In addition, some services related to fishing, such as the operation of fish hatcheries, fishery inspection and protection services, are also included in the industry.

The first challenge was to determine the split between the three components of the industry, since hunting and trapping activities are not part of the fisheries and aquaculture sector.

In order to extract the hunting and trapping component of GDP from the total, an independent estimate of GDP for the hunting and 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 and trapping, commercial fishery and aquaculture 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, data from the census was used to split out the hunting and trapping component of total employment in this industry, as reported by Statistics Canada in the Labour Force Survey.

2. Commercial fishing

Data on the volume and value of fish landings form the basis of the estimates for this industry. Landed value was used as it conforms most closely to the concepts used by Statistics Canada to define the commercial fishing component of the fishing, hunting and 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 then 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 commercial 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 years prior to 1991, the 1991 ratio was used. However, for the herring and halibut fishery, a significant amount of the catch in 1991 was made by the salmon fleet; therefore, the GDP to output ratio for salmon was used for the period from 1984 to 1990. For the period between 1991 and 1994, GDP to output ratios were linearly interpolated.

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., that the relationship between the volume of production and the amount of labour, fuel, and other inputs used by the fleet was stable.

The GDP to output ratio for the commercial fishery has been fairly stable over the longer term, but has begun to fall [17]

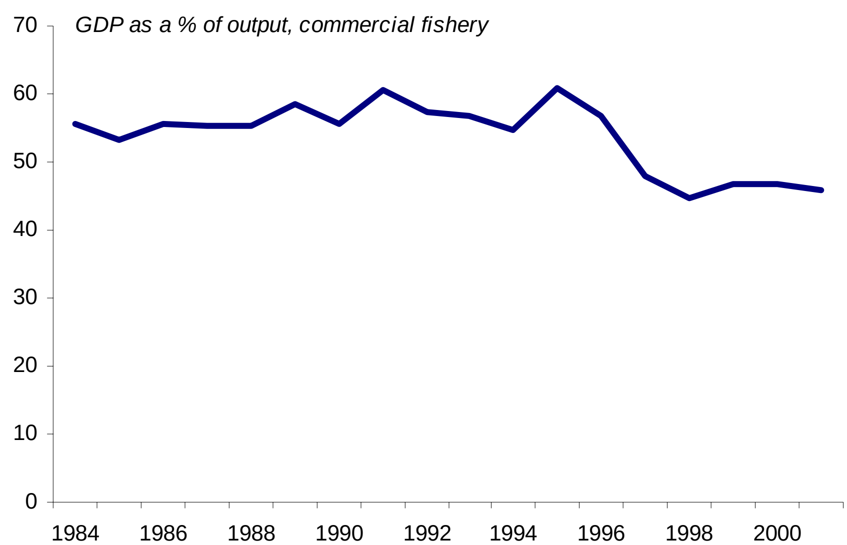


Figure 41

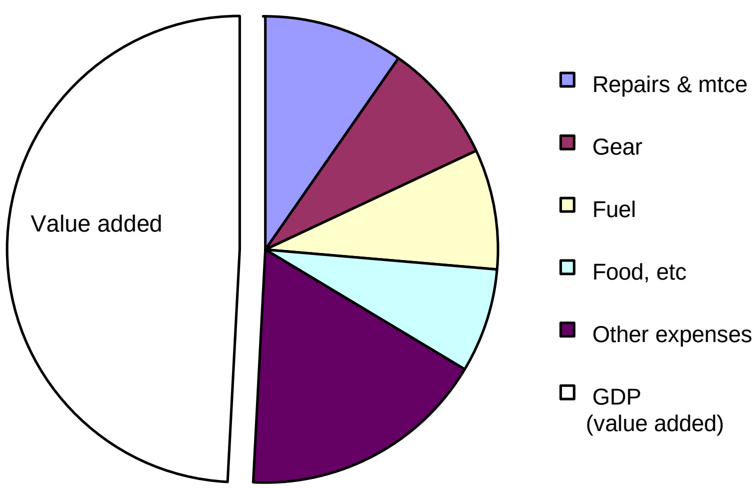
Generally speaking, the relationship between GDP and output does not change significantly from year to year. The exception to this rule of thumb would be if an industry produced many different types of products, with

[17] This ratio reflects the prorating done to force the data to conform to Statistics Canada estimates, so it differs slightly from the ratio used in the initial calculation

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 collapse of the salmon stock in the early 1990s (which resulted in more effort being required to catch fewer fish) can affect the GDP to output ratio. 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.

It should be noted that 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
Figure 42

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.

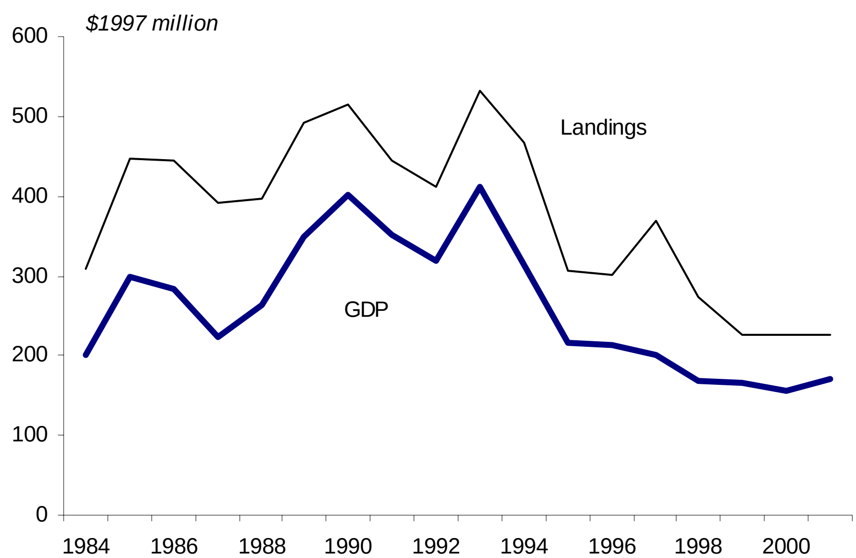
It should be noted that while commercial fishers must purchase a licence to catch fish, they do not have to pay for each fish that they remove from the sea. Thus, a larger share of their revenue represents a return to their labour or capital than is the case in other industries such as aquaculture, where fish stock must be purchased and nurtured before it can be harvested. However, this is partly compensated for by the fact that the price that can be obtained for the fish usually reflects the abundance or scarcity of the fish stock, which has an effect on the amount of effort required to catch it. This is similar to the situation in many service industries, where the value of their output includes some costs for materials, supplies and energy, but largely reflects the amount of effort required to create their product, whether it is an architectural drawing, health care, accounting, or another service.

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 (1997) dollar value of these inputs from the value of production in 1997 dollars.

The relationship between real GDP and output in the commercial fishery has remained quite stable



Source: BC STATS
Figure 43

Revenue for the commercial fishery is equal to the landed value of fish caught in BC.

Information from the 1981, 1986, 1991 and 1996 Censuses of Canada was used to determine the percentage of total **employment** in fishing and trapping that was attributable to fishing activities. This total was further broken down 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.

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

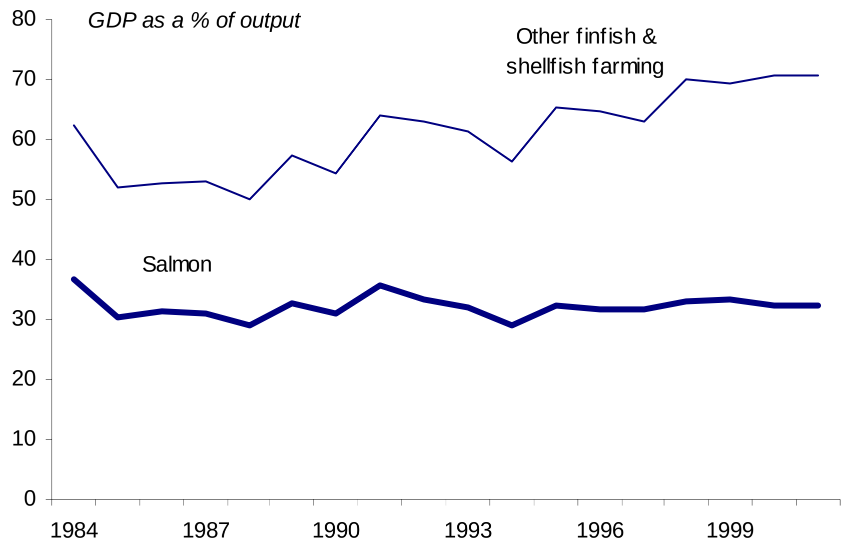
3. Aquaculture

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 2000, formed the basis of the GDP estimates for this industry.

Statistics Canada's 1997-2000 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 cost 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 fishing GDP to output ratio to bring it more in line with information from other sources.

The GDP to output ratio in aquaculture has shifted as the industry's focus has moved away from shellfish farming, where the ratio is higher, to the production of farmed salmon[18]



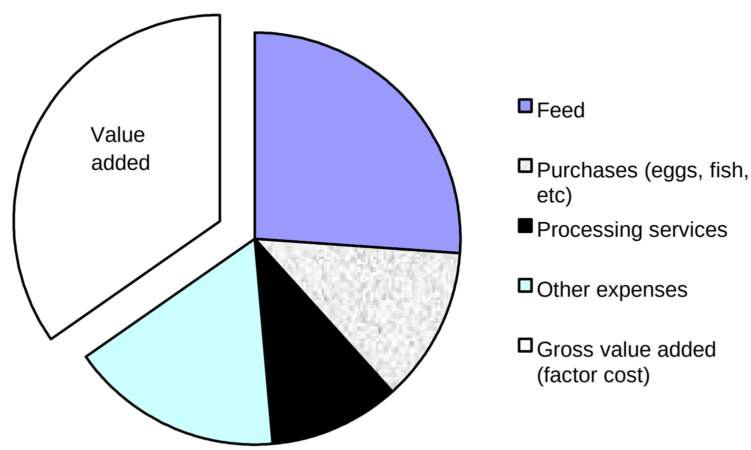
Source: BC STATS
Figure 44

The value of aquaculture production, by species, was obtained from the BC Ministry of Agriculture, Food & Fisheries. 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 revised.

[18] *This ratio reflects the effect of prorating the estimates initially calculated so that they conform to Statistics Canada estimates, as well as changes in the composition of the industry*

The GDP to output ratio in the aquaculture industry is about 35%



Source: Statistics Canada
Figure 45

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.

4. Hunting and 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.

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.

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.

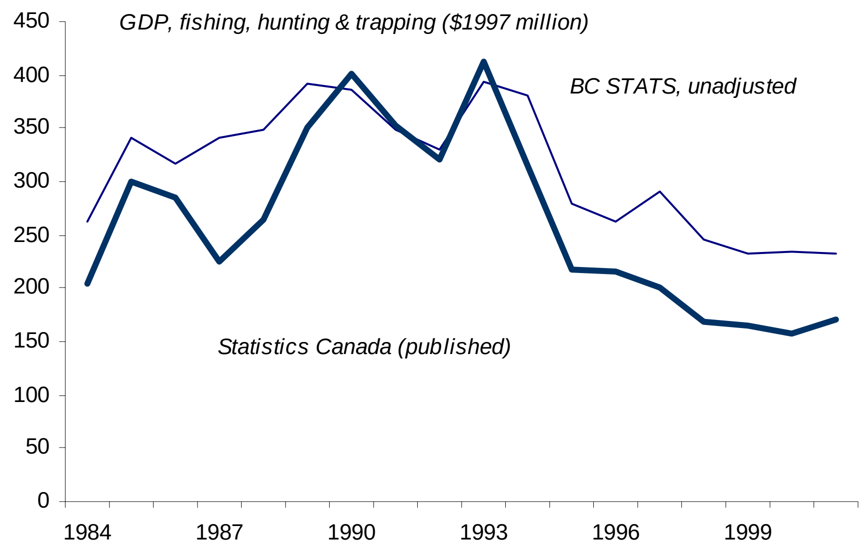
Employment estimates for hunting and trapping were derived from census data on the experienced labour force by occupation. Estimates for inter-censal years were linearly interpolated.

