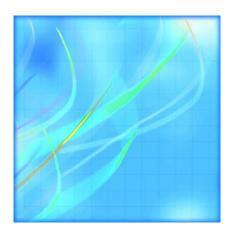
Catalogue no. 23-222-X

# **Aquaculture Statistics**

2011





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# **Aquaculture Statistics**

2011

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## Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

## **User information**

## **Symbols**

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the Statistics Act
- E use with caution
- F too unreliable to be published
- \* significantly different from reference category (p < 0.05)

## **Acknowledgements**

Special thanks are extended to Fisheries and Oceans Canada for its contribution to the realization of this publication.

# **Table of contents**

No	te to ı	users	4
Hig	ghligh	ts	5
Re	lated	products	8
Sta	ntistica	al tables	
1	Aqua	aculture, production and value, by province and Canada	10
	1-1	2007	10
	1-2	2008	11
	1-3	2009	12
	1-4	2010	13
	1-5	2011	14
2	Ехро	orts of selected Canadian aquaculture products, by country of destination	15
:	2-1	2007 and 2008	15
:	2-2	2009 and 2010	16
:	2-3	2011	17
3	Valu	e added account - Aquaculture industry, by province and Canada	18
;	3-1	2007	18
;	3-2	2008	19
;	3-3	2009	20
;	3-4	2010	21
;	3-5	2011	22
Da	ta qua	ality, concepts and methodology	
Со	ncepts	s and methods	23
Ch	arts		
1.		adian finfish production	5
2.		adian shellfish production	6
3.		adian exports of atlantic salmon and atlantic salmon fillets	6
4		centage of gross value-added compared to the value of production	7

## Note to users

Aquaculture is defined as the managed production of fish. In Canada, the industry is dominated by the production of finfish, primarily salmon off the coasts of British Columbia and New Brunswick. Production of shellfish is smaller with Prince Edward Island and British Columbia being the major producing provinces.

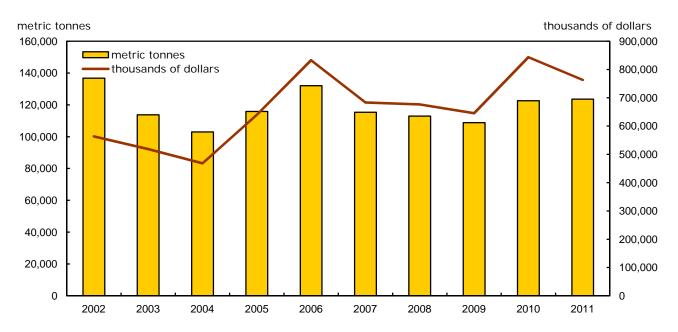
The annual publication, Aquaculture Statistics 23-222-X, presents an overview of this sector using data collected from the Survey of Aquaculture Industry. The survey is designed to provide economic variables that result in the aquaculture value added account, which measures the economic production (value added) of goods and services from aquaculture establishments.

The data presented are used by aquaculture industry analysts and producers as they make production and marketing decisions and by government analysts or special interest groups to monitor the industry or develop policies related to aquaculture in Canada. The data are also used in the Canadian System of National Accounts to develop provincial and national level accounts.

## **Highlights**

- Operating revenues amounted to \$838.4 million in 2011, a decrease of 15.2% from 2010.
- Finfish sales, which accounted for 89.8% of total operating revenue in 2011, decreased 16.9% to \$753.2 million. This decrease was mainly due to a drop in farmgate prices.
- The gross value added to the economy by the aquaculture industry dropped to \$300.6 million, down 29.9% from 2010.
- The value of total exports of farmed salmon including fillets decreased 7.9% in 2011, while the value of farmed mussel exports increased 7.8% compared to 2010.

Chart 1
Canadian finfish production



**Chart 2 Canadian shellfish production** 

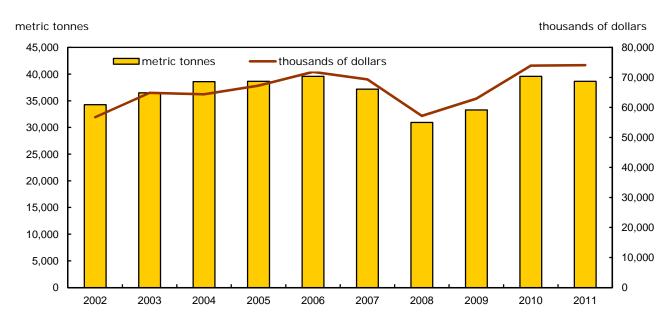


Chart 3
Canadian exports of atlantic salmon and atlantic salmon fillets

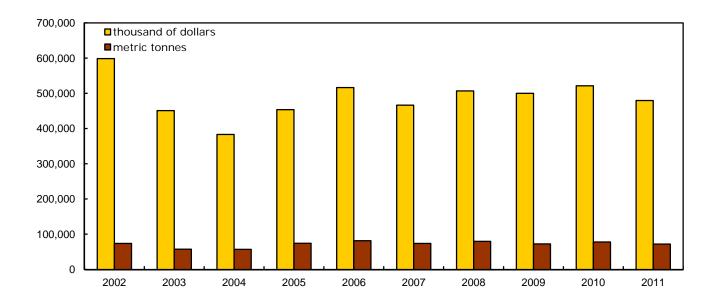
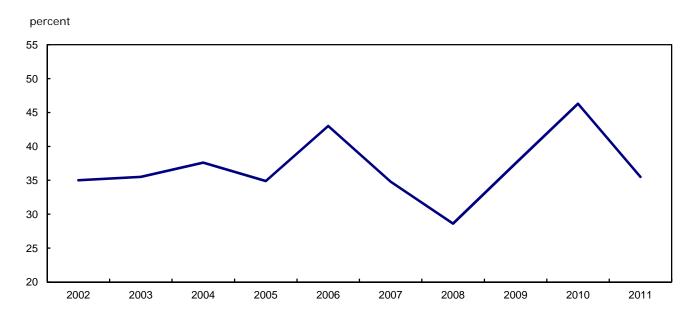


Chart 4 Percentage of gross value-added compared to the value of production



## **Related products**

## **Selected publications from Statistics Canada**

21-207-X	Statistics on income of farm families

## **Selected CANSIM tables from Statistics Canada**

003-0001	Aquaculture, production and value
003-0003	Aquaculture economic statistics, value added account

