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Commercial Scallop (*Placopecten magellanicus*) Fishery Profile in the Gulf Region

STATISTICAL AND ECONOMIC ANALYSIS SERIES

Economic Analysis

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Canada

Commercial Scallop (*Placopecten magellanicus*)
Fishery Profile in the Gulf Region

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2010

Statistical and Economic Analysis Series
Publication **No.1-5**

Published by:
Economic Analysis and Statistics Branch
Policy Sector
Fisheries and Oceans Canada
200 Kent Street
Ottawa, Ontario
K1A 0E6

Commercial Scallop (*Placopecten magellanicus*)
Fishery Profile in the Gulf Region.

Également disponible en français.

DFO/2010-1677
Cat. No.Fs22-7/1-5E-PDF
ISBN 978-1-100-16201-0
ISSN 1921-877X

Correct citation for this publication:

Mallet, M. 2010. Commercial Scallop (*Placopecten magellanicus*) Fishery
Profile in the Gulf Region. Statistical and Economic Analysis Series. **No.1-5:** v + 25 p.

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ABSTRACT

In the Gulf Region, the scallop fishery is mostly a secondary fishery. In 2009, 204 (26%) of the 772 scallop license holders were active, landing 112mt of scallop meats for a landed value of over $1,734 million, equivalent to an average gross revenue of about $8,500 per active scallop harvesters. Overall the Gulf Region scallop landed volume represents around 2% of all scallops landed in Canada.

From the 772 scallop fishing licences holders in 2009, 729 were traditional scallop fishing licences and 43 were First Nation Commercial Communal fishing licences.

In 2008, five plants were processing scallop in the Gulf Region, consisting mostly of packaging muscle meats to sell fresh or frozen. In 2008, less than 1% of the production was smoked or chowder mix.

Major importers of Canadian scallops are the US and France with 52% and 26% respectively of the 2009 total Canadian exports value.

RÉSUMÉ

La pêche du pétoncle dans la région du Golfe est principalement une pêche complémentaire. En 2009, 204 des 772 détenteurs de permis de pêche du pétoncle, soit 26 %, étaient actifs. Ils ont débarqué 112 tm de chairs, d’une valeur au débarquement de plus de 1,734 M$, ce qui équivaut à un revenu brute moyen de près de 8 500 $ par pêcheur actif. Globalement, le volume des débarquements de pétoncle dans la région du Golfe représente environ 2 % du total des débarquements canadiens de pétoncle.

Des 772 permis de pêche du pétoncle émis en 2009, 729 étaient des permis de pêche traditionnels et 43 étaient des permis de pêche commerciale communautaire émis à des Premières nations.

En 2008, cinq usines faisaient la transformation du pétoncle dans la région du Golfe, soit l’emballage des muscles pour la vente au frais et congelé. En 2008, moins de 1 % de la production était à l’état fumé ou de mélange à chaudrée.

Les États-Unis et la France sont les principaux importateurs de pétoncles canadiens, représentant 52 % et 26 % respectivement de la valeur totale des exportations canadiennes de 2009.