T4-based labour income data was used to determine the hunting and trapping share of total labour income in SIC industry 03.

5. BC STATS estimates versus the Statistics Canada data

The independently derived GDP estimates for commercial fishing, aquaculture and hunting and trapping were summed together, and then compared to the official GDP estimate published by Statistics Canada. As illustrated in the figure below, the BC STATS figures track the published totals quite closely, both in terms of levels and trends. Given that the numbers were derived independently of the Statistics Canada data, and that adjustments are made to the Statistics Canada totals to bring them in line with national estimates, these differences are generally well within the usual margin of acceptability.

BC STATS' unadjusted GDP estimate for fishing, hunting and trapping tracks the previously published Statistics Canada data quite closely, but the discrepancy between the two data sets is greater in the more recent period



Source: Statistics Canada and BC STATS
Figure 46

The relationship between the constant dollar GDP estimates and the rebased and linked Statistics Canada data for the commercial fishery is not as close as it was for the 1992-based data published in the second edition of this report. This is almost certainly because the Statistics Canada totals were rebased by BC STATS using a mechanical link, while the unadjusted data was generated using rebased constant dollar estimates of both outputs and inputs (the so-called double-deflation approach).

6. Fish Processing

Because the fish 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 processing industry. The GDP figures in current dollars are available only to 1998, while constant dollar estimates cover the whole period from 1997 to 2001. 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 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 processing industry is equal to the value of shipments as reported by Statistics Canada.

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.

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 were used in this study.

Statistics Canada bases its determination of the industry to which an establishment[19] is allocated on what BC STATS calls the "50% rule". Simply put, this rule says that an establishment is assigned to the industry corresponding to its primary activity. If an establishment operates both a fishing fleet and a fish 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 processing industry if its primary activity is fish processing. In the case of an establishment 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 processing activities; conversely, some of the fish processing estimates will include revenue, GDP, or employment that is related to commercial fishing.

[19] *An establishment is the smallest unit for which statistics such as employment, salaries, sales, shipments or revenue, and expenses are recorded.*

It is worth noting that a fish-farming establishment that both raises and processes fish would be allocated to the aquaculture sector unless fish 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 processing industry.

8. Defining the sport fishing industry

Unlike the commercial fishery, aquaculture, and fish 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 Standard Industrial Classification; instead, sport fishing activities are imbedded 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 disentangle the information related to these sectors from the various industries in which they have been imbedded.

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 Agriculture, Food & Fisheries (including the working group for the Sport Fishing Regional Economic Impact Survey[20]) 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

[20] 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.

- 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[21].

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 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.

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., doctor's 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.

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 & Oceans Canada angler surveys.

[21] 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.

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 & 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 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[22] 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 resident 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[23].

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 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.

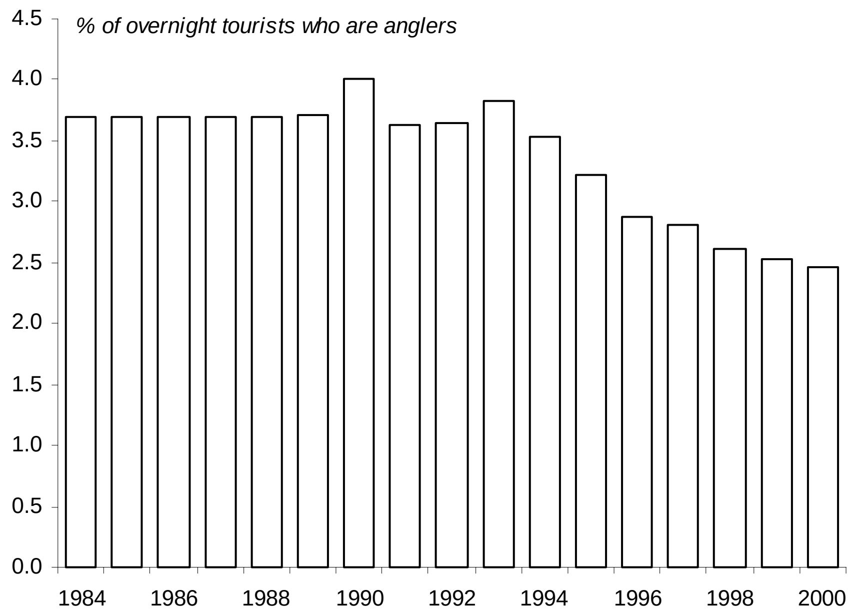
It was assumed that:

- 80% of Canadian residents 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.

[22] More details on the tourism and sport fishing proportions used for each industry are available in the supplementary methodology notes.

[23] 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.

The percentage of overnight tourists who are anglers is declining



Source: BC STATS
Figure 47

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.

Appendix 1 outlines the methods used to determine appropriate shares for each component of the sport fishing industry.

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 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.

12. How these estimates compare to those presented in the project report for the Sport Fishing Regional Economic Impact Survey

The main reason for the difference between the sport fishing data presented in this report and the results of the sport fishing survey is that the industry coverage in the two projects is quite different. A broader definition of the sport fishing industry was used in this report, where the sport fishing industry includes a portion of all tourism activities in the province. Therefore, by definition, the revenue and employment estimates in this report will be higher than those from the sport fishing survey data.

For the regional economic impact survey, it was decided to include only the establishments that met the conditions of the "50% rule" in the survey. Following this definition, establishments that were highly dependent on sport fishing as a source of revenue were surveyed in order to determine the amount of revenue and employment they generated in each region of the province. The scope of that survey was not comparable with the framework for this study. Only those establishments which derived 50% or more of their revenue from sales to anglers were included in the survey, whereas this study encompasses activities in all industries that have a sport fishing component, no matter how small it might be.

Appendix II: Data Sources

Data from various studies of the commercial and recreational fishing industries were used to derive the estimates of GDP, employment, wages and revenue for the four industries presented in this study. This section outlines the data sources for each of the six indicators included in this report.

1. Gross Domestic Product

The GDP data used to derive the estimates in this report comes from Statistics Canada's Industry Measures and Analysis Division. Summary statistics are available in Catalogue 15-203, but more detailed unpublished information (by industry) was provided to BC STATS by Statistics Canada. 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 Agriculture, Food & Fisheries and Fisheries & Oceans Canada.
- The value and volume of aquaculture production, from the Ministry of Agriculture, Food & Fisheries 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 1997-1999, from the Agriculture Division of Statistics Canada.
- Cost and return studies for finfish and shellfish farming, various Ministry of Agriculture, Food & Fisheries reports.
- Total angling licence sales, freshwater (BC Fisheries) and saltwater (Fisheries & Oceans Canada) anglers.
- Spending estimates from the 1980, 1985, 1990 and 1995 surveys of recreational anglers, Fisheries & 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 industries, and the business service industries.

2. Revenue

Data sources used to calculate revenue include:

- Value of fish landings, from the Ministry of Agriculture, Food & Fisheries and Fisheries & Oceans Canada
- Value of aquaculture production, from the Ministry of Agriculture, Food & Fisheries 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.

When annual data on revenue and expenses are available, they are used to calculate GDP for an industry. However, the detailed information required is not always available, or may only be available for selected years. If the data do not extend to the latest year, or if the information is available only for certain years, GDP estimates for the intervening period are often calculated by assuming that the relationship between GDP and output in that industry does not change substantially from year to year. This is usually a safe assumption.

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.

4. Wages and salaries

Labour income estimates come from the Income and Expenditure Accounts Division of Statistics Canada. They are based on Revenue Canada records from T4 slips. Because Revenue Canada 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 Revenue Canada numbers are available, the estimates are recalibrated.

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.

6. Establishment Counts

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

Statistical Tables

Table 1: Real gross domestic product at basic prices
($ 1997 million)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon	66.3	113.5	94.4	42.0	63.9	121.7	139.3	99.5	70.8	124.7	89.0	28.0	30.6	39.9	19.2	9.2	16.0	11.0
Herring	30.1	31.6	20.9	35.6	36.5	52.1	60.9	60.3	52.1	67.6	54.6	36.0	29.2	30.0	22.0	24.7	22.8	21.1
Halibut	12.7	20.3	24.2	18.2	24.0	21.0	19.8	17.2	18.4	28.3	21.9	19.2	19.2	21.6	19.6	21.4	18.4	18.8
Groundfish	37.7	47.6	57.1	48.2	59.1	71.0	84.3	88.4	83.4	86.3	66.1	51.4	48.3	44.5	48.2	50.2	40.5	44.0
Geoducks and Clams	43.8	72.2	71.8	62.4	58.7	59.4	67.2	52.7	46.6	44.4	34.9	30.7	27.8	24.1	23.8	24.8	23.5	25.9
Other	9.6	12.4	14.3	17.2	20.2	23.7	29.0	33.6	47.4	59.9	47.6	50.8	58.8	39.8	34.7	34.6	35.6	49.5
Commercial Total	***200.3***	***297.6***	***282.7***	***223.6***	***262.4***	***348.9***	***400.5***	***351.7***	***318.9***	***411.2***	***314.1***	***216.1***	***214.0***	***200.0***	***167.5***	***164.9***	***156.9***	***170.4***
Aquaculture																		
Salmon	0.2	0.2	0.6	3.1	10.0	21.3	26.8	48.9	35.7	42.1	34.4	44.5	44.2	55.7	68.0	81.2	77.4	105.5
Shellfish	2.0	1.9	1.7	2.1	2.1	2.4	2.8	3.6	3.9	4.1	4.5	6.4	7.3	5.6	6.4	7.1	7.8	10.4
Other	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Aquaculture Total	***2.3***	***2.3***	***2.4***	***5.3***	***12.3***	***23.8***	***29.7***	***52.8***	***39.8***	***46.3***	***39.0***	***51.1***	***51.7***	***61.6***	***74.4***	***88.4***	***85.2***	***116.0***
Fish Processing	***172.4***	***198.0***	***156.0***	***179.3***	***225.2***	***226.3***	***216.3***	***172.7***	***164.9***	***217.7***	***232.4***	***188.6***	***157.5***	***159.8***	***116.3***	***92.3***	***88.9***	***82.0***
Sport Fishing																		
Saltwater	148.1	163.0	168.5	175.2	179.4	179.7	180.2	161.1	155.9	162.9	156.0	151.6	142.8	137.4	131.0	125.6	121.2	120.0
Freshwater	109.8	114.5	117.0	122.4	126.4	128.1	135.4	123.5	119.9	130.5	130.9	130.8	125.0	118.0	116.7	112.7	112.1	112.7
Sport Fishing Total	***257.9***	***277.5***	***285.5***	***297.6***	***305.9***	***307.9***	***315.7***	***284.6***	***275.9***	***293.3***	***286.8***	***282.4***	***267.8***	***255.4***	***247.7***	***238.3***	***233.3***	***232.7***
Total, fisheries & aquaculture	***632.9***	***775.4***	***726.8***	***705.8***	***805.8***	***907.0***	***962.1***	***861.8***	***799.4***	***968.5***	***872.3***	***738.2***	***691.0***	***676.8***	***606.0***	***584.0***	***564.3***	***601.0***
All industries in BC	**67,687.2**	**71,116.9**	**72,112.6**	**76,210.4**	**79,811.7**	**82,482.2**	**84,180.3**	**85,133.3**	**88,391.5**	**92,696.9**	**97,126.5**	**99,623.7**	**101,730.8**	**104,569.3**	**105,959.3**	**108,986.0**	**113,057.6**	**113,849.0**
Goods-producing industries	21,236.3	22,503.7	22,096.7	24,621.0	25,803.6	26,277.5	25,572.9	24,680.3	25,057.4	26,039.0	26,675.9	26,991.9	26,925.7	27,805.5	27,740.8	29,207.2	30,293.1	29,102.4
Resource based	*13,500.3*	*14,387.0*	*14,334.6*	*16,657.4*	*17,272.6*	*16,688.6*	*15,578.2*	*14,533.2*	*15,013.2*	*16,088.8*	*16,016.7*	*16,157.4*	*15,404.0*	*15,731.9*	*15,849.0*	*17,014.5*	*17,837.2*	*17,255.8*
Of which: Agriculture & related	*1,816.8*	*1,790.2*	*1,740.9*	*1,763.5*	*1,875.7*	*1,785.9*	*1,793.6*	*1,820.0*	*2,070.1*	*2,034.4*	*1,862.0*	*1,961.1*	*2,125.0*	*2,197.8*	*2,319.3*	*2,446.3*	*2,496.4*	*2,584.7*
Service-producing industries	32,456.0	34,707.2	37,264.9	39,757.4	43,381.8	47,719.9	51,794.0	55,557.3	59,090.3	62,846.9	66,951.2	69,717.2	72,676.3	76,763.4	78,847.8	81,550.4	86,012.2	88,930.9