## **Selected surveys from Statistics Canada**

3479	Aquaculture, production and value, Annual
4701	Survey of the Aquaculture Industry

## Selected summary tables from Statistics Canada

• Canadian Statistics - Aquaculture industry, by selected provinces

# **Statistical tables**

Table 1-1 Aquaculture, production and value, by province and Canada — 2007

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada
						tonnes					
Production											
Salmon Trout Steelhead Other finfish	x 0 x x	x x 0 x	6,936 118 x x	24,575 300 0 x	0  0 	0 4,100 0 x	0 21 0 x	0 x 0 x	0 x 0 x	70,998 505 0 x	102,509 5,044 0 7,745
Total finfish	5,770	14	7,053	24,875	543	4,100	21	x	x	71,503	115,297
Clams Oysters Mussels Scallops Other shellfish	0 0 2,600 0 0	0 2,812 17,052 0 0	211 199 2,476 11 230	0 571 550 0 0	0 0 614 0 11	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1,658 7,483 543 157 0	1,869 11,065 23,835 168 241
Total shellfish	2,600	19,864	3,127	1,121	625	0	0	0	0	9,841	37,178
Total aquaculture	8,370	19,878	10,181	25,996	1,168	4,100	21	x	x	81,344	152,475
Re-stocking 1	-				585						585
Total aquaculture (including re-stocking) <sup>1</sup>	8,370	19,878	10,181	25,996	1,753	<b>4,100</b> ands of doll	<b>21</b>	x	x	81,344	153,060
Value					110000	indo or don	410				
Salmon Trout Steelhead Other finfish	x 0 x x	x x 0 x	39,209 1,084 x x	181,609 3,000 0 x	0  0 	0 17,000 0 x	0 87 0 x	0 x 0 x	0 x 0 x	384,099 2,399 0 x	604,917 23,570 0 54,877
Total finfish	35,200	1,700	40,293	184,609	3,173	17,000	87	x	x	386,498	683,364
Clams Oysters Mussels Scallops Other shellfish	0 0 4,800 0 0	0 6,700 21,800 0 0	408 821 3,461 197 7,808	0 600 600 0	0 0 798 0 64	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	9,305 8,605 2,481 877 0	9,713 16,726 33,940 1,074 7,872
Total shellfish	4,800	28,500	12,696	1,200	862	0	0	0	0	21,268	69,326
Total aquaculture	40,000	30,200	52,989	185,809	4,035	17,000	87	x	x	407,766	752,690
Re-stocking 1					8,880						8,880
Total aquaculture (including re-stocking) <sup>1</sup>	40,000	30,200	52,989	185,809	12,915	17,000	87	x	х	407,766	761,570

Table 1-2 Aquaculture, production and value, by province and Canada — 2008

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada
						tonnes					
Production											
Salmon Trout Steelhead Other finfish	  	  	4,810 x 0 x	26,000 500 0 0	0 379 0 79	0 4,335 0 0	0 x 0 x	0 x 0 0	0 x 0 x	73,265 635 0 437	104,075 7,932 0 868
Total finfish		14	5,045	26,500	459	4,335	x	x	x	74,337	112,890
Clams Oysters Mussels Scallops Other shellfish	   	0 2,565 16,920 0 0	329 151 1,677 9 126	0 598 500 0	0 0 453 0 65	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1,305 5,670 285 276 0	1,634 8,984 19,835 285 191
Total shellfish		19,484	2,292	1,098	518	0	0	0	0	7,536	30,928
Total aquaculture	11,545	19,498	7,337	27,598	977	4,335	x	x	x	81,873	155,362
Re-stocking <sup>2</sup>					868						868
Total aquaculture (including re-stocking) <sup>2</sup>	11,545	19,498	7,337	27,598	1,844	4,335	x	x	x	81,873	156,230
					thousa	nds of doll	ars				
Value											
Salmon Trout Steelhead Other finfish	  	 	23,175 x 0 x	192,140 5,000 0 0	0 2,040 0 533	0 17,620 0 0	0 x 0 x	0 x 0 0	0 x 0 x	409,267 2,958 0 4,634	624,582 41,358 0 8,874
Total finfish		1,624	25,200	197,140	2,573	17,620	x	x	x	416,859	676,438
Clams Oysters Mussels Scallops Other shellfish	  	0 5,654 22,381 0 0	1,424 652 2,430 160 6,326	0 628 545 0 0	0 0 589 0 171	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	7,211 6,542 1,281 1,167 0	8,635 13,476 27,227 1,327 6,497
Total shellfish		28,035	10,992	1,173	760	0	0	0	0	16,201	57,162
Total aquaculture	63,120	29,659	36,192	198,313	3,333	17,620	х	x	х	433,060	796,719
Re-stocking <sup>2</sup>					9,004						9,004
Total aquaculture (including re-stocking) <sup>2</sup>	63,120	29,659	36,192	198,313	12,337	17,620	x	x	x	433,060	805,724

<sup>1.</sup> Provinces with data not available are not included in the Canada totals.

Table 1-3 Aquaculture, production and value, by province and Canada — 2009

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada
						tonnes					
Production											
Salmon Trout Steelhead Other finfish	  	  	7,550 133 0 93	24,000 150 0 0	0 380 0 104	0 4,375 0 0	0 x 0 x	0 x 0 0	0 x 0 x	68,662 523 0 839	100,212 7,198 0 1,429
Total finfish		4	7,777	24,150	484	4,375	х	x	x	70,024	108,843
Clams Oysters Mussels Scallops Other shellfish	  	0 2,281 18,639 0 0	539 159 1,893 3 147	0 638 95 0	0 0 522 0 27	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1,359 5,735 312 385 530	1,898 8,813 21,461 388 704
Total shellfish		20,920	2,741	733	549	0	0	0	0	8,321	33,264
Total aquaculture	13,625	20,924	10,518	24,883	1,033	4,375	x	x	х	78,345	155,732
Re-stocking <sup>2</sup>					805						805
Total aquaculture (including re-stocking) <sup>2</sup>	13,625	20,924	10,518	24,883	1,838	4,375	x	x	x	78,345	156,537
					thousa	nds of doll	ars				
Value											
Salmon Trout Steelhead Other finfish	  	  	45,774 1,330 0 543	159,000 670 0 0	0 2,094 0 798	0 17,820 0 0	0 x 0 x	0 x 0 0	0 x 0 x	394,151 2,944 0 7,576	598,925 32,899 0 11,687
Total finfish		1,828	47,646	159,670	2,892	17,820	x	x	x	404,671	645,338
Clams Oysters Mussels Scallops Other shellfish	  	5,075 24,655 0	2,057 676 2,629 23 4,847	4,000 120 0	0 0 679 0 93	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	7,407 7,043 1,389 1,649 593	9,464 16,794 29,472 1,672 5,533
Total shellfish		29,730	10,231	4,120	772	0	0	0	0	18,081	62,935
Total aquaculture	92,100	31,558	57,878	163,790	3,665	17,820	х	x	x	422,752	800,373
Re-stocking <sup>2</sup>					8,623						8,623
Total aquaculture (including re-stocking) <sup>2</sup>	92,100	31,558	57,878	163,790	12,287	17,820	x	x	x	422,752	808,995

