
**ECONOMIC SURVEY RESULTS
OF CRABBERS' EXPLOITATION
IN AREA 12A
2000-2001**

QUEBEC REGION



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SUMMARY

The financial situation of the Area 12A crabbers' fleet was good in 2000 and 2001. In 2001, however, the cash flow dropped 38% compared to 2000. This drop was mainly attributed to a 15% decrease in the landing price of snow crabs and also to a 22% decrease in the fleet's total landings. The average cash flow for the two years being studied was \$44 802.

ACKNOWLEDGEMENTS

We would like to thank all of the fishers who agreed to participate in this study. Without their cooperation, it would not have been possible.

As such, it is important to emphasize that 70% of the snow crab fishing businesses in Area 12A participated in this study.

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INTRODUCTION

The Policy and Economics Branch, Department of Fisheries and Oceans, Quebec Region, carried out this Costs and Revenues Study of Area 12A snow crab fishers for 2000 and 2001. The average cash flow, the owners' average total income, the net income, the structures of the landings and the main technico-economic characteristics of the crabbers in Area 12A are described in this document.

This study is the update of a document called "Economic Survey of Crabbers' Exploitation in Area 12A" for 1998.

Analyzing the exploitation results help us to better understand the socio-economic issues and financial characteristics of the snow crab fishing fleets in this area.

1. Methodology

This study is the result of a survey carried out with Area 12A crabbers at the end of 2002. The 12A fishing area is shown in Annex 1. The methodology used to carry out this study is described in the following section.

1.1 Data Collection

Area 12A has 10 snow crab fishing businesses. For the purposes of this study, seven businesses were interviewed on their operating costs and income for the 2000 and 2001 fishing seasons. These interviews were carried out by a researcher in November and December 2002. An explanatory letter was sent to the businesses to facilitate the researcher's work in collecting data and generating a high response rate.

The survey was carried out using a questionnaire developed by the Department, containing all of the information needed for the study. The nature of this information is confidential and the results discussed in this report are merely averages. The main data collected with the help of this questionnaire is described in Annex 2.

1.2 Data Validation

Data was validated by comparing certain variances with the fleet average and by cross checking with the researcher to detect inconsistencies. Fishers were contacted to provide specifications and some adjustments were made.

2. Results and Analysis

2.1 Cash Flow

Table 1 shows the sample's average gross revenue and operating costs for 2000 and 2001. This data was used to calculate the average cash flow for each year. Cash flow is the result of a financial calculation which takes into account the income and outlays made during the year by the fishing business. It does not include the depreciation of assets (which is not an expenditure), but considers the loan repayments made during the year. Thus, cash flow is the amount available to the owner as payment for work and business profit, after all expenses have been paid.

Cash flow may sometimes be overestimated. Certain expenses, such as maintenance costs, are financed by loans or funds from previous years, which does not generate any capital outflow from the current financial year. The calculation of the following cash flow is based on the idea that all of the owner's obligations were met during the year (with the exception of the financial charges for which actual payments are considered). The cash flow is calculated as follows:

OVERALL INCOME *minus* - variable operating costs (*details in Annex 2*)
- labour costs (*details in Annex 2*)
- fixed operating costs (*details in Annex 2*)

Overall income is the amount of income generated by fish sales and other revenue from the fishing business' activities.

Variable operating costs are expenses relating directly to fishing activities and the use of assets other than the vessel (vehicles, facilities and equipment).

Gear costs include the net acquisition of fishing gear (purchase minus sales) as well as the cost for repairing and maintaining the gear.

Maintenance costs are all costs incurred to keep business assets in good working condition. These assets include vehicles, facilities and equipment used on land. This amount does not include costs for maintaining and repairing the gear.

Labour costs include salaries and fringe benefits paid to the crew members.

Fixed operating costs are annual fixed expenses that relate to equipment and facilities such as finance charges, insurance and licenses.

Total Net Income and Cash Flow

Results in Table 1 show a total fishing income of \$162 496 in 2000. In 2001, the total income for the sample decreased 17% for a total of \$134 140. This slump was attributed to a 15% decrease in the snow crab landing price and a 22% decrease in total landings. The drop in total landings is explained by the landing of secondary species in small quantities in 2001.

The average cash flow rose to \$55 181 in 2000 and decreased in 2001 (\$34 423). The average cash flow for both years was \$44 802.

Operating Costs

Total operating costs decreased 7% in 2001, as compared to 2000. Operating costs increased to \$99 717 in 2001. The average for both years was \$103 516.

The operating cost structure reveals that the highest cost was for labour. Labour costs totaled \$52 270 in 2000 and \$48 074 in 2001 for crabbers in Area 12A. . This represents almost 50% of the total operating costs for 2000 and 2001. However, these costs have decreased 8% in 2001 as compared to 2000.