Source: BC STATS & Statistics Canada

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

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon		71.1	-16.9	-55.5	52.1	90.4	14.5	-28.6	-28.8	76.0	-28.6	-68.6	9.4	30.3	-51.8	-52.3	75.0	-31.1
Herring		4.9	-33.7	70.4	2.5	42.7	16.9	-1.1	-13.5	29.7	-19.2	-34.2	-18.7	2.7	-26.7	11.9	-7.4	-7.4
Halibut		59.7	19.5	-25.0	32.1	-12.7	-5.7	-13.1	7.0	53.5	-22.5	-12.2	-0.1	12.7	-9.4	9.2	-14.0	2.0
Groundfish		26.2	19.9	-15.7	22.7	20.1	18.7	4.9	-5.6	3.5	-23.4	-22.3	-5.9	-7.9	8.1	4.3	-19.4	8.7
Geoducks and Clams		64.7	-0.5	-13.1	-6.0	1.2	13.1	-21.5	-11.6	-4.7	-21.4	-12.1	-9.6	-13.3	-1.2	4.4	-5.4	10.1
Other		29.3	15.6	19.9	17.4	17.8	22.1	15.8	41.2	26.3	-20.6	6.8	15.8	-32.3	-12.8	-0.3	2.7	39.1
Commercial Total		***48.6***	***-5.0***	***-20.9***	***17.4***	***33.0***	***14.8***	***-12.2***	***-9.3***	***29.0***	***-23.6***	***-31.2***	***-0.9***	***-6.5***	***-16.2***	***-1.5***	***-4.9***	***8.6***
Aquaculture																		
Salmon		-7.2	221.7	415.8	226.6	113.0	25.8	82.9	-27.0	17.8	-18.3	29.4	-0.6	26.0	21.9	19.5	-4.7	36.3
Shellfish		-3.0	-13.1	23.7	0.9	13.1	16.4	30.9	8.6	5.0	9.1	42.8	13.6	-23.2	13.3	11.3	9.9	33.4
Other		15.9	21.8	-10.6	25.7	-23.8	26.5	3.9	-32.0	-33.6	47.0	13.1	-12.9	88.0	-57.5	27.3	-33.5	100.5
Aquaculture Total		***-2.4***	***8.2***	***116.4***	***132.0***	***93.8***	***24.9***	***77.6***	***-24.6***	***16.4***	***-15.8***	***30.9***	***1.2***	***19.2***	***20.8***	***18.8***	***-3.6***	***36.1***
Fish Processing		***14.8***	***-21.2***	***14.9***	***25.6***	***0.5***	***-4.4***	***-20.1***	***-4.5***	***32.0***	***6.8***	***-18.8***	***-16.5***	***1.4***	***-27.2***	***-20.6***	***-3.7***	***-7.8***
Sport Fishing																		
Saltwater		10.1	3.4	4.0	2.4	0.2	0.3	-10.6	-3.2	4.4	-4.2	-2.8	-5.8	-3.8	-4.7	-4.1	-3.6	-1.0
Freshwater		4.3	2.2	4.6	3.3	1.3	5.7	-8.8	-2.9	8.8	0.3	0.0	-4.5	-5.6	-1.0	-3.5	-0.5	0.5
Sport Fishing Total		***7.6***	***2.9***	***4.2***	***2.8***	***0.7***	***2.5***	***-9.8***	***-3.1***	***6.3***	***-2.2***	***-1.5***	***-5.2***	***-4.6***	***-3.0***	***-3.8***	***-2.1***	***-0.3***
Total, fisheries & aquaculture		***22.5***	***-6.3***	***-2.9***	***14.2***	***12.6***	***6.1***	***-10.4***	***-7.2***	***21.1***	***-9.9***	***-15.4***	***-6.4***	***-2.1***	***-10.5***	***-3.6***	***-3.4***	***6.5***
All industries in BC		**5.1**	**1.4**	**5.7**	**4.7**	**3.3**	**2.1**	**1.1**	**3.8**	**4.9**	**4.8**	**2.6**	**2.1**	**2.8**	**1.3**	**2.9**	**3.7**	**0.7**
Goods-producing industries		6.0	-1.8	11.4	4.8	1.8	-2.7	-3.5	1.5	3.9	2.4	1.2	-0.2	3.3	-0.2	5.3	3.7	-3.9
Resource based		*6.6*	*-0.4*	*16.2*	*3.7*	*-3.4*	*-6.7*	*-6.7*	*3.3*	*7.2*	*-0.4*	*0.9*	*-4.7*	*2.1*	*0.7*	*7.4*	*4.8*	*-3.3*
Of which: Agriculture & related		*-1.5*	*-2.8*	*1.3*	*6.4*	*-4.8*	*0.4*	*1.5*	*13.7*	*-1.7*	*-8.5*	*5.3*	*8.4*	*3.4*	*5.5*	*5.5*	*2.0*	*3.5*
Service-producing industries		6.9	7.4	6.7	9.1	10.0	8.5	7.3	6.4	6.4	6.5	4.1	4.2	5.6	2.7	3.4	5.5	3.4

Source: BC STATS & Statistics Canada

Table 2: Gross domestic product at basic prices
($ million)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon	77.2	130.4	147.2	116.9	174.4	149.6	145.7	94.7	99.6	102.0	133.4	35.6	41.9	39.9	23.9	11.9	20.1	9.2
Herring	23.7	33.4	25.6	59.2	53.9	44.6	45.1	38.8	38.8	52.2	52.6	65.3	62.4	30.0	10.4	18.5	18.5	16.1
Halibut	5.0	7.3	13.5	15.6	13.0	10.9	11.7	14.4	14.0	19.3	22.5	22.4	20.7	21.6	12.8	17.8	20.6	17.5
Groundfish	17.6	18.2	23.8	33.0	32.0	33.3	38.1	53.8	48.1	41.8	48.1	52.7	42.4	44.5	42.9	43.3	43.6	39.3
Geoducks and Clams	4.4	5.0	5.3	8.5	10.9	13.5	10.5	9.8	14.1	21.8	26.0	36.3	29.7	24.1	20.3	22.7	27.2	29.3
Other	5.8	5.2	6.4	9.2	9.5	12.3	13.2	16.3	22.5	24.2	28.6	39.6	43.3	39.8	27.3	31.7	41.3	52.7
Commercial Total	***133.7***	***199.5***	***221.8***	***242.5***	***293.6***	***264.1***	***264.2***	***227.9***	***237.2***	***261.3***	***311.3***	***251.9***	***240.3***	***200.0***	***137.5***	***146.0***	***171.3***	***164.1***
Aquaculture																		
Salmon	0.3	0.2	0.9	4.0	11.4	19.5	24.5	39.5	38.6	44.3	44.5	55.2	49.3	55.7	75.8	97.2	90.2	87.3
Shellfish	1.4	1.4	1.4	1.5	1.5	1.8	2.1	2.7	3.0	3.3	3.8	6.3	7.2	5.6	6.4	7.4	9.4	12.0
Other	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2
Aquaculture Total	***1.8***	***1.8***	***2.5***	***5.6***	***13.0***	***21.5***	***26.8***	***42.4***	***41.7***	***47.6***	***48.4***	***61.7***	***56.7***	***61.6***	***82.3***	***104.8***	***99.7***	***99.4***
Fish Processing	***170.6***	***197.5***	***167.5***	***175.2***	***263.4***	***227.6***	***250.3***	***231.8***	***173.2***	***238.8***	***392.2***	***377.3***	***249.8***	***159.8***	***160.4***	***132.5***	***119.3***	***102.0***
Sport Fishing																		
Saltwater	89.7	104.6	116.3	123.0	131.0	138.2	143.1	140.7	138.5	148.0	143.5	143.1	140.2	137.4	134.1	132.8	131.7	134.5
Freshwater	67.4	74.5	82.6	86.9	93.4	99.4	108.5	107.9	107.1	119.2	121.0	123.9	123.0	118.0	119.4	118.4	120.9	124.8
Sport Fishing Total	***157.1***	***179.1***	***198.9***	***209.8***	***224.4***	***237.6***	***251.7***	***248.6***	***245.6***	***267.2***	***264.5***	***267.0***	***263.2***	***255.4***	***253.5***	***251.2***	***252.6***	***259.3***
Total, fisheries & aquaculture	***463.3***	***578.0***	***590.6***	***633.2***	***794.4***	***750.8***	***792.9***	***750.7***	***697.6***	***814.9***	***1,016.4***	***957.9***	***809.9***	***676.8***	***633.7***	***634.4***	***642.9***	***624.8***