<sup>1.</sup> Provinces with data not available are not included in the Canada totals.

Table 1-4 Aquaculture, production and value, by province and Canada — 2010

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada <sup>2</sup>
						tonnes					
Production											
Salmon Trout Steelhead Other finfish	  	  	5,088 91 0 62	25,625 150 0 0	0 337 0 71	4,060 0 0	0 x 0 x	0 x 0 0	0 x 0 x	70,831 600 0 884	101,544 6,844 0 1,291
Total finfish	12,899		5,241	25,775	408	4,060	x	x	x	72,315	122,577
Clams Oysters Mussels Scallops Other shellfish	0 0 2,461 0 0	0 2,478 20,112 0 0	438 205 2,121 2 110	0 881 95 0	0 0 523 0 23	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1,485 7,550 364 695 26	1,923 11,113 25,675 697 160
Total shellfish	2,461	22,589	2,877	976	546	0	0	0	0	10,120	39,569
Total aquaculture	15,360	22,589	8,118	26,751	954	4,060	x	x	x	82,435	162,146
Re-stocking <sup>2</sup>					874						874
Total aquaculture (including re-stocking) <sup>2</sup>	15,360	22,589	8,118	26,751	1,828	4,060	x	x	x	82,435	163,020
					thousa	nds of doll	ars				
Value											
Salmon Trout Steelhead Other finfish	  	  	32,040 891 0 375	162,000 700 0 0	0 1,813 0 482	0 17,100 0 0	0 x 0 x	0 x 0 0	0 x 0 x	499,608 4,852 0 10,800	693,648 33,251 0 13,795
Total finfish	100,301	2,200	33,307	162,700	2,295	17,100	x	x	x	515,260	843,195
Clams Oysters Mussels Scallops Other shellfish	6,009 	5,844 26,603 0	190 720 2,548 15 4,521	0 3,355 100 0	0 0 680 0 90	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	8,159 8,957 1,809 2,904 1,401	8,349 18,876 37,748 2,919 6,012
Total shellfish	6,009	32,447	7,994	3,455	769	0	0	0	0	23,230	73,905
Total aquaculture	106,310	34,647	41,301	166,155	3,065	17,100	x	x	x	538,490	917,100
Re-stocking <sup>2</sup>	ě				8,852						8,852
Total aquaculture (including re-stocking) <sup>2</sup>	106,310	34,647	41,301	166,155	11,917	17,100	x	x	x	538,490	925,952

<sup>1.</sup> Provinces with data not available are not included in the Canada totals.

Table 1-5 Aquaculture, production and value, by province and Canada — 2011

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada
						tonnes					
Production											
Salmon Trout Steelhead Other finfish	  	  	5,624 124 0 69	21,560 80 0 0	0 349 0 71	3,738 0 0	0 x 0 x	0 x 0 0	0 x 0 x	74,880 630 0 360	102,064 6,511 0 728
Total finfish	14,264		5,817	21,640	420	3,738	х	x	x	75,870	123,567
Clams Oysters Mussels Scallops Other shellfish	0 0 3,000 0 0	0 2,525 20,494 0 0	341 246 1,374 1 237	0 609 25 0	0 0 316 0 78	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1,300 7,500 300 300 0	1,641 10,880 25,509 301 315
Total shellfish	3,000	23,018	2,199	634	394	0	0	0	0	9,400	38,646
Total aquaculture	17,264	23,018	8,017	22,274	814	3,738	x	x	x	85,270	162,213
Re-stocking <sup>2</sup>					823						823
Total aquaculture (including re-stocking) <sup>2</sup>	17,264	23,018	8,017	22,274	1,637	3,738	x	x	x	85,270	163,036
					thousa	nds of doll	ars				
Value											
Salmon Trout Steelhead Other finfish	  	  	31,234 1,796 0 367	140,241 400 0 0	0 1,875 0 469	0 17,700 0 0	0 x 0 x	0 x 0 0	0 x 0 x	435,300 5,700 0 4,400	606,775 35,300 0 6,887
Total finfish	111,829	2,242	33,397	140,641	2,344	17,700	x	x	x	445,400	763,033
Clams Oysters Mussels Scallops Other shellfish	8,221  	0 5,955 27,108 0 0	1,396 894 1,584 11 6,005	0 2,645 28 0 0	0 0 411 0 249	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	7,200 9,200 1,500 1,700	8,596 18,694 38,853 1,711 6,254
Total shellfish	8,221	33,063	9,890	2,673	661	0	0	0	0	19,600	74,108
Total aquaculture	120,050	35,305	43,287	143,314	3,005	17,700	x	x	x	465,000	837,141
Re-stocking <sup>2</sup>					8,456						8,456
Total aquaculture (including re-stocking) <sup>2</sup>	120,050	35,305	43,287	143,314	11,461	17,700	x	x	x	465,000	845,598

<sup>1.</sup> Provinces with data not available are not included in the Canada totals.