After labour costs, finance charges (interest and loan repayment) were the highest for Area 12A with 12% of the operating costs for both years. Repairing, replacing and purchasing costs were also significant. They accounted for 6% and 5% respectively of the total costs in 2000 and 2001.

Table 1
Cash Flow and Structure of Operating Costs
Area 12A Crabbers

2000 and 2001

	2000		2001		Average
	(\$)	Part in %	(\$)	Part in %	00 and 01 (\$)
REVENUES					
Gross Revenues					
Gross revenues from fishing	162 496	-	134 140	-	148 318
Total revenues	162 496	-	134 140	-	148 318
OPERATING COSTS					
Variable Costs					
Fuel, oil and grease	3 633	3%	3 601	4%	3 617
Fishing gear	5 917	6%	5 542	5%	5 730
Maintenance	4 159	4%	5 062	5%	4 611
Other	19 331	18%	16 795	17%	18 063
Subtotal	33 040	31%	31 000	31%	32 020
Labour Costs					
Labour costs	52 270	49%	48 074	48%	50 172
Subtotal	52 270	49%	48 074	48%	50 172
Fixed Costs					
Finance charges	13 293	12%	12 179	12%	12 736
Insurance	1 729	2%	2 047	2%	1 888
Legal and administrative fees	1 567	1%	1 499	2%	1 533
Other (registration, licences, associations etc.)	5 416	5%	4 918	5%	5 167
Subtotal	22 005	20%	20 643	21%	21 324
Total operating costs	107 315	100%	99 717	100%	103 516
CASH FLOW	55 181		34 423		44 802

Source: Survey of a fisher sample and DFO data (gross revenue from fishing)

Average Total Income for Captains/Owners

The cash flow as described previously is generated by fishing activities and does therefore not include revenues from employment insurance. An important source of revenue for fishers, employment insurance is added to the cash flow to give an overall view of the financial situation of captains/owners. See table below:

Table 2
Average Total Income for Captains/Owners
Area 12A Crabbers
2000 and 2001

	2000	2001	Average 00 and 01
Cash flow	55 181	34 423	44 802
Employment insurance	10 163	11 362	10 763
Total income	65 344	45 785	55 565

Source: Survey of a sample of fishers

The total revenue for crabbers in Area 12A was an average of \$55 565 for both years. The increase in employment insurance seen in 2001 did not compensate for the decrease in cash flow. The result was a 30% drop in total income in 2001.

Average Net Income

The net income concept used in this analysis takes into account the same expenditure items used to calculate the cash flow, but replaces loan repayment with an annual amortization of the business' assets. Annual amortization is calculated by a linear depreciation of each active component according to its average life. Consequently, net income is the amount available to captains/owners as payment for work and business profit while considering the financial needs relating to asset renewal.

Table 3
Average Net Income
Area 12A Crabbers
2000 and 2001

	2000	2001	Average 00 and 01
Total revenue	162 496	134 140	148 318
Operating costs before loan repayment	96 802	89 550	93 176
Annual amortization	13 196	15 515	14 356
Net income	52 498	29 075	40 787

Source: Survey of a fisher sample and DFO data (gross revenue from fishing)

Table 3 shows that the average net income for crabbers in Area 12A was \$40 787 for both years. As with cash flow, 2000 was the most prolific year with a net income of \$52 498 as compared to \$29 075 in 2001.

Comparison of the Sample's Landings with the Population

Table 4 compares the average gross revenue for all of the crabbers in Quebec's Area 12A with those participating in the current study. These participants represent 70% of all crab fishing permit holders in Area 12A. The average gross revenue for fishing was \$162 496 in 2000 for this sample and \$160 470 for the 10 snow crab fishing businesses. The average gross income for the sample decreased in 2001 (\$134 140) while the businesses in Area 12A grossed \$130 882. For the two years being studied, there is a less than 2.5% deviation between the participants and the population in gross revenue, which confirms that the sample's average gross income represents the average gross income for crabbers in Area 12A.

Table 4
Comparison of the Sample's Landings with the Population
Area 12A Crabbers
2000 and 2001

		2000	2001
Population	Number of businesses	10	
	Landings (\$)	160 470	130 882
Sample	Number of businesses	7	
	Landings (\$)	162 496	134 140
Variance between the sample and the population *		1.3%	2.5%

*Represents the ratio of the sample's landings compared with the population

Source: Fisheries and Oceans Canada

2.2 Structure of the Landings

Table 5
Structure of Average Landings
Area 12A Crabbers
2000 and 2001

	Average landings		Average landing price
	(\$)	(kg)	(\$/kg)
2000			
Snow crab	122 526	23 195	5.28
Greenland halibut	25 768	12 235	2.11
Atlantic cod	7 651	5 017	1.53
Other	6 551	7 855	-
Total	162 496	48 302	-
2001			
Snow crab	106 404	23 577	4.51
Greenland halibut	13 345	6 782	1.97
Atlantic cod	9 692	6 367	1.52
Other	4 699	1 111	-
Total	134 140	37 837	-

Source: Fisheries and Oceans Canada

Total landings (all species) valued \$162 496 in 2000 and \$134 140 in 2001. These landings represent an average volume of more than 48 tons per fishing business in 2000 and close to 38 tons in 2001.