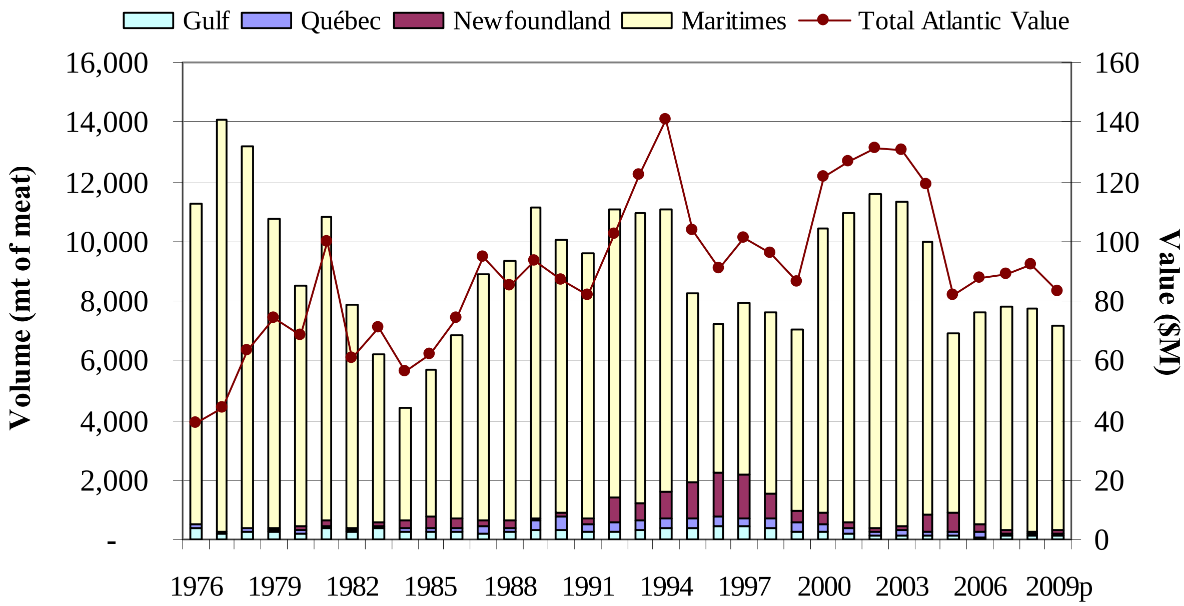
1.0 BACKGROUND

The sea scallop (*Placopecten magellanicus*) or giant scallop is an important commercial species of molluscan shellfish in Canada. Although there exist over 300 scallop species, the Icelandic scallop (*Chlamys islandica*) is the only other wild scallop found in Canadian east coast waters (Dept. of Fisheries and Oceans Canada (DFO) 1988); the Bay scallop (*Argopecten irradians*) used in aquaculture has been introduced from the United States. Sea scallops are found in the northwest Atlantic, from the north shore of the Gulf of St. Lawrence to Cape Hatteras, North Carolina. Their habitat ranges from shallow waters (less than 18m) to deeper waters (54m). In the Gulf of St. Lawrence, the habitat depth varies between 5m and 40m (Dept. of Fisheries and Oceans Canada 1988).

Until 1945, the scallop fishery was mainly concentrated in the Bay of Fundy and Georges Bank areas, part of the Maritimes Region. After the Second World War, landings increased over ten fold and scallop fishing was developed in the Gulf of St. Lawrence mainly in the Northumberland Strait (Dept. of Fisheries and Oceans Canada 1988). Nevertheless, the majority of Canadian scallop landings are still from the Maritimes Region (Fig. 1) and the Gulf Region landings volume in 2009 represented less than 2% of all Atlantic scallop landings. Since the sharp decrease in 2005, the overall Atlantic landings of sea scallop have shown an upward trend but have yet to reach the 2000-2004 average (Fig. 1).

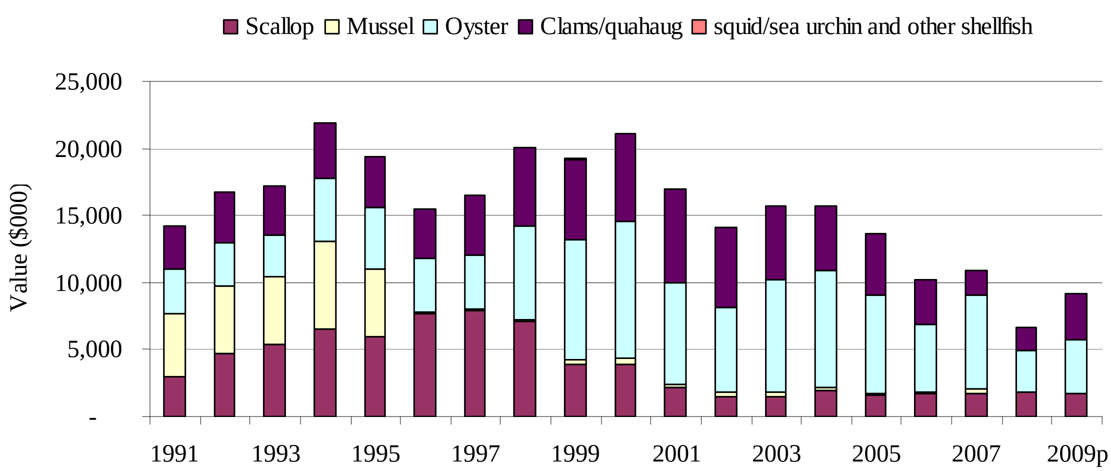
In the Gulf Region, the scallop fishery was the most lucrative mollusc fishery until the mid 1990’s but it has since fallen behind oyster in terms of landed value (Fig. 2). Note that since 1996, most of the mussel revenues of the Gulf Region are from aquaculture. In 2009, the scallop fishery represented around 0.7% of the total landed value of all of the Gulf Region fisheries (Fig. 3).