Table 2-1 Exports of selected Canadian aquaculture products, by country of destination — 2007 and 2008

Destination		2007			2008					
	Mussels	Other Salmon <sup>1</sup>	Atlantic Salmon <sup>2</sup>	Atlantic Salmon fillets	Mussels	Other Salmon <sup>1</sup>	Atlantic Salmon <sup>2</sup>	Atlantic Salmon fillets		
				tonnes	5					
United States California Maine Massachusetts	<b>9,868</b> 177 2,679 4,719	<b>2,714</b> 1,103 0 223	<b>67,628</b> 23,908 813 8,965	<b>3,906</b> 408 104 596	<b>9,620</b> 47 2,286 5,432	<b>1,532</b> 359 0 146	<b>70,481</b> 20,296 808 9,219	<b>5,399</b> 242 154 1,423		
New York Washington Other	913 129 1,252	175 1,076 138	8,919 16,793 8,229	342 549 1,908	916 35 904	125 763 139	10,743 18,508 10,906	446 651 2,483		
France Japan Taiwan Other	0 0 0 209	16 469 3 6	11 1,162 680 265	3 155 37 74	0 0 0 117	22 356 0 0	46 2,229 871 586	3 172 110 20		
Total	10,077	3,208	69,746	4,175	9,738	1,911	74,213	5,704		
	thousands of dollars									
United States California Maine Massachusetts New York Washington Other	<b>25,418</b> 574 6,541 12,484 2,302 325 3,192	19,792 7,794 0 2,159 1,577 7,231 1,030	<b>411,360</b> 146,732 4,791 53,526 58,156 97,738 50,418	<b>42,526</b> 3,544 1,222 6,883 3,736 4,860 22,282	26,762 181 5,378 16,117 2,624 112 2,350	14,806 3,737 0 1,854 1,370 6,689 1,157	414,921 120,419 4,461 50,770 62,136 112,272 64,864	65,307 2,462 1,964 17,537 5,523 6,429 31,392		
France Japan Taiwan Other	0 0 0 832	121 7,188 17 28	72 6,712 3,117 1,394	33 695 163 328	0 2 0 527	161 4,861 4 0	223 16,264 4,929 3,615	27 854 608 116		
Total	26,250	27,147	422,656	43,745	27,291	19,832	439,953	66,912		

Includes Coho and Spring (Chinook).
 Includes fresh, chilled and frozen.

Table 2-2 Exports of selected Canadian aquaculture products, by country of destination — 2009 and 2010

Destination		2009			2010					
	Mussels	Other Salmon <sup>1</sup>	Atlantic Salmon <sup>2</sup>	Atlantic Salmon fillets	Mussels	Other Salmon <sup>1</sup>	Atlantic Salmon <sup>2</sup>	Atlantic Salmon fillets		
				tonnes	i					
United States	10,571	1,513	66,615	4,563	12,689	1,697	70,036	6,357		
California	23	646	25,781	191	52	846	24,694	122		
Maine	2,331	0	2,944	225	2,661	0	4,837	199		
Massachusetts	6,332	105	8,244	885	7,863	169	8,662	1,180		
New York	1,046	224	9,103	683	947	147	11,808	823		
Washington	85	425	10,927	272	50	433	10,506	668		
Other	754	112	9,615	2,308	1,116	102	9,529	3,365		
France	0	20	8	0	0	0	1	1		
Japan	0	290	578	44	0	213	437	397		
Taiwan	0	0	253	67	0	1	166	70		
Other	38	2	237	1	30	4	512	2		
Total	10,608	1,826	67,691	4,675	12,719	1,915	71,152	6,827		
				thousands of	dollars					
United States	29,883	12,495	430,723	60,541	33,142	14,651	432,283	78,407		
California	60	5,206	168,235	1,953	274	6,951	152,917	1,345		
Maine	5,727	0	17,892	3,206	5,979	0	26,549	2,508		
Massachusetts	18,957	1,259	52,951	11,663	21,562	1,897	51,283	14,580		
New York	2,866	1,782	58,651	9,187	2,392	1,276	69,758	10,304		
Washington	282	3,336	69,028	2,810	158	3,580	71,557	6,384		
Other	1,991	912	63,967	31,723	2,777	947	60,219	43,286		
France	0	150	71	5	0	1	10	17		
Japan	0	4,465	4,159	729	0	3,115	2,708	2,263		
Taiwan	0	2	1,722	423	0	6	1,222	410		
Other	217	23	1,383	6	152	32	3,825	16		
Total	30,101	17,135	438,059	61,704	33,294	17,805	440,048	81,113		

Includes Coho and Spring (Chinook).
 Includes fresh, chilled and frozen.

Table 2-3 Exports of selected Canadian aquaculture products, by country of destination — 2011

Destination		2011						
	Mussels	Other <sup>1</sup> Salmon	Atlantic <sup>2</sup> Salmon	Atlantic Salmon fillets				
		tonnes						
United States California Maine Massachusetts New York Washington Other	13,741 41 2,741 8,503 943 39 1,474	1,392 593 0 301 149 225 124	66,141 26,649 3,695 7,349 10,597 9,562 8,289	<b>4,379</b> 205 171 578 308 401 2,716				
France Japan Taiwan Other	0 0 0 73	0 445 69 43	9 187 8 389	5 501 122 186				
Total	13,814	1,949	66,734	5,193				
	thousands of dollars							
United States California Maine Massachusetts New York Washington Other	<b>35,573</b> 181 5,872 23,241 2,406 167 3,706	13,159 5,619 0 3,218 1,331 1,898 1,093	<b>414,411</b> 158,025 22,359 44,743 71,933 61,359 55,992	<b>55,820</b> 2,199 2,262 7,691 3,500 3,505 36,663				
France Japan Taiwan Other	0 0 1 321	0 5,886 559 388	93 1,439 47 2,693	61 2,831 760 1,233				
Total	35,895	19,992	418,683	60,705				

Includes Coho and Spring (Chinook).
 Includes fresh, chilled and frozen.