Source: BC STATS & Statistics Canada

Table 2a: Gross domestic product at basic prices
(annual % change)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon		68.9	12.8	-20.6	49.2	-14.2	-2.6	-35.0	5.2	2.4	30.8	-73.3	17.6	-4.8	-40.2	-50.0	68.4	-54.1
Herring		41.0	-23.2	130.9	-8.9	-17.3	1.1	-14.0	0.2	34.3	0.9	24.1	-4.4	-51.9	-65.5	78.8	-0.5	-12.8
Halibut		45.0	84.9	15.9	-16.9	-15.8	6.7	23.7	-2.9	38.1	16.3	-0.3	-7.8	4.8	-40.9	39.5	15.4	-15.1
Groundfish		3.8	30.3	39.1	-3.1	3.9	14.6	41.3	-10.7	-13.0	15.1	9.4	-19.5	5.1	-3.7	1.0	0.5	-9.8
Geoducks and Clams		14.2	6.1	60.4	27.3	23.9	-22.4	-6.1	43.3	54.9	19.3	39.7	-18.2	-18.9	-15.8	11.8	20.2	7.5
Other		-10.6	22.7	44.5	2.4	29.8	7.2	23.9	38.2	7.2	18.3	38.5	9.3	-8.0	-31.5	16.1	30.4	27.6
Commercial Total		***49.3***	***11.1***	***9.4***	***21.1***	***-10.1***	***0.0***	***-13.7***	***4.1***	***10.2***	***19.1***	***-19.1***	***-4.6***	***-16.8***	***-31.3***	***6.2***	***17.3***	***-4.2***
Aquaculture																		
Salmon		-3.7	242.6	366.1	186.5	71.4	25.3	61.5	-2.3	14.8	0.5	24.1	-10.7	13.0	36.0	28.3	-7.2	-3.2
Shellfish		2.4	-0.4	1.6	1.5	22.6	17.9	26.6	10.2	10.1	15.9	65.7	14.3	-21.9	13.9	15.5	27.4	26.9
Other		-17.1	34.7	-23.3	7.8	-16.9	36.4	14.9	-43.5	-23.9	32.1	28.1	-11.3	52.4	-41.8	7.2	-26.1	81.8
Aquaculture Total		***-0.4***	***35.5***	***124.5***	***133.3***	***64.8***	***24.7***	***58.4***	***-1.7***	***14.3***	***1.7***	***27.4***	***-8.1***	***8.6***	***33.7***	***27.3***	***-4.8***	***-0.3***
Fish Processing		***15.8***	***-15.2***	***4.6***	***50.3***	***-13.6***	***10.0***	***-7.4***	***-25.3***	***37.9***	***64.3***	***-3.8***	***-33.8***	***-36.0***	***0.4***	***-17.4***	***-9.9***	***-14.5***
Sport Fishing																		
Saltwater		16.5	11.2	5.8	6.5	5.5	3.6	-1.7	-1.5	6.9	-3.1	-0.3	-2.0	-2.0	-2.4	-1.0	-0.8	2.1
Freshwater		10.6	10.8	5.2	7.6	6.4	9.2	-0.5	-0.8	11.3	1.5	2.4	-0.8	-4.0	1.2	-0.8	2.1	3.3
Sport Fishing Total		***14.0***	***11.1***	***5.5***	***6.9***	***5.9***	***5.9***	***-1.2***	***-1.2***	***8.8***	***-1.0***	***1.0***	***-1.4***	***-2.9***	***-0.8***	***-0.9***	***0.6***	***2.6***
Total, fisheries & aquaculture		***24.8***	***2.2***	***7.2***	***25.5***	***-5.5***	***5.6***	***-5.3***	***-7.1***	***16.8***	***24.7***	***-5.8***	***-15.4***	***-16.4***	***-6.4***	***0.1***	***1.3***	***-2.8***

Source: BC STATS & Statistics Canada

Table 3: Employment (based on data from the Labour Force Survey) (thousands)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial fishery	***4.1***	***6.4***	***6.6***	***6.0***	***6.1***	***6.8***	***6.4***	***6.7***	***4.9***	***6.2***	***6.0***	***4.4***	***4.9***	***5.2***	***3.4***	***3.6***	***4.6***	***5.4***
Aquaculture	***0.9***	***1.0***	***1.0***	***1.6***	***1.6***	***1.7***	***1.7***	***1.7***	***1.9***	***1.9***	***1.9***	***1.8***	***1.8***	***1.8***	***1.7***	***1.5***	***1.8***	***1.9***
Fish processing	***4.1***	***2.8***	***4.4***	***4.2***	***3.5***	***4.0***	***3.1***	***3.2***	***5.3***	***3.2***	***4.9***	***3.8***	***3.5***	***3.8***	***2.7***	***2.6***	***2.2***	***3.9***
Sport fishing	***7.6***	***8.7***	***9.0***	***9.4***	***9.8***	***11.3***	***12.0***	***10.3***	***10.5***	***10.4***	***10.0***	***9.2***	***8.9***	***8.7***	***8.3***	***8.1***	***8.4***	***8.9***
Saltwater	4.1	5.1	5.3	5.7	6.0	6.9	6.8	5.8	5.9	5.8	5.5	4.9	4.7	4.7	4.4	4.3	4.4	4.7
Freshwater	3.5	3.7	3.7	3.8	3.8	4.4	5.1	4.4	4.6	4.6	4.6	4.3	4.2	4.0	3.9	3.8	4.0	4.3
Total, fisheries & aquaculture	***16.6***	***19.0***	***20.9***	***21.2***	***21.0***	***23.7***	***23.1***	***21.9***	***22.6***	***21.6***	***22.8***	***19.2***	***19.2***	***19.5***	***16.1***	***15.8***	***17.0***	***20.1***
All industries in BC	**1,248.0**	**1,273.8**	**1,328.5**	**1,374.6**	**1,435.4**	**1,508.9**	**1,554.9**	**1,572.6**	**1,620.3**	**1,675.9**	**1,754.0**	**1,792.3**	**1,821.2**	**1,869.0**	**1,870.2**	**1,906.4**	**1,949.1**	**1,942.4**
Goods-producing industries	320.8	328.4	317.1	332.1	352.1	387.3	390.4	377.6	372.0	384.5	401.6	405.4	410.2	417.8	408.9	396.5	414.4	392.0
Resource based	*190.9*	*193.1*	*185.1*	*189.4*	*193.1*	*204.1*	*194.8*	*195.2*	*189.8*	*193.9*	*199.2*	*197.2*	*203.8*	*206.5*	*200.3*	*190.6*	*202.7*	*186.2*
Of which: Agriculture & related	*52.9*	*55.4*	*48.9*	*50.1*	*49.0*	*48.7*	*45.8*	*49.3*	*44.1*	*51.4*	*50.7*	*42.1*	*49.2*	*53.1*	*54.6*	*46.2*	*49.5*	*46.3*
Service-producing industries	927.2	945.4	1,011.4	1,042.6	1,083.4	1,121.6	1,164.5	1,194.9	1,248.3	1,291.4	1,352.4	1,386.9	1,410.9	1,451.2	1,461.2	1,509.8	1,534.7	1,550.4

Source: BC STATS & Statistics Canada

Table 3a: Employment (based on data from the Labour Force Survey)
(annual % change)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial fishery		58.4	2.5	-8.9	1.7	11.5	-5.9	4.5	-26.8	25.6	-2.3	-27.6	13.0	5.7	-35.2	6.8	27.8	17.4
Aquaculture		17.8	-6.8	64.6	0.0	3.1	1.5	1.5	11.8	-1.1	-1.1	-1.1	-1.1	-1.1	-8.3	-9.1	20.0	5.6
Fish processing		-33.0	58.4	-3.6	-16.7	14.3	-22.5	3.2	65.6	-39.6	53.1	-22.4	-7.9	8.6	-28.9	-3.7	-15.4	77.3
Sport fishing		15.2	2.9	5.1	3.7	15.2	5.9	-14.1	2.7	-1.7	-3.1	-8.5	-3.2	-2.2	-4.2	-3.0	3.6	6.5
Saltwater		23.9	5.2	6.1	6.3	14.9	-1.3	-14.2	1.5	-3.1	-4.6	-10.6	-3.3	-1.4	-5.3	-2.9	2.5	6.1
Freshwater		5.0	-0.3	3.7	-0.2	15.6	17.4	-14.0	4.2	0.2	-1.2	-5.8	-3.0	-3.0	-3.0	-3.0	4.8	7.0
Total, fisheries & aquaculture		14.0	10.3	1.7	-1.2	13.0	-2.6	-5.5	3.6	-4.6	5.7	-15.9	-0.2	1.9	-17.7	-1.7	7.5	18.5
All industries in BC		2.1	4.3	3.5	4.4	5.1	3.0	1.1	3.0	3.4	4.7	2.2	1.6	2.6	0.1	1.9	2.2	-0.3
Goods-producing industries		2.4	-3.4	4.7	6.0	10.0	0.8	-3.3	-1.5	3.4	4.4	0.9	1.2	1.9	-2.1	-3.0	4.5	-5.4
Resource based		1.1	-4.1	2.3	2.0	5.7	-4.6	0.2	-2.8	2.2	2.7	-1.0	3.3	1.3	-3.0	-4.8	6.3	-8.1
Of which: Agriculture & related		4.7	-11.7	2.4	-2.2	-0.7	-5.8	7.6	-10.5	16.6	-1.3	-17.1	16.9	8.0	2.7	-15.3	7.1	-6.5
Service-producing industries		2.0	7.0	3.1	3.9	3.5	3.8	2.6	4.5	3.5	4.7	2.6	1.7	2.9	0.7	3.3	1.6	1.0

Source: BC STATS & Statistics Canada

Table 4: Wages and salaries
($ million)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial fishery*	***11.3***	***15.0***	***21.4***	***26.2***	***35.3***	***41.4***	***36.6***	***23.9***	***25.3***	***26.7***	***32.1***	***23.6***	***22.4***	***18.6***	***10.3***	***9.0***	***8.1***	***5.8***
Aquaculture	***0.5***	***0.4***	***0.8***	***1.9***	***5.3***	***12.1***	***14.1***	***21.9***	***21.1***	***23.6***	***22.2***	***34.9***	***31.2***	***30.0***	***30.5***	***35.0***	***37.0***	***36.9***
Fish processing	***113.9***	***121.6***	***121.8***	***136.7***	***152.5***	***168.4***	***170.5***	***191.6***	***203.0***	***222.3***	***208.8***	***193.1***	***170.4***	***154.0***	***148.7***	***134.8***	***141.7***	***152.5***
Sport fishing	***100.3***	***115.6***	***119.0***	***125.5***	***137.5***	***145.2***	***170.1***	***159.0***	***167.8***	***173.6***	***160.9***	***159.1***	***147.0***	***144.3***	***143.9***	***142.3***	***137.3***	***138.3***
Saltwater	54.8	68.4	72.2	77.0	85.7	89.8	98.6	92.0	96.1	97.4	88.4	86.0	79.0	78.3	77.1	76.1	72.2	72.2
Freshwater	45.4	47.2	46.9	48.7	52.1	55.5	71.5	67.0	71.6	76.2	72.5	73.1	67.9	66.0	66.8	66.2	65.1	66.1
Total	***226.0***	***252.6***	***263.0***	***290.3***	***330.6***	***367.1***	***391.3***	***396.4***	***417.1***	***446.2***	***423.9***	***410.7***	***371.0***	***346.8***	***333.3***	***321.1***	***324.1***	***333.4***
All industries in BC	**25,078.6**	**26,223.5**	**27,464.2**	**29,905.7**	**32,794.5**	**36,689.7**	**40,010.1**	**41,376.7**	**43,405.5**	**45,342.5**	**47,312.4**	**49,383.0**	**51,178.5**	**53,034.5**	**54,173.2**	**56,263.5**	**59,543.1**	**60,775.5**
Goods-producing industries	**7,092.2**	**7,449.5**	**7,398.6**	**8,211.4**	**9,177.6**	**10,246.7**	**10,724.3**	**10,544.6**	**10,917.8**	**11,266.4**	**11,873.9**	**12,351.8**	**12,767.2**	**13,163.0**	**12,896.0**	**13,393.8**	**14,121.3**	**13,801.4**
Agriculture & related	*581.3*	*625.5*	*647.0*	*714.7*	*807.0*	*744.4*	*721.8*	*713.9*	*782.4*	*772.3*	*792.2*	*868.8*	*861.4*	*853.9*	*907.1*	*937.9*	*1,019.3*	*1,090.3*
Forestry & related	*2,653.1*	*2,790.3*	*2,756.3*	*3,017.0*	*3,110.1*	*3,434.4*	*3,455.5*	*3,299.6*	*3,514.0*	*3,832.9*	*4,087.6*	*4,419.6*	*4,414.6*	*4,434.3*	*4,023.0*	*4,474.4*	*4,747.1*	*4,227.0*
Service-producing industries	**17,986.4**	**18,774.0**	**20,065.6**	**21,694.3**	**23,616.9**	**26,443.0**	**29,285.8**	**30,832.1**	**32,487.8**	**34,076.1**	**35,438.4**	**37,031.1**	**38,411.3**	**39,871.5**	**41,277.3**	**42,869.6**	**45,421.8**	**46,974.2**