Figure 1. Atlantic Canada scallop landings* in meat weight and value by DFO management areas



*Landings in Newfoundland and Labrador include Icelandic scallops; preliminary data for 2009.
Source: DFO statistical Services Ottawa; Policy and Economics Branches of Gulf, Maritimes, Newfoundland and Labrador, and Quebec Regions; **compilation** Gulf Region Policy and Economics Branch.

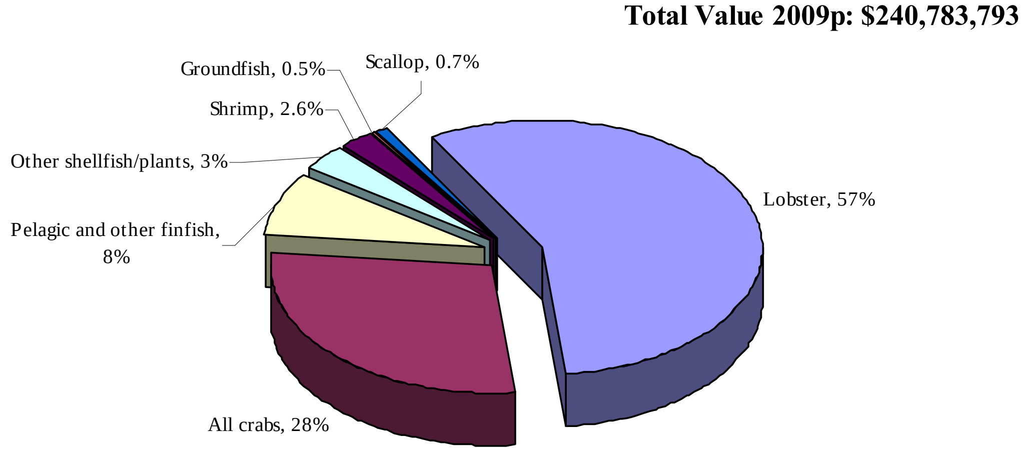
Figure 2. Landed value* of the mollusc fisheries of the Gulf Region from 1984 to 2009 preliminary (p).



*Since 1996, most mussel landings are categorised as aquaculture and are thus excluded; oyster revenues include wild and aquaculture.

Source: DFO Ottawa; **compilation** Gulf Region Policy and Economics Branch**.**

Figure 3. Gulf Region landed value* for all fisheries in 2009p.