Table 3-1
Value added account - Aquaculture industry, by province and Canada — 2007

	Newfoundland and	Prince Edward	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
	Labrador	Island						
	-			thousands of	dollars			
Sources of output								
Sales of aqua products and services	33,840	28,466	41,200	134,520	13,600	17,050	528,950	797,626
Whole fish dressed, fresh or chilled		••	15,000	114,000	1,400		440,000	570,400
Fish eggs and live fish for grow-out Whole fish live except for grow-out			10,000 100	3,000	8,000		x 0	23,700 11,100
Whole fish, dressed and frozen	••	··	500	3,000 X	0,000		X	7,320
Fish fillets, fresh or frozen			x	X	X		х	67,420
Fish, dried, smoked or in brine		••	Х	0	Х	••	Х	1,530
Total finfish	28,400	Х	31,000	130,020	12,350	Х	508,100	727,870
Total molluscs	x	27,300	Х	3,400	1,000	0	19,300	65,640
Other goods and services, not elsewhere specified	х	x	х	1,100	250	х	1,550	4,116
Subsidies	x	Х	х	x	400	х	x	2,510
Other operating revenue	x	х	х	х	300	х	х	9,925
Total operating revenue	34,000	28,791	41,740	142,320	14,300	17,690	531,220	810,061
Change in inventory value, goods	10,437	4,320	6,200	5,000	-570	-715	10,700	35,372
Gross output	44,437	33,111	47,940	147,320	13,730	16,975	541,920	845,433
Product inputs								
Product expenses	31,495	8,105	16,450	130,200	5,815	8,680	382,160	582,905
Feed	12,900	Х	8,500	60,000	_X	5,500	158,000	246,760
Therapeutants	120	х	Х	4,000	55	65	7,700	12,355
Purchases, eggs and fish for grow-out Purchases, fish for processing and resale	10,000 x	2,800 60	3,000	20,000 11,000	360 x	1,000	13,400	50,560 86,560
Insurance premiums	1,000	320	x 400	5,000	270	x 120	7,800	14,910
Energy (electricity, fuel, et cetera)	1,000	700	950	6,000	1,300	800	9,600	20,350
Goods transportation and storage Processing services	2,200 x	490 x	400 x	3,000 3,000	180 40	100 x	37,000 x	43,370 30,390
Rental and leasing expenses	430	450	70	1,600	60	200	3,500	6,310
Maintenance and repairs, buildings	120	300	280	2,000	210	50	1,200	4,160
Maintenance and repairs, machinery	1,500	800	650	8,500	500	100	22,000	34,050
Professional services Other operating expenses, not	385	310	400	1,200	275	310	5,800	8,680
elsewhere specified	1,340	1,600	550	4,900	615	285	15,160	24,450
Change in inventory value, raw materials	726	-5	2,400	0	-500	-15	-200	2,406
Total of product inputs	30,769	8,110	14,050	130,200	6,315	8,695	382,360	580,499
Gross value added (factor cost)	13,668	25,001	33,890	17,120	7,415	8,280	159,560	264,934
Selected primary inputs								
Salaries and wages	5,000	10,200	6,000	22,000	2,100	3,000	53,000	101,300
Employer portion of employee benefits	550	800	600	2,500	300	300	10,000	15,050
Depreciation	1,700	2,400	1,500	7,500	1,200	720	31,500	46,520

<sup>1.</sup> Canada total excludes Manitoba, Saskatchewan and Alberta. **Note(s):** Data and account structure are subject to revision.

Table 3-2 Value added account - Aquaculture industry, by province and Canada — 2008

	Newfoundland and	Prince Edward	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
	Labrador	Island						
				thousands of	dollars			
Sources of output								
Sales of aqua products and services	46,415	27,997	43,405	108,905	13,235	17,520	479,920	737,397
Whole fish dressed, fresh or chilled Fish eggs and live fish for grow-out Whole fish live except for grow-out Whole fish, dressed and frozen	  	  	4,200 x 10	94,200 10,500 x 0	x x 7,750 0	3,550 2,740 10,800 0	441,700 x 0 x	571,450 21,740 20,395 x
Fish fillets, fresh or frozen Fish, dried, smoked or in brine			75 20	x 0	X X	x x	X X	2,985 x
Total finfish	 X	 X	35,250	106,850	12,100	17,500	449,120	664,320
Total molluscs	3,700	26,700	8,000	2,000	900	0	15,900	57,200
Other goods and services, not elsewhere specified	X	x	155	55	235	20	14,900	15,877
Subsidies	x	0	х	65	370	140	х	х
Other operating revenue	x	140	х	2,325	495	270	х	х
Total operating revenue	54,565	28,137	44,495	111,295	14,100	17,930	481,575	752,097
Change in inventory value, goods	12,000	-1,270	2,600	20,000	-1,380	-1,170	-19,200	11,580
Gross output	66,565	26,867	47,095	131,295	12,720	16,760	462,375	763,677
Product inputs								
Product expenses	41,890	8,355	30,330	97,885	6,315	7,690	336,350	528,815
Feed Therapeutants	X X	x x	x 1,100	44,700 3,700	2,160 60	5,000 70	158,000 5,000	246,435 10,535
•					340	840		
Purchases, eggs and fish for grow-out Purchases, fish for processing and resale	1,500	2,500 x	x x	16,500 1,000	90	640 X	7,600	70,580 10,400
Insurance premiums Energy (electricity, fuel, et cetera) Goods transportation and storage Processing services Rental and leasing expenses	1,400 900 x x	300 1,100 200 100 350	1,000 1,500 250 400 x	3,100 5,000 1,900 2,700 800	310 1,210 210 30 65	810 90 35 200	6,600 9,700 37,700 28,200 3,840	12,900 20,720 41,250 31,815 5,915
Maintenance and repairs, buildings Maintenance and repairs, machinery Professional services Other operating expenses, not	50 x 275	315 1,600 205	180 x 1,505	8,900 x	190 560 195	30 80 x	x 19,100 5,260	2,015 36,515 12,735
elsewhere specified	1,765	1,545	1,510	4,145	895	240	16,900	27,000
Change in inventory value, raw materials	2,000	0	-5,000	-8	500	140	-2,200	-4,568
Total of product inputs	39,890	8,355	35,330	97,893	5,815	7,550	338,550	533,383
Gross value added (factor cost)	26,675	18,512	11,765	33,402	6,905	9,210	123,825	230,294
Selected primary inputs								
Salaries and wages Employer portion of employee benefits Depreciation Interest paid	8,200 900 2,900 x	8,700 775 2,000 860	5,200 625 2,500 x	20,000 2,000 6,700 2,400	2,200 320 1,600 345	2,800 280 600 250	58,900 10,100 30,200 7,000	106,000 15,000 46,500 13,865

<sup>1.</sup> Canada total excludes Manitoba, Saskatchewan and Alberta. **Note(s):** Data and account structure are subject to revision.