** Wages and salaries exclude the earnings of owner operators of unincorporated businesses*
Wage and salary estimates for aquaculture are from the Statistics Canada Survey of Aquaculture, and are only available for 1997 to 2000. Data for other years are BC Stats estimates, and are somewhat less robust

Source: BC STATS & Statistics Canada

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

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial fishery*		33.0	42.0	22.5	34.8	17.3	-11.4	-34.9	5.9	5.9	19.9	-26.5	-4.9	-17.0	-44.6	-12.9	-10.0	-28.5
Aquaculture		-12.8	78.5	154.2	173.5	130.2	15.9	55.5	-3.7	11.8	-6.0	57.7	-10.7	-3.9	1.7	14.8	5.7	-0.3
Fish processing		6.8	0.2	12.2	11.6	10.4	1.3	12.4	5.9	9.5	-6.1	-7.5	-11.8	-9.6	-3.5	-9.3	5.1	7.6
Sport fishing		15.2	3.0	5.5	9.6	5.6	17.1	-6.5	5.5	3.5	-7.3	-1.1	-7.6	-1.9	-0.3	-1.1	-3.5	0.7
Saltwater		24.9	5.6	6.7	11.2	4.9	9.7	-6.7	4.5	1.3	-9.2	-2.8	-8.1	-0.9	-1.6	-1.3	-5.1	0.0
Freshwater		3.9	-0.6	3.7	7.0	6.6	28.8	-6.2	6.9	6.3	-4.8	0.8	-7.1	-2.9	1.3	-0.9	-1.6	1.5
Total		11.8	4.1	10.4	13.9	11.0	6.6	1.3	5.2	7.0	-5.0	-3.1	-9.7	-6.5	-3.9	-3.7	0.9	2.9
All industries in BC		4.6	4.7	8.9	9.7	11.9	9.0	3.4	4.9	4.5	4.3	4.4	3.6	3.6	2.1	3.9	5.8	2.1
Goods-producing industries		5.0	-0.7	11.0	11.8	11.6	4.7	-1.7	3.5	3.2	5.4	4.0	3.4	3.1	-2.0	3.9	5.4	-2.3
Agriculture & related		7.6	3.4	10.5	12.9	-7.8	-3.0	-1.1	9.6	-1.3	2.6	9.7	-0.9	-0.9	6.2	3.4	8.7	7.0
Forestry & related		5.2	-1.2	9.5	3.1	10.4	0.6	-4.5	6.5	9.1	6.6	8.1	-0.1	0.4	-9.3	11.2	6.1	-11.0
Service-producing industries		4.4	6.9	8.1	8.9	12.0	10.8	5.3	5.4	4.9	4.0	4.5	3.7	3.8	3.5	3.9	6.0	3.4

** Wages and salaries exclude the earnings of owner operators of unincorporated businesses*
Wage and salary estimates for aquaculture are from the Statistics Canada Survey of Aquaculture, and are only available for 1997 to 1999

Source: BC STATS & Statistics Canada

Table 5: Revenue
($ million)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon	144.8	246.7	265.8	212.1	312.1	256.1	263.4	172.5	191.9	201.1	256.4	85.8	99.2	109.7	54.0	26.3	50.4	33.3
Herring	44.4	63.1	46.3	107.4	96.5	76.3	81.5	58.3	60.3	83.0	90.3	93.9	99.7	66.9	36.6	48.6	50.1	43.2
Halibut	9.4	13.8	24.3	28.3	23.2	18.7	21.1	21.8	21.5	30.3	37.5	34.1	32.4	41.6	30.8	38.7	42.5	37.2
Groundfish	26.1	32.2	41.4	58.8	59.6	55.3	66.6	81.0	78.5	71.3	91.0	84.1	74.0	86.5	90.9	93.6	92.5	86.8
Geoducks and Clams	5.7	7.9	8.1	13.2	17.8	19.6	16.0	13.1	19.0	29.8	37.5	45.9	38.5	37.6	35.1	39.0	46.5	49.8
Other	10.5	11.3	13.5	20.0	21.6	24.7	27.7	30.2	41.4	45.2	56.8	70.2	78.6	76.1	60.4	66.7	84.9	107.8
Commercial Total	***240.8***	***375.0***	***399.4***	***439.7***	***530.8***	***450.7***	***476.2***	***376.8***	***412.6***	***460.8***	***569.4***	***414.1***	***422.4***	***418.4***	***307.7***	***312.9***	***366.9***	***358.1***
Aquaculture																		
Salmon	0.7	0.8	2.7	12.9	39.1	59.7	78.6	110.9	115.5	138.1	153.8	170.4	155.9	176.2	229.0	290.5	278.4	269.4
Shellfish	2.1	2.6	2.5	2.6	2.8	3.0	3.8	4.0	4.6	5.3	6.6	9.4	10.9	8.7	9.0	10.5	13.2	16.7
Other	0.4	0.4	0.6	0.4	0.5	0.4	0.5	0.5	0.3	0.3	0.4	0.4	0.4	0.6	0.3	0.4	0.3	0.5
Aquaculture Total	***3.2***	***3.9***	***5.8***	***15.9***	***42.4***	***63.1***	***82.9***	***115.5***	***120.4***	***143.7***	***160.8***	***180.2***	***167.3***	***185.4***	***238.3***	***301.4***	***291.9***	***286.6***
Fish Processing	***389.6***	***526.1***	***574.3***	***683.1***	***776.1***	***744.4***	***784.5***	***709.7***	***634.6***	***689.8***	***862.8***	***793.7***	***720.2***	***587.3***	***505.4***	***595.8***	***651.5***	***601.8***
Sport Fishing																		
Saltwater	218.1	256.0	272.8	303.8	330.8	353.9	369.7	359.0	356.6	382.7	376.6	375.9	360.2	361.1	358.7	346.2	339.1	341.3
Freshwater	165.7	182.7	192.5	213.5	232.3	251.6	278.9	274.9	276.3	313.9	329.0	336.4	325.5	318.2	327.1	318.8	327.4	333.8
Sport Fishing Total	***383.7***	***438.7***	***465.3***	***517.3***	***563.0***	***605.5***	***648.6***	***634.0***	***632.9***	***696.6***	***705.7***	***712.2***	***685.7***	***679.3***	***685.8***	***665.0***	***666.5***	***675.1***
Total, fisheries and aquaculture	***1,017.4***	***1,343.7***	***1,444.8***	***1,656.0***	***1,912.3***	***1,863.8***	***1,992.3***	***1,836.0***	***1,800.4***	***1,990.7***	***2,298.7***	***2,100.4***	***1,995.6***	***1,870.4***	***1,737.2***	***1,875.1***	***1,976.8***	***1,921.7***

Revenue for the commercial fishery and aquaculture industries is measured by landed value

Sources: BC Fisheries, Fisheries & Oceans Canada, BC STATS and Statistics Canada

Table 5a: Revenue
(annual % change)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Commercial Fishery																		
Salmon		70.4	7.7	-20.2	47.2	-17.9	2.9	-34.5	11.2	4.8	27.5	-66.5	15.6	10.6	-50.8	-51.3	91.7	-33.9
Herring		42.2	-26.6	131.9	-10.2	-20.9	6.8	-28.5	3.5	37.7	8.7	4.0	6.2	-32.9	-45.3	32.8	3.1	-13.8
Halibut		46.3	76.6	16.4	-18.0	-19.5	12.7	3.4	-1.1	40.7	23.7	-8.9	-5.1	28.6	-26.1	25.8	9.8	-12.5
Groundfish		23.6	28.4	42.0	1.5	-7.3	20.3	21.6	-3.0	-9.2	27.6	-7.5	-12.1	17.0	5.1	3.0	-1.2	-6.2
Geoducks and Clams		38.5	3.2	62.3	34.7	9.9	-18.2	-18.1	44.6	57.1	26.0	22.4	-16.2	-2.3	-6.6	11.1	19.2	7.1
Other		8.3	18.7	48.4	8.0	14.8	11.8	9.1	37.1	9.3	25.6	23.6	12.0	-3.2	-20.7	10.5	27.3	27.0
Commercial Total		***55.7***	***6.5***	***10.1***	***20.7***	***-15.1***	***5.6***	***-20.9***	***9.5***	***11.7***	***23.6***	***-27.3***	***2.0***	***-0.9***	***-26.5***	***1.7***	***17.3***	***-2.4***
Aquaculture																		
Salmon		16.8	232.7	371.8	203.6	52.8	31.6	41.0	4.1	19.7	11.3	10.8	-8.5	13.0	30.0	26.9	-4.2	-3.2
Shellfish		***24.1***	***-3.4***	***2.5***	***7.4***	***9.0***	***23.7***	***7.1***	***14.4***	***14.4***	***25.8***	***42.8***	***15.9***	***-20.7***	***3.7***	***16.7***	***25.7***	***26.5***
Other		0.5	30.8	-22.3	14.3	-25.9	43.3	0.4	-39.8	-20.7	46.3	14.4	-9.1	52.4	-41.8	7.2	-26.1	81.8
Aquaculture Total		***19.4***	***50.5***	***173.0***	***166.4***	***49.0***	***31.3***	***39.2***	***4.2***	***19.3***	***11.9***	***12.1***	***-7.2***	***10.9***	***28.5***	***26.5***	***-3.2***	***-1.8***
Fish processing		***35.0***	***9.2***	***18.9***	***13.6***	***-4.1***	***5.4***	***-9.5***	***-10.6***	***8.7***	***25.1***	***-8.0***	***-9.3***	***-18.5***	***-13.9***	***17.9***	***9.4***	***-7.6***
Sport Fishing																		
Saltwater		17.4	6.6	11.4	8.9	7.0	4.5	-2.9	-0.7	7.3	-1.6	-0.2	-4.2	0.3	-0.7	-3.5	-2.1	0.7
Freshwater		10.3	5.4	10.9	8.8	8.3	10.9	-1.4	0.5	13.6	4.8	2.2	-3.2	-2.2	2.8	-2.5	2.7	2.0
Sport Fishing Total		***14.3***	***6.1***	***11.2***	***8.8***	***7.5***	***7.1***	***-2.3***	***-0.2***	***10.1***	***1.3***	***0.9***	***-3.7***	***-0.9***	***1.0***	***-3.0***	***0.2***	***1.3***
Total, fisheries and aquaculture		***32.1***	***7.5***	***14.6***	***15.5***	***-2.5***	***6.9***	***-7.8***	***-1.9***	***10.6***	***15.5***	***-8.6***	***-5.0***	***-6.3***	***-7.1***	***7.9***	***5.4***	***-2.8***