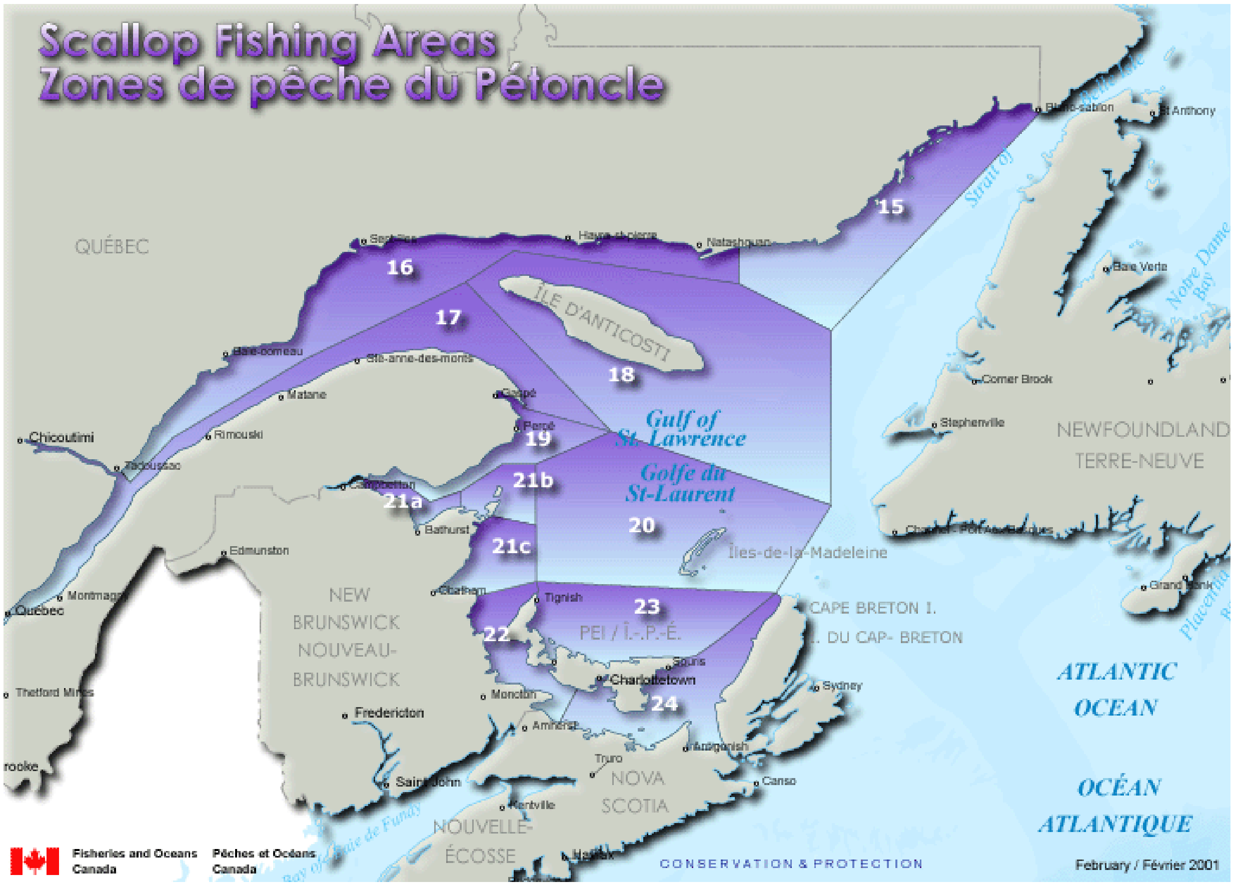
*Most mussel landings are categorised as aquaculture and are thus excluded; oyster revenues include wild and aquaculture.
Source and compilation: DFO Gulf Region Policy and Economics Branch

Depending on the habitat, environmental conditions and management measure (meat count requirements), sea scallops will take four to five years to reach commercial size (Davidson et al. 2007). There is international pressure to limit or completely remove mobile gear fisheries such as scallop drags and an experimental commercial SCUBA diving is in place since 2006. With the decrease in scallop landings, scallop enhancement projects have been put in place in early 1990 in the Quebec Region and in late 1990s in the Gulf Region. Scallop aquaculture companies are currently growing scallops in the Gulf, Quebec and Maritimes Regions. Also in the Gulf Region, managing scallop beds through rotating fisheries has been proposed (Davidson et al., 2007).

2.0 DESCRIPTION OF THE SCALLOP FISHERY

The scallop fishery in the Gulf Region is divided into four scallop fishing areas (SFA), 21, 22, 23 and 24 (Fig. 4). In 1996 the SFA 21 was divided into the three sub-zones 21a, 21b and 21c (Fig. 4) yet licences could still be transferred from one sub-zone to another. However in 2008, those three sub-zones became official and scallop licences can no longer be transferred between sub-zones.