Table 3-3 Value added account - Aquaculture industry, by province and Canada — 2009

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
	Labrador	Island		thousands of	dollars			
Sources of output	-			tilousarius oi	dollars			
Sources of output	69,800	28,540	49,810	198,910	10,829	18,150	492,600	868,639
Sales of aqua products and services	•	•	-	•	- -	•	-	-
Whole fish dressed, fresh or chilled Fish eggs and live fish for grow-out	65,400 x	0 0	7,900	157,720 x	2,174 3,853	3,370	412,000 7,000	675,294 43,723
Whole fish live except for grow-out	0	0	700	315	2,839	10,850	0	14,704
Whole fish, dressed and frozen Fish fillets, fresh or frozen	0 x	0 0	0 x	0 x	X X	0 x	X X	X X
Fish, dried, smoked or in brine	Ô	ő	10	Ô	x	Ô	x	220
Total finfish	66,200	х	43,405	192,650	9,779	х	466,600	798,034
Total molluscs	x	26,300	6,330	х	800	0	12,200	53,480
Other goods and services, not elsewhere specified	х	x	75	х	250	х	13,800	17,125
Subsidies	x	50	х	x	170	х	х	х
Other operating revenue	x	100	х	х	570	х	х	х
Total operating revenue	72,275	28,690	52,545	207,290	11,569	19,570	495,255	887,194
Change in inventory value, goods	9,000	1,100	2,010	15,100	500	1,800	-32,015	-2,505
Gross output	81,275	29,790	54,555	222,390	12,069	21,370	463,240	884,689
Product inputs								
Product expenses	66,720	8,200	29,325	149,700	6,165	9,320	320,800	590,230
Feed	38,500	X	14,300	74,600	х	5,500	159,600	294,840
Therapeutants	х	0	1,200	6,100	х	150	9,600	17,640
Purchases, eggs and fish for grow-out Purchases, fish for processing and	11,650	3,400	6,700	36,800	290	1,500	5,500	65,840
resale Insurance premiums	0 x	x 200	110 810	250 x	x 220	60 100	500 6,800	1,000 14,010
Energy (electricity, fuel, et cetera)	1,550	1,000	1,100	4,600	1,250	820	9,800	20,120
Goods transportation and storage	1,700	600	440 440	2,900	220	300	35,000	41,160
Processing services Rental and leasing expenses	X X	120 x	580	1,000	75 x	5 200	31,700 4,600	35,100 7,930
Maintenance and repairs, buildings	450	320	170	300	230	100	1,800	3,370
Maintenance and repairs, machinery	_ X	1,000	1,920	X	365	100	25,600	43,685
Professional services Other operating expenses, not	570	245	130	2,160	145	145	7,400	10,795
elsewhere specified	2,330	1,065	1,425	5,810	870	340	22,900	34,740
Change in inventory value, raw materials	-1,000	250	0	200	-500	200	10,000	9,150
Total of product inputs	67,720	7,950	29,325	149,500	6,665	9,120	310,800	581,080
Gross value added (factor cost)	13,555	21,840	25,230	72,890	5,404	12,250	152,440	303,609
Selected primary inputs								
Salaries and wages	8,400	7,800	5,500	21,000	2,300	2,850	66,500	114,350
Employer portion of employee benefits Depreciation	1,100	675 1,500	700	2,200 11,700	330 1,300	285 700	11,500 33,000	16,790 54,500
Interest paid	X X	500	X X	6,900	380	200	6,200	18,930

<sup>1.</sup> Canada total excludes Manitoba, Saskatchewan and Alberta. **Note(s):** Data and account structure are subject to revision.

Table 3-4 Value added account - Aquaculture industry, by province and Canada — 2010

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
				thousands of	dollars			
Sources of output								
Sales of aqua products and services	x	29,790	39,155	233,175	x	18,295	534,300	973,725
Whole fish dressed, fresh or chilled Fish eggs and live fish for grow-out Whole fish live except for grow-out Whole fish, dressed and frozen Fish fillets, fresh or frozen Fish, dried, smoked or in brine	x 0 0 0 0	0 x x 0 0	20,345 x 15 0 x 0	198,800 x 0 0 x 0	x 2,360 5,155 5 x	15,240 1,185 1,700 0 x 55	446,925 x x x x x	786,760 38,470 x x 67,970 335
Total finfish	x	х	31,175	227,290	10,270	х	514,925	906,830
Total molluscs	x	27,840	7,980	X	X	0	15,785	58,420
Other goods and services, not elsewhere specified	x	x	0	х	x	x	3,590	8,475
Subsidies	x	0	х	х	х	x	х	1,770
Other operating revenue	x	905	х	х	х	х	х	13,540
Total operating revenue	x	30,695	41,240	242,010	x	18,925	536,250	989,035
Change in inventory value, goods	4,675	-1,015	1,260	21,040	-330	-1,000	15,015	39,645
Gross output	x	29,680	42,500	263,050	x	17,925	551,265	1,028,680
Product inputs								
Product expenses	x	7,060	21,690	139,475	x	10,465	338,900	596,885
Feed Therapeutants	42,595 1,135	x x	9,800 670	82,140 12,520	x x	6,900 220	164,500 11,100	308,020 25,790
Purchases, eggs and fish for grow-out Purchases, fish for processing and	12,870	2,120	х	18,140	x	800	5,115	45,435
resale Insurance premiums Energy (electricity, fuel, et cetera) Goods transportation and storage Processing services Rental and leasing expenses	x x x 1,780 2,765 x	0 580 795 x 165 120	x 750 930 x x 480	x 6,200 4,880 3,155 x 950	x x x x x	x 135 620 x x x 320	7,270 10,050 34,270 37,730 5,140	900 17,665 20,780 40,315 41,565 8,415
Maintenance and repairs, buildings Maintenance and repairs, machinery Professional services Other operating expenses, not elsewhere specified	530 x 940	370 1,100 145 1,130	340 325 210 935	515 4,300 935 5,315	x x 125 x	30 110 160 860	x 26,530 7,415 28,030	3,100 35,095 9,930 39,875
Change in inventory value, raw materials	-110	315	5	-95	-810	-580	-1,480	-2,755
Total of product inputs	x	6,745	21,685	139,570	x	11,045	340,380	599,640
Gross value added (factor cost)	37,640	22,935	20,815	123,480	6,405	6,880	210,885	429,040
Selected primary inputs								
Salaries and wages Employer portion of employee benefits Depreciation Interest paid	10,790 1,545 x x	6,745 675 2,090 430	4,975 700 2,185 665	22,595 2,725 27,025 7,185	2,125 280 x x	2,100 330 650 375	60,010 10,685 30,645 3,560	109,340 16,940 74,300 16,870

<sup>1.</sup> Canada total excludes Manitoba, Saskatchewan and Alberta. **Note(s):** Data and account structure are subject to revision.