The landing structure for Area 12A crabbers is made up primarily of snow crabs. The average landing value for this species was 75% and 79% (respectively) of the total landings in 2000 and 2001. The average landing price decreased in 2001 to settle at 4.51 \$/kg. This is a decrease of more than 15% compared to the price fishers received in 2000.

The landing value of secondary species, mainly Greenland halibut and Atlantic cod, was \$39 970 in 2000 and \$27 736 in 2001. The revenue from these species decreased 31% in 2001 due to, among other reasons, the decrease in landings of Greenland halibut.

2.3 Technico-Economic Characteristics of Area 12A Crabbers

Table 6
Technico-Economic Characteristics of Area 12A Crabbers
2000 and 2001

Description	2000	2001
Average age of the vessels	12	13
Average length of the vessels	37'4"	37'4"
Length of the fishing season (weeks)	16	14
Number of trips	35	33
Number of days at sea	43	43
Crew size	3	3
Initial purchase price of the vessel	\$98 143.00	\$98 143.00
Land asset purchase price	\$35 571.00	\$36 714.00
Major additions or modifications	\$51 275.00	\$79 419.00
Depreciation *	\$83 054.00	\$98 569.00
Value of depreciated assets as of December 31	\$101 935.00	\$115 707.00
Loan balance	\$27 767.00	\$26 400.00
Debt/Asset ratio	0.27	0.23

*See Annex 3 for a detailed description of the service lives used to calculate depreciation

Source: Survey of a fisher sample and DFO data (fishing effort)

Table 6 shows the main characteristics of crabbers in Area 12A. The average age of the vessels in the fleet is 13 years or approximately half of their useful life cycle. The fishing season was spread over 16 weeks in 2000 and 14 weeks in 2001. In 2000, the average number of trips was 35 and the number of days at sea was 43. In 2001, the number of trips

was 33 and the number of days at sea was 43. The average crew size was 3, excluding the captain/owner.

The average purchasing cost for vessels was \$98 143 and land assets were \$36 714. Since buying their vessel, the crabbers in Area 12A have invested an average \$79 419 in addition costs and major modifications. This caused, taking into account the depreciation, a 14% increase in the value of depreciated assets, totaling \$115 707 at the end of 2001.