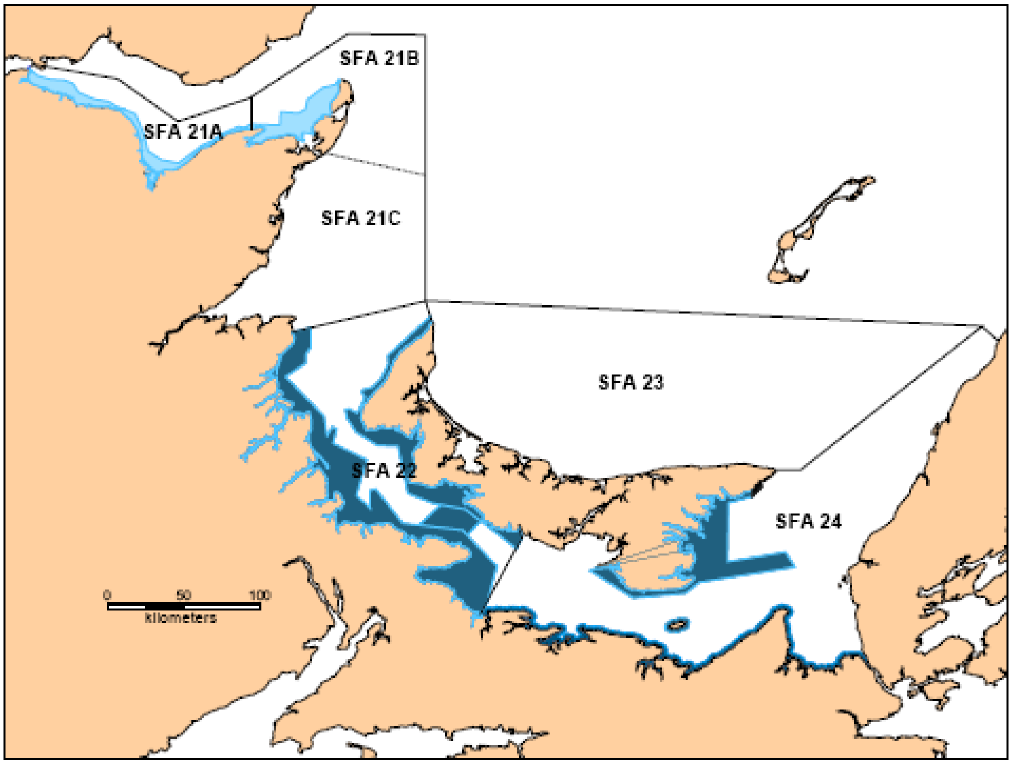
Figure 4. Scallop fishing areas (SFA) in the Gulf of St. Lawrence.



Source: DFO Gulf Region

In addition to SFAs, buffer zones were established to prohibit scallop drags on selected habitat. The buffer zones were mainly implemented to protect lobster larval settling areas and were set jointly by DFO and industry. Over 6,000 square kilometres of buffer zones are currently in place (Fig. 5).

Figure 5. Scallop fishery buffer zones (shaded areas) currently in place in the Gulf Region.



Source: Davidson et al. 2007

2.1 Number of fishing licences

In 2009, 772 licences were issued, a drop of two licences from the annual 774 licences issued from 2003 to 2008 (Appendices 1 and 2). Distribution of the licences has changed with the increased access of the First Nations to the commercial fishery (Appendices 1 and 2). The 1993 Sparrow Decision recognized the right of the First Nations to have access to Communal Fishing Licenses for food, social and ceremonial purposes only. With the Marshall Decision in 1999, First Nations were provided with access to the commercial fishing through Communal Commercial Fishing Licenses which allow for the sale of catches. After the Marshall Decision, the Department of Fisheries and Oceans implemented a licence buy-back program to provide additional access for the aboriginal people.

In 2008, the 772 scallop fishing licences were distributed as follow: 124 to harvesters from the Gulf Nova Scotia, 215 to harvesters from the Gulf New Brunswick, 390 to Prince Edward Island harvesters, and 43 licences to First Nations (Tables 1 and 2).