Table 3-5 Value added account - Aquaculture industry, by province and Canada — 2011

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
				thousands of	dollars			
Sources of output								
Sales of aqua products and services	x	x	44,570	195,495	10,450	17,250	472,190	823,705
Whole fish dressed, fresh or chilled Fish eggs and live fish for grow-out Whole fish live except for grow-out Whole fish, dressed and frozen Fish fillets, fresh or frozen Fish, dried, smoked or in brine	x x 0 0 0	0 x 0 0 0	x x x 0 0	172,030 2,330 X 0 X	1,290 1,510 5,125 0 x x	6,730 9,340 670 0 x x	390,910 x x 0 x	637,620 48,925 8,230 0 58,115 x
Total finfish	x	х	36,125	189,240	8,805	x	451,135	753,155
Total molluscs	3,030	28,730	х	х	695	0	15,510	59,030
Other goods and services, not elsewhere specified	х	х	x	х	х	х	5,545	11,520
Subsidies	x	х	х	65	170	х	815	1,865
Other operating revenue	x	х	х	6,455	710	х	2,610	12,835
Total operating revenue	x	x	46,990	202,015	11,330	17,885	475,615	838,405
Change in inventory value, goods	х	х	-5,695	2,055	-490	795	-2,200	58,185
Gross output	117,260	31,030	41,295	204,070	10,840	18,680	473,415	896,590
Product inputs								
Product expenses	x	8,330	x	x	5,390	9,640	324,630	600,725
Feed Therapeutants	43,330 1,550	x 80	13,700 920	67,345 5,735	x 80	6,195 130	166,555 9,180	298,980 17,675
Purchases, eggs and fish for grow-out Purchases, fish for processing and	19,065	2,310 0	Х	х	250	965	3,825	46,630
resale Insurance premiums Energy (electricity, fuel, et cetera) Goods transportation and storage Processing services Rental and leasing expenses	x x 1,985 1,770 3,030 x	370 960 510 x 195	x 780 1,180 100 x 455	x x 3,895 2,690 x x	x 300 970 65 x 80	x 125 545 205 x 245	7,315 10,100 28,325 32,265 5,450	34,515 15,365 19,635 33,665 35,690 9,295
Maintenance and repairs, buildings Maintenance and repairs, machinery Professional services Other operating expenses, not	x 300 1,135	250 1,515 535	555 920 405	7,020 2,390	200 435 280	40 150 260	x 21,945 7,840	3,995 32,285 12,845
elsewhere specified	1,830	1,140	1,025	4,470	950	710	30,025	40,150
Change in inventory value, raw materials	x	105	х	Х	1,070	25	1,295	4,695
Total of product inputs	77,425	8,225	27,780	145,330	4,320	9,615	323,335	596,030
Gross value added (factor cost)	39,835	22,805	13,515	58,740	6,520	9,065	150,080	300,560
Selected primary inputs								
Salaries and wages Employer portion of employee benefits Depreciation Interest paid	8,470 1,210 x x	6,960 730 2,320 655	5,525 705 6,340 465	19,400 2,200 29,670 4,525	2,205 195 x x	2,170 235 x x	61,545 10,500 27,085 3,960	106,275 15,775 75,140 12,625

<sup>1.</sup> Canada total excludes Manitoba, Saskatchewan and Alberta. **Note(s):** Data and account structure are subject to revision.

## **Concepts and methods**

## Production and value of aquaculture

Statistics Canada defines aquaculture as an industry comprising establishments primarily engaged in farm-raising finfish, shellfish or any other kind of aquatic animal. The aquaculture production and value data, produced by species and province, represent the quantity of production and the farm-gate value of that production.

The series begins in 1991. Until 1994, these data were collected and released by Fisheries and Oceans Canada. Statistics Canada first published the time series in 1996.

The administrative data are provided annually from each of the provincial ministries responsible for aquaculture. Producers must report their production and value as part of their provincial licensing agreements. The data are supplemented through consultation with industry specialists and with data provided by Fisheries and Oceans Canada.

Generally, finfish production is reported as gutted head-on and the value is based on a farm-gate price. Shellfish is reported as whole, again with a farm-gate value. Beginning in 1996, additional data for Quebec represents the sale of fish to outfitters offering lodging and services for hunting, fishing and trapping.

## **Exports of selected aquaculture products**

Canadian import and export statistics are derived by the International Trade Division of Statistics Canada from administrative records collected by the Canada Customs and Revenue Agency. The one exception to this process is Canadian exports to the United States and the imports from the United States into Canada. As of January 1, 1990, Canada and the United States have been using the other's import data to replace its own export data. Export data are presented by province of origin, which represents the province in which the product was grown or manufactured.

Exports for four categories of aquaculture products have been selected. All of these categories define the products as fresh, chilled or frozen and are based on the harmonised system of coding.

Mussels - code 3073110

Other salmon - includes coho and spring (chinook) salmon, codes 3021221, 3021231

Atlantic salmon - codes 3021211, 3021212, 3032200

Atlantic salmon fillets - code 3041031

Small quantities of fish fillets may be included in other categories that include products from the commercial fishery, however, as the exports under these categories are relatively small, the quantity of aquaculture products in the categories must also be small.

## Aquaculture value added

#### **Concepts**

The aquaculture value added account is designed to measure the economic production (value added) of goods and services from aquaculture establishments. Economic production can be defined as any process that creates value or adds value to existing goods. Consistent with this definition, the Canadian System of National Accounts defines economic production as the production of goods or services, which are exchanged for money in the marketplace.

Starting in 1997, the account displays the inputs and outputs (mostly revenues and expenses except for the change in inventory values) on a calendar year basis. These data are displayed by province, except for the Prairie Provinces where aquaculture is a relatively small industry. Gross value added at factor cost is residually derived by subtracting product inputs, or purchases from other businesses, from the gross output of the sector.