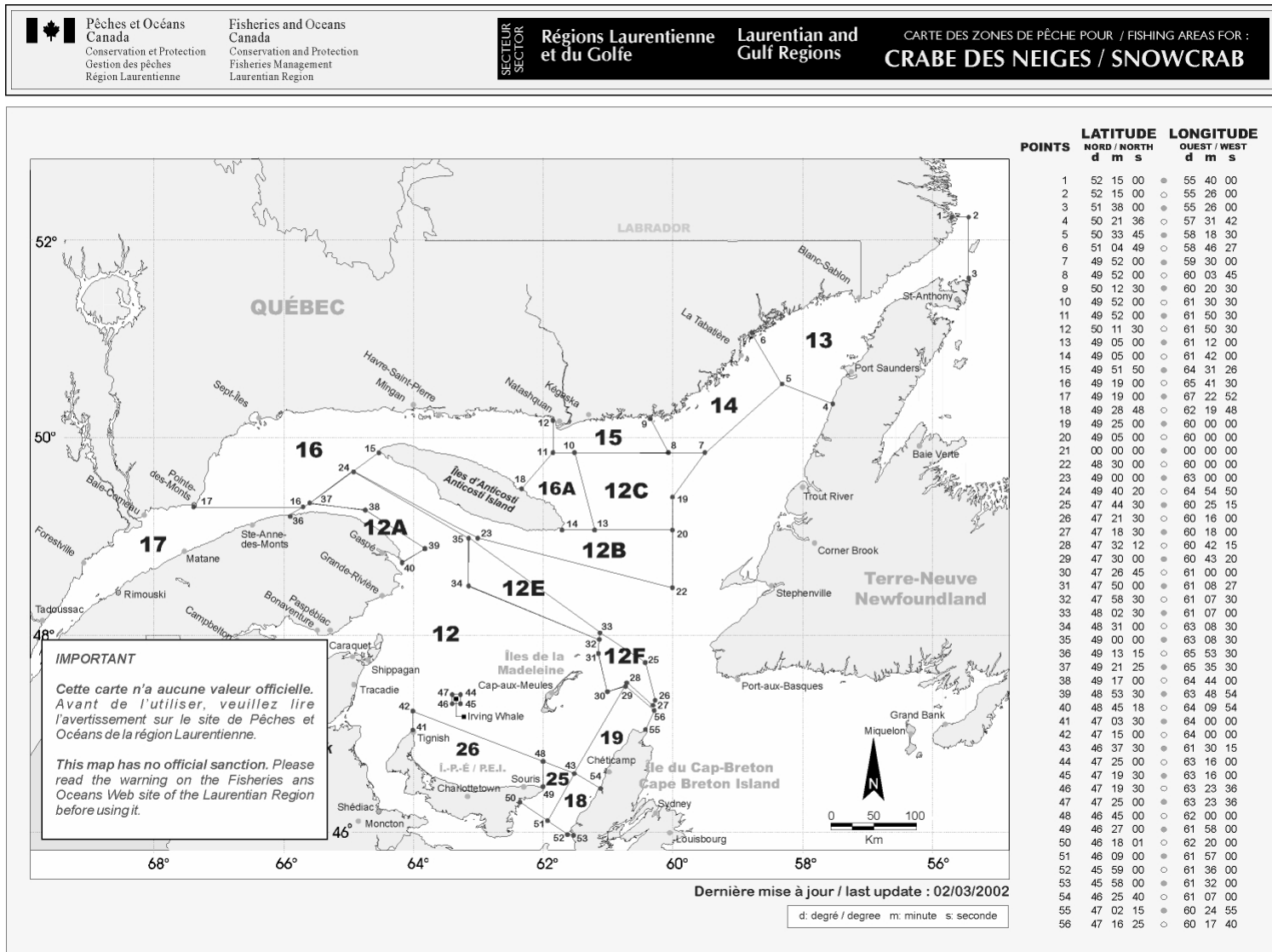
By calculating the **debt/asset** ratio, the proportion of debt versus assets can be determined. The average ratio was 0.27 in 2000 and 0.23 in 2001. Debt represented 27% of business assets in 2000 and 23% in 2001.

CONCLUSION

The results of the operations carried out by Area 12A snow crab fishing businesses allowed the fleet to obtain a significant cash flow and net income for 2000 and 2001. However, 2001 had lesser results due to a weaker landing price and a decrease in the fleet's total landings.

ANNEXES

Annex 1 Map of Snow Crab Fishing Areas



Annex 2

Key Information Gathered During the Survey

- General characteristics of the business (main and secondary vessel)
 - CFVN
 - Length
 - Type of hull
 - Gross tonnage
 - Braking power
 - Year construction ended
 - Year of purchase
- Capital
 - Allocation of initial purchase price according to the vessel's components
 - Major additions or modifications made after purchase
 - Land assets
- Fishing effort
 - Number of days at sea and number of weeks per species
 - Number of trips
 - Crew size per species
- Salaries and social costs
- Variable costs
 - Fuel, oil and grease
 - Food
 - Bait, ice and salt
 - Vessel maintenance and repairs
 - Repair, replacement and purchase of fishing gear
 - Dockside monitoring
 - Sea observers
 - Vehicle expenses
 - Joint planning
 - Co-management
 - Scientific assessment
- Fixed costs
 - Registration, licences and plate number fees
 - Wharf charges
 - Vessel storage
 - Association
 - Insurance
 - Administrative and legal fees
 - Quota leasing
 - Vessel leasing
 - Interest charges
 - Loan repayment
- Loans
 - Balance
- Various types of income
 - Gross fishing revenues
 - Revenues from leasing fishing quotas
 - Other

Annex 3

Period of Amortization Used for Each of the Vessels' Components

	Description	Number of years
Hull	Fiberglass or fiberglass covered wood	
	<i>Less than 35 feet</i>	15
	<i>35 feet and over</i>	25
	Wood	
	<i>Less than 35 feet</i>	10
	<i>35 to 64 feet, 11 inches</i>	15
	<i>65 feet and over</i>	20
	Steel	25
Engine	Diesel	15
Deck equipment	Deck equipment	15
Electronic equipment	Electronic equipment	5
Land assets	Vehicles	7
	Tows	15
	Other	20

The amortization period for hulls that are 35 feet and over in fiberglass or fiberglass covered wood was increased from 20 to 25 years to better reflect the hull's useful life cycle. The same applies to vehicles, whose amortization period rose from 5 to 7 years. The amortization period for other land assets rose from 15 to 20 years.