Table 1. Number of scallop fishing licence holders and number of active fishing licences (reporting fishing scallop) by fishing areas in 2008, excluding First Nations.

Scallop Fishing Area	Licence holders	Active
21a	28	12
21b	23	11
21c	45	5
21 total	**96**	**28**
22 (New Brunswick)	119	60
22 (Prince Edward Island)	60	47
22 total	**179**	**107**
23 total	**75**	**2**
24 (Nova Scotia)	124	34
24 (Prince Edward Island)	255	33
24 total	**379**	**67**
Total all SFC	**729**	**204**

Source: DFO Gulf Region, Fisheries and Aquaculture Management Branch (FAMB) and Policy and Economics Branch; **compilation** Gulf Region Policy and Economics Branch.

Table 2. Number of scallop fishing licences held by the First Nations in the Gulf Region in 2009.

SFA	First Nation	Licences
21	Pabineau	1
	Eel River Bar	2
	Esgenoopetitj	3
	Maliseet First Nation, Madawaska	1
22	Buctouche	1
	Elsipogtog	19
	Indian Island	1
	Red Bank	1
	Native Council of PEI	1
23	Lennox Island	3
24	Millbrook	1
	Paq'tnkek	1
	Pictou Landing	5
	Abegweit	2
	Native Council of PEI	1
Grand Total		**43**

Source: DFO Gulf Region, FAMB, **compilation** Gulf Region Policy and Economics Branch.

The scallop fishery is mainly a secondary fishery (Davidson et al. 2007; Dept. Fisheries and Oceans, 1999) and many scallop licences are inactive (Table 1). In SFA 23 for instance, two scallop licence holders reported scallop landings in the 2009 scallop fishery. Because of the difference in licence management, no attempt was made in this document to track First Nation scallop fishing activities. In 2009, First Nations excluded, 204 licence holders fished scallops and less than 10 scallop licence holders reported fishing only scallops (Table 3). The low scallop density (Davidson et al. 2007) is an important factor for the reduced scallop fishing activity. Scallop fishery activity may also depend on the success obtained by the scallop licence holders in their main fisheries. Of the 729 traditional scallop licence holders (First Nation excluded), 696 are also lobster licence holders. Other licences held include mackerel (704), herring (617), and other molluscs e.g. oysters, mussels or quahaug (354).

Table 3. Summary of activities for traditional scallop fishing licence holders in 2009 based on official landing reports, First Nations commercial communal fishing licences excluded

Description 2009	
Traditional scallop fishing licence holders	729
Scallop licence holders showing no fishing activities for scallop or others	17
Scallop licence holders fishing at least scallop	204
Scallop licence holders fishing only scallop	<10
Number of fish harvesters with 25% or more of their fishing revenue, or $15,000, from scallop fishing	49
Average number of fishing licences held by fish harvesters holding a scallop fishing licence (including the scallop licence)	8.0

Source and compilation: DFO Gulf Region, Policy and Economics Branch.

Since 2006 an experimental commercial dive scallop fishery is being studied; this commercial fishing method is currently in place in the United States (US) (Davidson et al. 2007).

Recreational scallop fishing licences are issued each year to individuals wanting to harvest scallops using SCUBA diving gear. Participants are allowed to dive off the coast of New Brunswick and Nova Scotia but not off the coasts of Prince Edward Island. Recreational scallop harvesters are allowed to keep up to 50 scallops per day in SFA 21 and 22, and 100 scallops per day in SFA 23 and 24 and catches are only for personal consumption. In 2009, 262 recreational scallop fishing licences were issued for New Brunswick and Nova Scotia waters (for both Gulf and Maritimes Region).

2.2 Fleet characteristics

In the Gulf Region, the scallop fishery is a coastal fishery and vessel length varies between 32 and 45 feet. The entire fleet age (active and inactive) in SFAs 21a,b,c, 22 and 24, with an average of 16 to 24 years, is slightly higher than in SFA 23 where the entire fleet average age is 12.4 years (Table 4). In general, vessels used in scallop fishing are about the same age or older than inactive vessels (Table 4). First Nations' vessels were excluded from the analyses. Depending on the building material used for the vessel's hull, the economic depreciation for fishing vessels of 35 feet or more varies between 15 and 20 years (Dept. Fisheries and Oceans 2007).