Aquaculture is the managed production of fish. In Canada, the industry is dominated by the production of finfish, primarily salmon off the coasts of British Columbia and New Brunswick. Production of shellfish is smaller with Prince Edward Island and British Columbia being the major producing provinces.

Under the North American Industrial Classification System (NAICS), this industry comprises establishments primarily engaged in farm-raising finfish, shellfish, or any other kind of aquatic animal. These establishments use some form of intervention in the rearing process to enhance production, such as keeping animals in captivity, regular stocking and feeding of animals, and protecting them from predators.

The aquaculture industry includes hatcheries and sales within the industry, for example, sales from a hatchery to a grow-out operation are included. The aquaculture industry does not include sport fishing or the wild fishery.

The estimates also include the costs and revenues derived from processing where it is an integral part of the establishment, but not the main activity or source of revenue.

### **Definitions**

## A business entity and an establishment

A business entity is an economic transactor having the responsibility and the authority to allocate resources in the production of goods and services.

A statistical establishment is one production entity or the smallest grouping of production entities which produces as homogeneous a set of goods and/or services as possible; which does not cross provincial boundaries; and for which records provide data on the value of output together with the cost of principal intermediate inputs used and cost and quantity of labour resources used to produce the output.

#### The population of interest

The population of interest is all establishments classified to aquaculture under NAICS 112510 and operating for at least one day during the reference year.

### **Financial variables**

Operating revenues are generated from the sale of: whole fish (fresh or chilled); fish eggs or live fish for grow-out; live fish; whole fish dressed and frozen; fish fillets; fish that are dried, smoked or in brine; molluscs (oysters, mussels, clams, scallops;) and, seed or larvae for grow-out. Operating revenue may also include revenue from other sources such as real estate rental, consulting or government subsidies.

Non-operating revenues include income from interest or dividends.

Salaries and benefits include wages, salaries and benefits such as vacation pay, commissions or bonuses paid to employees as defined by the Canada Customs and Revenue Agency and requiring a T4 Supplementary Form. This item includes the employer portion of employee benefits for items such as health care insurance plans, Canada/Quebec Pension Plan contributions or Employment Insurance premiums.

The processing services are the costs incurred when another company provides services related to gutting, cleaning, slitting or shelling.

Other operating expenses include a long list of items such as: energy (electricity, gasoline, diesel, propane); water; transportation; rental and leasing; maintenance and repair; legal; accounting; consulting; veterinary; financial services; insurance; advertising; travel; property taxes; licenses; permits; office; management; and depreciation.

Non-operating expenses relate to interest expenses on loans or the interest component of a capital lease.

## **Methods**

These data are produced as part of Statistics Canada's Unified Enterprise Survey (UES) conducted in 1997 for the first time. The survey incorporates several annual business surveys into an integrated survey. It aims to ensure Statistics Canada receives consistent and integrated data from many types of surveys and sizes of businesses, with enough detail to produce accurate provincial statistics.

## **Target population**

The target population for this survey is: all establishments classified to aquaculture under NAICS 112510 that operated for at least one day during the reference year.

## Frame and sample design

Two sources of data are used to derive the estimates:

- a probability sample survey of aquaculture establishments with a gross business revenue greater than or equal to a cut-off that varied by province from \$30,000 to \$105,000.
- taxation data are used to estimate for businesses with a gross business revenue less than the cut-off.

The frame that is used for the selection of the probability sample is Statistics Canada's Business Register. This list frame is updated and verified prior to sample selection. For 2011, the frame included 552 establishments classified to aquaculture.

Before a sample is taken, the records are stratified by province. Within each province, to improve the efficiency of the sample design, strata are defined using the gross revenue variable on the Business Register.

The "must-take" stratum contains the enterprises (with all its associated establishments) with revenue greater than or equal to \$25,000,000. All of these establishments are sent a questionnaire.

The "take-none" stratum contains the establishments with gross business revenue less than the cut-off. Data for these businesses are obtained from taxation data.

For the establishments not selected in the "must-take" (greater than \$25,000,000) or "take none" (less than the cut-off), three strata are defined to improve the efficiency of the sample design. There is a "take-all" stratum (all establishments are sent a questionnaire) and there are two "take-some" strata (a sample of establishments are selected and sent a questionnaire).

The overall sample size for 2011 was 159 establishments.

#### **Data collection**

In the spring, respondents selected in the questionnaire part of the sample were asked to report their fiscal year transactions. The fiscal year data are subsequently aligned to produce calendar year data using provincial level industry indicators.

The survey is conducted by mail along with Computer Assisted Telephone Interviews. These data are examined for inconsistencies and errors using automated edits coupled with an analytical review. Data for non-respondents and no-contacts are imputed, partially with the assistance of tax data.

## **Estimation design**

The sampling weights derived from the sample design are modified and improved if necessary, using post stratification. This is possible because, during the passage of time since the sample was selected, the Business Register is updated further with more complete information.

### Analysis of the estimates

The last step of the process is analytical. The financial picture for aquaculture is assessed within the context of other related production statistics available from provincial regulatory sources. Although the two sources measure different things, the provincial administrative data are valuable in the analysis to assist in the reduction of error and in confirming the accuracy of the estimates.

## **Data quality**

All surveys are subject to sampling and non-sampling errors. Statistics Canada uses a variety of methods to minimize all types of errors. Measures of sampling error along with other indicators of quality are provided.

The coefficients of variation (CV), a measure of sampling error, are computed. The quality of the estimates are classified as Excellent (CV is 0.01 to 4.99%); Very good (CV is 5.00% to 9.99%); Good (CV is 10.00% to 14.99%); Acceptable (CV is 15.00% to 24.99%); Use with caution (CV is 25.00% to 34.99%); and Unreliable (> 35.00%).

Using these ratings at the national level, the 2011 estimates are judged to be very good, and at the provincial level, the estimates range from excellent to acceptable.

Every effort is made to minimize the non-sampling error of omission, duplication, reporting and processing. When necessary, some records are imputed using information from tax files where possible.

Of the sampled units contributing to the estimate the weighted response rate was 72.6%.

Finally, the aquaculture estimates were compared to and found to be consistent with administrative data sources obtained from the provinces, reinforcing confidence in the quality of the aquaculture statistics. All of the data are reviewed