Revenue for the commercial fishery and aquaculture industries is measured by landed value

Sources: BC Fisheries, Fisheries & Oceans Canada, BC STATS and Statistics Canada

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total, wild finfish and shellfish	***699.0***	***735.6***	***753.6***	***648.0***	***623.8***	***677.8***	***748.9***	***659.9***	***683.5***	***607.6***	***559.1***	***584.3***	***662.7***	***693.5***
Wild finfish	***644.5***	***684.2***	***698.5***	***589.1***	***543.4***	***583.9***	***629.9***	***511.0***	***533.3***	***459.3***	***436.8***	***465.1***	***521.4***	***552.7***
Wild salmon	389.7	453.8	456.0	352.1	311.8	298.9	346.2	187.3	190.6	189.4	143.4	103.5	116.8	127.6
Herring	155.4	148.1	156.3	129.1	120.1	153.2	130.7	157.5	199.9	106.8	104.9	99.7	132.1	104.6
Halibut	18.9	9.7	14.0	20.7	22.9	32.1	40.3	35.7	33.5	38.1	48.3	78.1	74.0	71.7
Other	80.5	72.5	72.2	87.3	88.6	99.8	112.7	130.5	109.4	125.0	140.2	183.8	198.6	248.8
Shellfish*	***54.5***	***51.4***	***55.1***	***58.9***	***80.4***	***93.9***	***119.0***	***148.9***	***150.3***	***148.4***	***122.3***	***119.2***	***141.3***	***140.8***
Geoducks and clams	22.4	24.2	15.1	13.4	19.4	29.2	42.3	58.7	47.0	51.5	51.0	59.0	55.1	51.6
Shrimp and prawns	6.6	3.8	6.0	7.6	7.2	10.0	12.0	26.1	33.0	32.6	26.0	19.5	38.5	31.0
Crabs	6.3	2.6	6.9	6.1	10.3	23.1	25.8	25.0	38.7	33.3	19.6	23.4	26.9	40.3
Other shellfish	19.1	20.8	27.1	31.8	43.4	31.5	38.9	39.1	31.6	31.0	25.7	17.3	20.8	17.9
Farmed finfish and shellfish**	***2.7***	***10.0***	***14.4***	***48.0***	***95.6***	***114.9***	***143.9***	***180.0***	***153.7***	***213.0***	***245.8***	***260.7***	***232.7***	***269.3***
Farmed salmon	0.9	9.1	12.7	46.0	93.7	112.2	140.1	175.5	149.4	208.5	241.5	255.6	227.7	264.2
Farmed shellfish	1.8	0.9	1.7	1.9	1.9	2.7	3.8	4.5	4.3	4.2	3.1	4.6	4.8	4.9
Other fish and seafood products	***0.1***	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	***0.2***	***0.0***	***0.1***	***0.1***	***0.1***	***0.0***	***0.1***	***0.2***
Total	***701.8***	***745.6***	***768.0***	***696.0***	***719.5***	***792.8***	***893.1***	***839.9***	***837.3***	***820.8***	***805.1***	***845.0***	***895.6***	***962.9***
Other related products***	***9.7***	***12.3***	***8.0***	***7.0***	***8.4***	***7.4***	***6.5***	***8.0***	***7.8***	***8.5***	***8.1***	***7.6***	***7.5***	***8.5***
Total, fish and seafood products	***711.5***	***757.8***	***776.0***	***703.1***	***727.8***	***800.2***	***899.6***	***847.9***	***845.1***	***829.3***	***813.1***	***852.6***	***903.1***	***971.4***
Fishing vessels & factory ships	0.4	0.6	0.9	0.7	0.4	0.7	0.2	0.3	1.0	0.4	3.7	0.8	1.3	4.5
Pleasure boats and motors	28.8	16.0	19.0	16.8	13.0	19.9	31.1	33.8	55.9	49.5	89.6	108.7	84.2	168.2
Fishing lines, nets, etc	1.8	0.7	1.3	1.5	1.1	1.7	1.7	2.9	3.0	4.1	3.7	4.6	6.6	8.3

** 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*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total, wild finfish and shellfish		***5.2***	***2.5***	***-14.0***	***-3.7***	***8.7***	***10.5***	***-11.9***	***3.6***	***-11.1***	***-8.0***	***4.5***	***13.4***	***4.6***
Wild finfish		***6.2***	***2.1***	***-15.7***	***-7.8***	***7.5***	***7.9***	***-18.9***	***4.4***	***-13.9***	***-4.9***	***6.5***	***12.1***	***6.0***
Wild salmon		16.4	0.5	-22.8	-11.4	-4.1	15.8	-45.9	1.7	-0.6	-24.3	-27.8	12.8	9.2
Herring		-4.7	5.5	-17.4	-7.0	27.6	-14.7	20.5	26.9	-46.6	-1.8	-5.0	32.5	-20.8
Halibut		-48.4	43.8	47.7	10.6	40.1	25.6	-11.4	-6.1	13.9	26.8	61.6	-5.3	-3.1
Other		-9.9	-0.4	20.9	1.6	12.5	12.9	15.8	-16.2	14.3	12.2	31.1	8.0	25.3
Shellfish*		***-5.7***	***7.1***	***6.9***	***36.5***	***16.8***	***26.8***	***25.1***	***0.9***	***-1.3***	***-17.5***	***-2.6***	***18.6***	***-0.4***
Geoducks and clams		7.8	-37.5	-11.4	44.7	50.8	44.8	38.8	-20.0	9.6	-0.9	15.5	-6.5	-6.4
Shrimp and prawns		-42.4	55.5	28.0	-5.3	38.6	20.0	117.3	26.4	-1.2	-20.4	-24.8	97.0	-19.5
Crabs		-58.8	165.5	-12.1	69.9	123.3	11.8	-3.3	54.9	-14.0	-41.0	19.4	14.9	49.8
Other shellfish		8.8	30.3	17.3	36.7	-27.4	23.4	0.6	-19.2	-2.0	-17.0	-32.8	20.5	-13.9
Farmed finfish and shellfish*		***272.4***	***43.9***	***233.3***	***99.1***	***20.1***	***25.3***	***25.1***	***-14.6***	***38.6***	***15.4***	***6.1***	***-10.7***	***15.7***
Farmed salmon		931.3	38.5	263.5	103.4	19.8	24.9	25.3	-14.9	39.5	15.8	5.8	-10.9	16.0
Farmed shellfish		-52.0	101.7	11.2	-1.9	42.1	39.8	18.0	-4.2	-1.8	-26.0	46.9	5.8	2.6
Other fish and seafood products														
Total		***6.2***	***3.0***	***-9.4***	***3.4***	***10.2***	***12.7***	***-6.0***	***-0.3***	***-2.0***	***-1.9***	***5.0***	***6.0***	***7.5***
Other related products***		***26.4***	***-34.9***	***-12.1***	***19.2***	***-11.6***	***-12.5***	***23.0***	***-2.5***	***9.7***	***-5.5***	***-5.3***	***-1.3***	***12.8***
Total, fish and seafood products		***6.5***	***2.4***	***-9.4***	***3.5***	***9.9***	***12.4***	***-5.7***	***-0.3***	***-1.9***	***-2.0***	***4.9***	***5.9***	***7.6***
Fishing vessels & factory ships		45.4	55.2	-24.5	-39.0	65.2	-62.3	38.3	189.4	-60.0	822.1	-77.5	52.2	253.8
Pleasure boats and motors		-44.4	19.0	-11.6	-23.0	53.3	56.8	8.7	65.3	-11.5	81.2	21.3	-22.5	99.9
Fishing lines, nets, etc		-61.4	82.1	18.4	-25.2	51.8	0.0	74.8	1.9	35.8	-9.9	25.7	43.3	25.3

** 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*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fresh	***115.9***	***154.5***	***175.6***	***210.4***	***238.1***	***292.2***	***348.5***	***391.4***	***342.5***	***413.7***	***462.1***	***520.2***	***511.2***	***597.8***
Wild salmon	38.9	71.3	88.1	75.9	26.3	35.1	28.8	15.0	10.9	13.4	10.5	7.6	5.5	5.8
Farmed salmon	0.9	8.7	11.5	44.9	93.1	111.7	140.0	175.5	149.4	208.5	241.1	255.5	227.2	263.5
Halibut	13.9	4.6	10.9	17.5	20.9	31.5	39.2	33.8	32.4	36.9	45.4	70.6	64.5	63.7
Herring	0.5	0.4	1.5	0.1	1.3	2.3	1.6	1.1	0.6	2.5	2.5	3.2	4.1	0.0
Other finfish	31.2	39.4	34.5	36.3	39.6	43.2	44.5	52.5	47.2	54.8	76.8	94.7	122.0	165.5
Shellfish	30.5	30.0	29.2	35.7	56.9	68.5	94.4	113.7	102.0	97.6	85.8	88.5	87.8	99.2
Frozen	***258.5***	***255.9***	***243.8***	***210.0***	***212.8***	***226.3***	***295.3***	***200.0***	***172.9***	***212.0***	***153.9***	***149.2***	***166.0***	***167.4***
Salmon	203.5	212.4	196.4	150.1	157.2	168.1	213.5	99.1	70.1	99.2	54.3	36.3	42.9	45.1
Other finfish	47.0	35.0	39.5	53.0	47.6	49.6	66.6	76.2	61.6	72.7	74.1	91.2	82.8	91.9
Shellfish	8.0	8.5	7.8	6.9	8.0	8.5	15.2	24.7	41.2	40.1	25.5	21.7	40.3	30.4
Processed	***314.7***	***325.7***	***341.3***	***270.1***	***263.2***	***268.9***	***243.4***	***240.1***	***316.2***	***189.6***	***184.0***	***170.1***	***210.9***	***188.5***
Salmon	147.3	170.5	172.6	127.2	128.9	96.2	104.0	73.3	109.7	76.8	79.0	59.7	68.8	77.3
Herring	151.3	147.1	153.1	127.0	116.3	148.3	125.6	151.2	193.5	95.5	86.6	91.1	122.9	96.4
Other finfish	10.7	3.7	3.1	3.1	6.0	10.2	6.3	7.2	7.1	7.7	9.3	11.2	8.1	6.5
Shellfish	5.3	4.4	12.5	12.9	12.1	14.2	7.5	8.4	5.9	9.6	9.1	8.1	11.1	8.4
Other finfish & shellfish n.e.s.	***12.8***	***9.5***	***7.3***	***5.4***	***5.4***	***5.4***	***5.8***	***8.4***	***5.7***	***5.5***	***5.0***	***5.5***	***7.5***	***9.2***
Total	***701.8***	***745.6***	***768.0***	***696.0***	***719.5***	***792.8***	***893.1***	***839.9***	***837.3***	***820.8***	***805.1***	***845.0***	***895.6***	***962.9***
Other related products*	***9.7***	***12.3***	***8.0***	***7.0***	***8.4***	***7.4***	***6.5***	***8.0***	***7.8***	***8.5***	***8.1***	***7.6***	***7.5***	***8.5***
Total, fish and seafood products	***711.5***	***757.8***	***776.0***	***703.1***	***727.8***	***800.2***	***899.6***	***847.9***	***845.1***	***829.3***	***813.1***	***852.6***	***903.1***	***971.4***