Table 4. Average age and number of vessels by scallop fishing areas based on activity of the vessel in the scallop fishery in 2007*, First Nation Vessels excluded.

	Status	21a	21b	21c	22	23	24	Grand Total
Average age	active	16.7	28.5	18.0	16.5	21.0	15.1	16.8
	inactive	17.2	17.4	16.1	17.0	12.2	16.0	15.7
	total	**17.0**	**23.8**	**16.3**	**16.7**	**12.4**	**15.9**	**16.0**
Number of vessels	active	11	11	5	98	1	66	192
	inactive	16	8	37	68	62	298	489
	total	**27**	**19**	**42**	**166**	**63**	**364**	**681**

* Incomplete information for 48 vessels - numbers may not add up with other tables

Source: DFO Gulf Region, FAMB and Policy and Economics Branch, compilation Gulf Region Policy and Economics Branch.

3.0 DESCRIPTION OF MAJOR MANAGEMENT MEASURES

The scallop fishery is managed through input control. Major measures include limited entry, designated scallop fishing areas and restricted fishing season, established meat count and gear restriction on scallop dredge width, ring size and washer configuration. Since 1999 scallop harvesters are also required to fill in a logbook to report fishing effort information and landings at the end of each day before they enter port. They are also required to mail the logbook report to DFO Statistical Division no later than two weeks after the season closes.

Fishing seasons vary between SFA and are often adjusted for the season to start on a Monday. Fishing is permitted during daytime only (Table 5) in all SFAs except 21b. More fishery management details can be found on the licence conditions.

Scallops must be shucked at sea and licence holders are authorized to land only the adductor muscle unless buyers have a protocol that has been accepted by the Canadian Food Inspection Agency (CFIA). The ratio of scallop muscle weight to live or round weight is a factor of 8.3, i.e. 100g of meats is equivalent to 830g of live scallop weight.

Table 5. Some important scallop fishing management measures for the 2008 season.

Scallop fishing area (SFA)	Fishing Season	Other restrictions	Maximum Meat Counts per 500g of Meats
21a	June 29 to July 24 (20 days)	6am-6pm, closed on Saturdays and Sundays.	39
21b	Licence holders must contact their local Licensing Service Center in order to make their choice between two five week fishing periods or one ten week fishing period between May 11 to August 7 (50 days).	no fishing allowed from 02:00 p.m. Friday to 05:30 a.m. Monday.	39
21c	June 22 to August 29 (60 days).	5:30am-8pm, closed on Sundays	39
22	May 4 to June 6 (30 days).	from 06:00 a.m. to 06:00 p.m. daily, and will be closed on Sundays	44
23	July 2 to September 1, and from November 5 to November 30 (74 days).	from 6:00 a.m. to 6:00 p.m. daily and will be closed on Sundays.	33
24	November 2 to December 15 (38 days).	Between 6:00am to 6:00pm daily, and will be closed on Sundays.	52

Source: DFO Gulf Region, FAMB, compilation Gulf Region Policy and Economics Branch.

The exploratory commercial diving fishing season runs from June 30 to August 29 for all SFAs. For the time being, harvesters from SFAs 22, 23 and 24 have shown variable interest in scallop commercial diving.

4.0 FISHING INFORMATION

Fishing information is obtained from the scallop fishing logbook. The fishing activity in various SFAs will depend not only on the length of the fishing season, which varies between 20 and 74 days in 2009 (Table 5), but also on the abundance of the resource.

The secondary aspect of the scallop fishery and the performance of the main fisheries also have an impact on the scallop harvesters' activity.

The SFAs with the highest proportion of active scallop harvesters are also the SFAs with the shortest fishing season. From the 2009 logbook and purchase slip information, except for SFA 22, very few harvesters fish the entire number of days available in the season which is 20, 50, 60, 30, 74 and 38 for SFAS 21a, b, c, 22, 23 and 24 respectively (Table 6).