** Includes fish meal and similar products*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fresh		***33.3***	***13.7***	***19.8***	***13.1***	***22.8***	***19.3***	***12.3***	***-12.5***	***20.8***	***11.7***	***12.6***	***-1.7***	***16.9***
Wild salmon		83.0	23.6	-13.8	-65.3	33.3	-17.9	-48.0	-27.4	23.5	-21.9	-27.6	-27.7	6.4
Farmed salmon		888.9	32.3	289.2	107.3	19.9	25.4	25.3	-14.9	39.6	15.7	6.0	-11.1	16.0
Halibut		-66.8	136.0	61.2	19.0	51.2	24.4	-13.9	-4.0	13.9	22.8	55.7	-8.6	-1.3
Herring		-20.1	247.1	-93.9	1369.1	79.5	-31.8	-31.9	-41.0	285.3	2.8	28.3	26.7	-100.0
Other finfish		26.2	-12.6	5.4	8.9	9.0	3.1	18.0	-10.1	16.1	40.2	23.4	28.8	35.6
Shellfish		-1.5	-2.7	22.2	59.6	20.4	37.8	20.4	-10.2	-4.3	-12.0	3.1	-0.9	13.0
Frozen		***-1.0***	***-4.7***	***-13.8***	***1.3***	***6.3***	***30.5***	***-32.3***	***-13.6***	***22.7***	***-27.4***	***-3.1***	***11.3***	***0.9***
Salmon		4.4	-7.5	-23.6	4.7	7.0	27.0	-53.6	-29.3	41.6	-45.3	-33.1	18.2	5.0
Other finfish		-25.5	13.0	34.1	-10.1	4.2	34.2	14.3	-19.1	18.1	1.8	23.1	-9.2	11.0
Shellfish		5.7	-7.8	-11.4	15.1	6.8	78.2	62.5	67.0	-2.7	-36.3	-15.2	85.9	-24.5
Processed		***3.5***	***4.8***	***-20.8***	***-2.6***	***2.1***	***-9.5***	***-1.4***	***31.7***	***-40.0***	***-3.0***	***-7.6***	***24.0***	***-10.6***
Salmon		15.8	1.2	-26.3	1.4	-25.3	8.1	-29.5	49.6	-30.0	2.9	-24.4	15.2	12.3
Herring		-2.7	4.1	-17.0	-8.4	27.5	-15.3	20.4	28.0	-50.7	-9.3	5.2	34.9	-21.6
Other finfish		-65.4	-17.0	0.9	92.7	69.5	-38.4	15.0	-1.5	8.2	21.8	19.5	-27.4	-19.9
Shellfish		-18.1	187.0	2.8	-6.4	17.6	-47.1	11.5	-29.4	63.2	-6.0	-10.7	36.7	-24.3
Other finfish & shellfish		***-25.3***	***-23.5***	***-25.9***	***-0.7***	***0.2***	***8.5***	***44.4***	***-32.0***	***-4.2***	***-8.9***	***10.7***	***36.0***	***22.4***
Total		***6.2***	***3.0***	***-9.4***	***3.4***	***10.2***	***12.7***	***-6.0***	***-0.3***	***-2.0***	***-1.9***	***5.0***	***6.0***	***7.5***
Other related products*		***26.4***	***-34.9***	***-12.1***	***19.2***	***-11.6***	***-12.5***	***23.0***	***-2.5***	***9.7***	***-5.5***	***-5.3***	***-1.3***	***12.8***
Total, fish and seafood products		***6.5***	***2.4***	***-9.4***	***3.5***	***9.9***	***12.4***	***-5.7***	***-0.3***	***-1.9***	***-2.0***	***4.9***	***5.9***	***7.6***

** Includes fish meal and similar products*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fresh	***12.6***	***13.6***	***13.0***	***14.1***	***14.7***	***18.6***	***27.4***	***64.0***	***42.9***	***42.8***	***50.6***	***72.7***	***72.4***	***70.6***
Salmon	4.8	5.7	4.0	4.0	4.3	6.3	5.8	24.8	11.3	7.6	10.4	12.4	12.5	9.6
Other finfish	3.8	3.9	5.1	5.7	5.3	4.8	5.8	19.6	6.6	5.9	12.1	12.7	15.0	17.7
Shellfish	3.9	4.0	3.8	4.4	5.1	7.5	15.8	19.6	25.1	29.3	28.1	47.6	45.0	43.3
Frozen	***44.0***	***48.0***	***46.4***	***49.6***	***54.2***	***84.5***	***113.2***	***119.4***	***153.1***	***121.5***	***140.1***	***150.7***	***140.1***	***141.4***
Salmon	0.1	0.3	0.5	0.4	0.4	0.6	0.7	1.0	0.4	0.2	0.3	0.4	0.2	0.3
Other finfish	21.3	24.7	22.5	25.0	29.2	45.6	67.0	66.4	72.7	56.1	58.2	53.9	43.4	45.2
Shellfish	22.5	23.0	23.4	24.3	24.6	38.3	45.4	52.0	80.0	65.2	81.6	96.4	96.4	96.0
Processed	***27.3***	***26.6***	***20.9***	***22.3***	***22.9***	***41.6***	***56.1***	***70.8***	***67.5***	***58.9***	***80.7***	***87.3***	***75.5***	***78.7***
Salmon	1.2	1.6	2.0	1.3	1.6	6.7	9.9	12.8	11.4	7.6	12.6	17.1	14.8	14.3
Other finfish	15.3	18.8	12.7	14.4	14.0	23.1	30.3	41.5	40.8	38.1	46.2	46.7	41.1	43.4
Shellfish	10.3	6.1	6.2	6.6	7.4	11.8	15.9	16.5	15.3	13.2	21.8	23.6	19.6	20.9
Other finfish & shellfish n.e.s.	***2.6***	***4.8***	***4.8***	***5.4***	***6.6***	***9.2***	***12.3***	***14.6***	***15.6***	***14.8***	***13.3***	***14.7***	***12.6***	***13.1***
Total	***86.5***	***93.0***	***85.0***	***91.5***	***98.4***	***153.9***	***209.0***	***268.8***	***279.1***	***238.1***	***284.7***	***325.4***	***300.6***	***303.7***
Other related products	***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***	***2.1***
Total	***86.5***	***93.0***	***85.0***	***91.5***	***98.4***	***153.9***	***209.0***	***268.8***	***279.1***	***238.1***	***284.7***	***325.4***	***300.6***	***305.8***

Imports have been adjusted to include only those consumed in the province
*** Includes fish meal and similar products*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fresh		***8.0***	***-4.6***	***8.8***	***4.0***	***26.8***	***47.1***	***134.0***	***-33.0***	***-0.3***	***18.2***	***43.6***	***-0.4***	***-2.5***
Salmon		18.7	-29.8	0.0	6.9	46.7	-8.4	329.7	-54.6	-32.5	36.8	19.4	0.3	-23.3
Other finfish		2.2	30.4	12.0	-7.5	-8.7	21.0	236.1	-66.3	-10.4	104.2	5.2	18.0	18.0
Shellfish		0.5	-2.8	13.8	16.3	46.9	110.7	24.4	27.9	16.9	-4.0	69.1	-5.5	-3.7
Frozen		***9.1***	***-3.4***	***7.0***	***9.2***	***56.0***	***33.9***	***5.5***	***28.2***	***-20.6***	***15.3***	***7.5***	***-7.0***	***1.0***
Salmon		124.0	67.7	-20.1	5.9	47.8	15.5	44.2	-59.4	-42.3	13.1	67.4	-55.3	41.6
Other finfish		15.9	-9.0	11.2	16.7	56.4	46.9	-0.9	9.4	-22.8	3.7	-7.5	-19.3	3.9
Shellfish		2.1	1.7	3.6	1.5	55.6	18.7	14.3	53.9	-18.5	25.2	18.1	0.1	-0.5
Processed		***-2.8***	***-21.2***	***6.7***	***2.7***	***81.6***	***34.8***	***26.1***	***-4.6***	***-12.8***	***37.0***	***8.2***	***-13.6***	***4.2***
Salmon		35.2	21.0	-34.5	21.1	331.0	47.4	29.4	-11.3	-33.6	67.3	35.2	-13.3	-3.1
Other finfish		22.9	-32.5	13.4	-3.1	65.3	31.4	36.7	-1.6	-6.6	21.2	1.0	-11.9	5.6
Shellfish		-40.5	2.3	6.0	11.8	59.8	34.1	3.8	-7.0	-13.6	65.2	7.9	-17.0	6.8
Other finfish & shellfish n.e.s.		***86.3***	***-1.7***	***13.5***	***21.4***	***39.9***	***34.5***	***18.2***	***6.9***	***-4.8***	***-10.6***	***10.6***	***-14.2***	***3.7***
Total		***7.5***	***-8.6***	***7.6***	***7.5***	***56.5***	***35.8***	***28.6***	***3.8***	***-14.7***	***19.6***	***14.3***	***-7.6***	***1.0***
Other related products														
Total		***7.5***	***-8.6***	***7.6***	***7.5***	***56.5***	***35.8***	***28.6***	***3.8***	***-14.7***	***19.6***	***14.3***	***-7.6***	***1.7***

Imports have been adjusted to include only those consumed in the province
*** Includes fish meal and similar products*

Source: BC STATS

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

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports	***711***	***758***	***776***	***703***	***728***	***800***	***900***	***848***	***845***	***829***	***813***	***853***	***903***	***971***
US	164	196	209	234	253	303	337	364	319	391	455	538	518	621
Japan	329	350	347	293	295	342	390	314	353	288	203	173	234	200
EU	146	143	166	117	106	69	82	58	78	55	62	46	48	55
Other	72	70	54	58	73	86	91	113	94	96	93	95	102	96
Imports	***-86***	***-93***	***-85***	***-91***	***-98***	***-153***	***-208***	***-268***	***-278***	***-237***	***-283***	***-323***	***-301***	***-306***
US	-40	-44	-42	-44	-44	-62	-80	-121	-102	-89	-105	-134	-125	-126
Japan	-5	-4	-2	-1	-1	-2	-3	-2	-3	-4	-3	-3	-2	-2
EU	-6	-5	-6	-6	-5	-5	-10	-13	-18	-15	-8	-7	-6	-5
Other	-34	-41	-35	-40	-48	-84	-116	-132	-154	-129	-167	-179	-168	-173
Balance	***626***	***665***	***691***	***612***	***630***	***647***	***691***	***580***	***567***	***593***	***530***	***529***	***602***	***666***
US	124	152	167	190	210	241	256	242	217	302	349	404	394	495
Japan	324	346	345	292	294	341	387	312	350	285	200	170	232	198
EU	140	138	160	112	101	64	73	45	60	40	54	39	43	49
Other	37	29	19	19	25	1	-25	-19	-60	-34	-73	-84	-66	-77

Country composition of EU has changed over time; data shown based on current definition

Source: BC STATS

Table 9a: BC's trade in fish and seafood products, by country
(annual % change)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports		***6.5***	***2.4***	***-9.4***	***3.5***	***9.9***	***12.4***	***-5.7***	***-0.3***	***-1.9***	***-2.0***	***4.9***	***5.9***	***7.6***
US		19.3	6.9	12.1	8.1	19.8	10.9	8.0	-12.1	22.3	16.4	18.3	-3.6	19.7
Japan		6.2	-0.7	-15.7	0.8	15.9	13.9	-19.5	12.6	-18.3	-29.5	-14.9	35.4	-14.8
EU		-2.5	16.0	-29.2	-9.6	-35.2	19.6	-29.4	34.8	-30.3	13.0	-24.9	4.3	13.8
Other		-2.9	-22.6	8.3	25.0	17.4	6.1	23.9	-16.4	1.7	-2.4	2.1	7.0	-5.9
Imports		***7.8***	***-8.6***	***7.5***	***7.7***	***56.5***	***35.8***	***28.5***	***3.8***	***-14.8***	***19.7***	***14.1***	***-7.0***	***1.7***
US		7.9	-2.6	3.7	-0.7	42.4	29.0	50.6	-15.7	-13.1	18.7	27.4	-7.0	0.7
Japan		-23.8	-47.6	-35.4	-24.4	53.6	79.4	-27.1	72.6	12.6	-21.9	7.0	-25.3	-27.9
EU		-26.2	25.0	3.6	-15.3	5.7	84.1	32.8	38.6	-17.3	-44.7	-15.6	-16.5	-3.8
Other		18.5	-15.2	15.2	21.3	74.6	37.1	14.1	17.2	-16.2	28.9	7.3	-6.3	3.1
Balance		***6.3***	***3.9***	***-11.5***	***2.9***	***2.7***	***6.9***	***-16.1***	***-2.2***	***4.5***	***-10.6***	***-0.1***	***13.8***	***10.5***
US		23.0	9.7	14.2	10.2	15.0	6.3	-5.4	-10.4	38.9	15.8	15.5	-2.5	25.8
Japan		6.7	-0.2	-15.5	0.9	15.8	13.6	-19.5	12.3	-18.6	-29.6	-15.2	36.6	-14.6
EU		-1.4	15.7	-30.3	-9.3	-37.2	14.3	-37.7	33.7	-34.1	34.3	-26.3	7.9	16.1
Other		-22.6	-33.0	-3.9	32.7	-94.4	-1871.2	-22.3	214.8	-44.3	118.4	13.9	-21.6	17.2

Country composition of EU has changed over time; data shown based on current definition

Source: BC STATS

Table 10: Establishments in BC, by industry (thousands)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fishing Industries	***718***	***709***	***753***	***732***	***728***	***760***	***718***	***687***	***580***	***565***	***636***	***611***
Commercial Fishing									454	398	513	502
Aquaculture									126	167	123	109
Services Incidental to Fishing	***39***	***41***	***51***	***53***	***53***	***60***	***77***	***94***	***83***	***78***	***na***	***na***
Fish Processing	***85***	***82***	***91***	***91***	***98***	***104***	***110***	***133***	***159***	***153***	***156***	***141***
Boat Retailing, Guide Outfitting and Marinas	427	455	479	469	483	489	484	500	502	496		
Accommodation	1,987	2,022	2,046	2,124	2,179	2,184	2,285	2,220	2,171	2,116	2,122	2,108
Food Services	5,857	6,316	6,783	7,342	7,862	8,268	8,582	8,959	9,370	9,336	9,525	9,450

Establishments with no employees are not included

Source: Statistics Canada Business Register

Supplementary notes on methodology

METHODOLOGY NOTES

	Fishing ratio	Sportfishing allocator *	Tourism ratio	1992 Tourism ratio	Revenue/ allocator **
Total, fishing sector					
Fishing	**1.0000**				fish landings
wild	1.0000				wild
salmon					
other					
aquaculture	1.0000				aquaculture
salmon					
other					
Fish processing	**1.0000**				d321247
Sport fishing	**1.0000**				
freshwater	1.0000				
saltwater	1.0000				
Transportation					
Air, including related services		as, transport	0.9950		persexp (pssgr/total)
air					
related services					
Rail & related services		% anglers	0.8600		persexp (pssgr/total)
Water & related services		as, transport	0.9220		persexp (pssgr/total)
Water					
Related services					
Public passenger transportation					
Urban		% anglers	0.0075		persexp
Interurban		% anglers	1.0000		persexp
School bus, charters, limousine services					total rev from pub
school bus					% of total
charters		% anglers	1.0000		% of total

limousine services	% anglers	1.0000		% of total
Other transportation				
Taxi	% anglers	0.2700		persexp
Other transport (caleche, limousine, tracked vehicle)	% anglers	1.0000		na (% of total)
Communication				
Telecommunication carriers (cable, telephone)				operating rev
Cable				operating rev
Telecom	% anglers	0.0210		operating rev
Postal & courier	% anglers	0.0500		persexp
Wholesale trade	% anglers	**0.0500**		d658279
Retail				d658191
Food stores	% anglers	0.1250		d657967+d65796 8
Pharmacies	% anglers	0.1000		d657969
	% anglers	0.1000		d657970
Men's clothing	% anglers	0.1000		d657971
Women's clothing	% anglers	0.1000		d657972
Clothing stores NEC	% anglers	0.1000		d657973
Fabric & yarn				
Household furniture & appliance stores				d657974
Household furniture				
Appliance, TV & stereo				
Household furnishings				d657975
Floor coverings & draperies				
Other household furnishings	% anglers	0.0500	0.0200	
Recreational & MV dealers				d657976
Automobile dealers				0.9040
Recreational vehicle dealers				0.0960
Motor homes, trailers	as, vehicles	0.9500		0.2500
Boats & accessories	0.5000	0.7000		0.2700
Motorcycles				
Snowmobiles	% anglers	0.9100	0.1000	0.0800

Other recreational vehicles			
Gasoline service stations	as, transport	0.1520	d657977
Automotive parts, etc.			d657978
Auto parts	as, transport	0.0200	0.4200
Motor vehicle repair			0.5800
Garages	as, transport	0.0200	0.2200
Other			0.7800
Other motor vehicle services (car washes, customizing, etc)			
General merchandise (dept, general stores, etc)	% anglers	0.1000	d657979
Other semi-durable goods			d657982
Book & stationery	% anglers	0.0500	0.2059
Florists, lawn & garden			
Hardware, paint, etc.			
Toy, hobby, Novelty & souvenir			0.2691
Toy & hobby	% anglers	0.0500	0.2600
Gift, novelty & souvenir			0.7400
Gift & novelty	% anglers	0.0500	0.6600
Souvenirs	% anglers	1.0000	0.3400
Other durable goods			d657983
Sporting goods & bicycle shops	as, fishing se	0.0500	0.4900
Musical instrument & record stores	% anglers	0.0500	0.1600
Jewellery stores & repair	% anglers	0.1000	0.2600
Camera & photographic supplies	% anglers	0.0500	0.0900
Other retail stores nec			d657984
Liquor, wine & beer stores	% anglers	0.0500	0.5600
Other retail			
Second-hand merchandise	% anglers	0.0500	0.0400
Art galleries & supplies	% anglers	0.3500	0.0200
Luggage & leather	% anglers	0.3500	0.0200
Other retail	% anglers	0.0500	0.3600
Vending machines	% anglers	0.0500	

Direct selling			
FIRE			
Owner occupied dwellings	% anglers	0.0170	persexp
Banks & trust cos	% anglers	0.0050	persexp
Credit Unions	% anglers	0.0050	persexp
Real estate operators			n/a
convention centres (incl in operators of bldgs)	% anglers	0.9000	0.0051
other buildings			0.9949
Insurance			persexp
special coverage	% anglers	1.0000	0.0203
other insurance			0.9797
Accommodation			
Hotels & motels	as, f&l		trr
Hotels +250 rooms		0.9000	trr
Hotels 151-249 rooms		0.9000	trr
Hotels 76-150 rooms		0.9000	trr
Hotels 1-75 rooms		0.9000	trr
Motels		0.9000	trr
Other			
Vacation rentals/campgrounds	as, f&l	1.0000	trr
Saltwater & freshwater fishing	1.0000	1.0000	trr
Miscellaneous (guide outfitters)	1.0000	1.0000	trr
Food & beverage			d656850/d655795
Food services			rctr
Licenced/full service	as, f&l	0.2900	rctr, d656781
Limited service/unlicenced & takeout	as, f&l	0.2400	rctr, d656795
Caterers	as, f&l	0.2500	rctr, d656809+d656823
Taverns, etc	as, f&l	0.2700	rctr, d656837
Amusement & recreation			

Motion picture, audio & video pdn & distn				operating revenue
Motion picture exhibition	% anglers	0.0500		operating revenue
Gambling operations	% anglers	0.0750		operating revenue
Theatres, sports & other recreation services				operating revenue
Theatrical and Other Staged Entertainment	% anglers	0.1500	0.2000	operating revenue
Commercial Spectator Sports				operating revenue
Professional Sports Clubs	% anglers	0.0500	0.1000	operating revenue
Horse Race Tracks	% anglers	0.1500		operating revenue
Sports and Recreation Clubs and Services	% anglers			operating revenue
Golf Courses	% anglers	0.1340	0.2000	operating revenue
Skiing Facilities	% anglers	0.7500		operating revenue
Boat Rentals and Marinas	0.5000	0.7000		operating revenue
Other Sports and Recreation Clubs	% anglers	0.0200		operating revenue
Other Amusement and Recreational Services				operating revenue
Bowling Centres and Billiard Parlours	% anglers	0.1500		operating revenue
Amusement Park, Carnival and Circus Operations	% anglers	0.1500		operating revenue
Coin-Operated Amusements	% anglers	0.1500		operating revenue
Other (roller skating, curling, botanical gardens, zoos, etc)				34053.0000
roller skating	% anglers	0.0200		0.0468
dance venues	% anglers	0.0200		0.0764
gardens & zoos	% anglers	0.7000		0.3402
other	% anglers	0.0200		0.5366
Leisure & personal services				
Laundries and Cleaners				operating revenue
Other leisure & personal services				operating revenue
Barber and Beauty Shops	% anglers	0.0200		operating revenue
Funeral Services				operating revenue

Private households			
Other Personal and Household Services			operating revenue
Membership organization industries			
Religious org			na
Other membership orgs			na
Regional assns (part of business assns)	% anglers	1.0000	na
Other service industries			
Mach, equipment rental and leasing services			operating revenue
Automobile, truck rental and leasing			operating revenue
leasing			0.7500
rental	% anglers	0.7500	persexp (0.25)
Photographers			operating revenue
Other repair services			operating revenue
Services to bldgs and dwellings			operating revenue
Travel services	% anglers	1.0000	operating revenue
Other services			na
parking lots	% anglers	0.0250	persexp
other services	% anglers	0.0250	na
Government services			
Federal			-
Provincial			-
Tourism	% anglers	1.0000	na
Parks	0.3000	0.2570	na
"Forests"	0.1000	1.0000	na
Local			
Education			
Post-secondary	% anglers	0.0050	0.2604
Libraries	% anglers	0.0200	0.0166
Museums & archives			
museums	% anglers	0.6000	0.0059
archives	% anglers	0.0500	0.0008

General hospitals	% anglers	0.0200	0.8505

* NOTES
as = Angler Survey
f&l = Food & Lodging
% anglers = proportion of tourists who are anglers

** NOTES
trr = Tourism Room Revenue
(BC STATS)