Variation in numbers of harvesting days cannot be entirely explained by the weather. Scallop fishing strategy is related to the harvesters' performance in their other fishery, catch per unit of effort (CPUE) measured as weight of scallop meat per hours of trawling, and revenues.

Table 6. Number of harvesters by total days fished in 2009 based on logbook information*.

Fished days	Scallop fishing areas and length of fishing season					
	21a	21b	21c	22	23	24
	20 days	50 days	60 days	30 days	74 days	38 days
1-5	5	3	3	9	1	6
6-10	1	3	2	16		25
11-15	5	1		23		21
16-20	1	3		30	1	10
21-25				17		3
26-30				12		
31-35		1				2

*Some logbooks were incomplete - numbers may not add up with other tables
Source and compilation: DFO, Gulf Region Policy and Economics Branch.

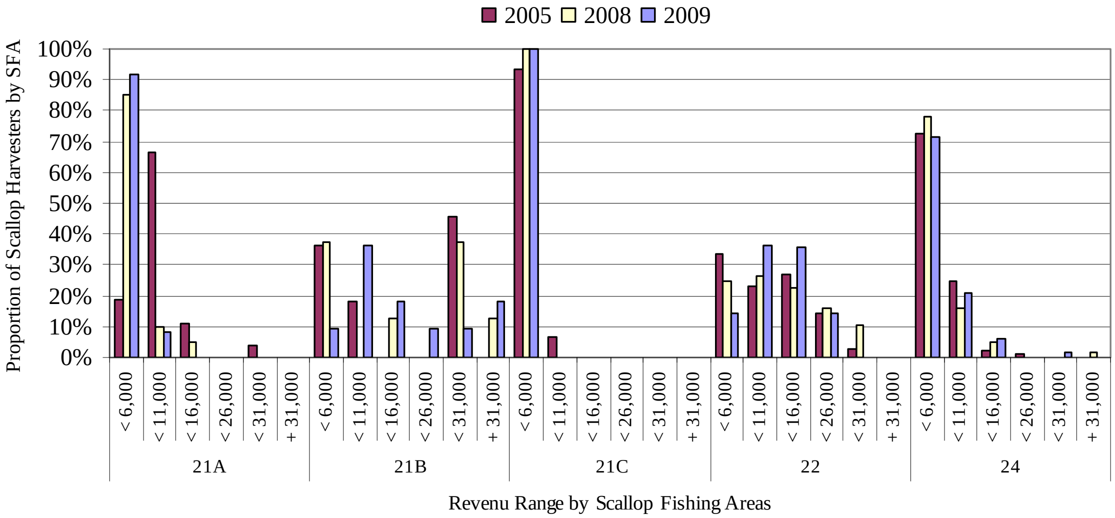
The SFA 21c has one of the lowest reported average CPUE (Table 7), the lowest number of days fished (Table 6) and gross revenues are in the 0-$6,000 bracket. Average CPUEs are highest in SFAs 21b and 22 where gross revenues reach the higher levels, while CPUE are fairly stable through the years in SFAs 21a and 24 where gross revenues are mostly in the lower ranges (Table 7, Fig. 6). Except for SFAs 22 and 24, gross revenues from the scallop landings were less than $11,000 for most scallop harvesters (Fig. 6).

Table 7. Average catch in pounds per hours trawled based on logbook information*.

Scallop fishing area	2003	2004	2005	2006	2007	2008	2009p
21a	6.1	7.2	6.5	4.2	5.6	6.0	3.7
21b	9.0	24.5	5.7	3.5	10.0	17.8	11.6
21c	5.1	5.6	5.7	5.2	4.8	4.0	6.0
22	7.7	9.6	7.2	6.9	9.6	10.2	11.5
24	6.5	7.8	6.0	6.2	6.4	6.0	6.4

*Some logbook contained incomplete information and could not be used to calculate CPUE
Source and compilation: DFO, Gulf Region Policy and Economics Branch.

Figure 6. Distribution of harvesters' annual gross revenue from scallop in SFA 21a,b,c, 22 and 24 in 2005, 2008 and 2009p



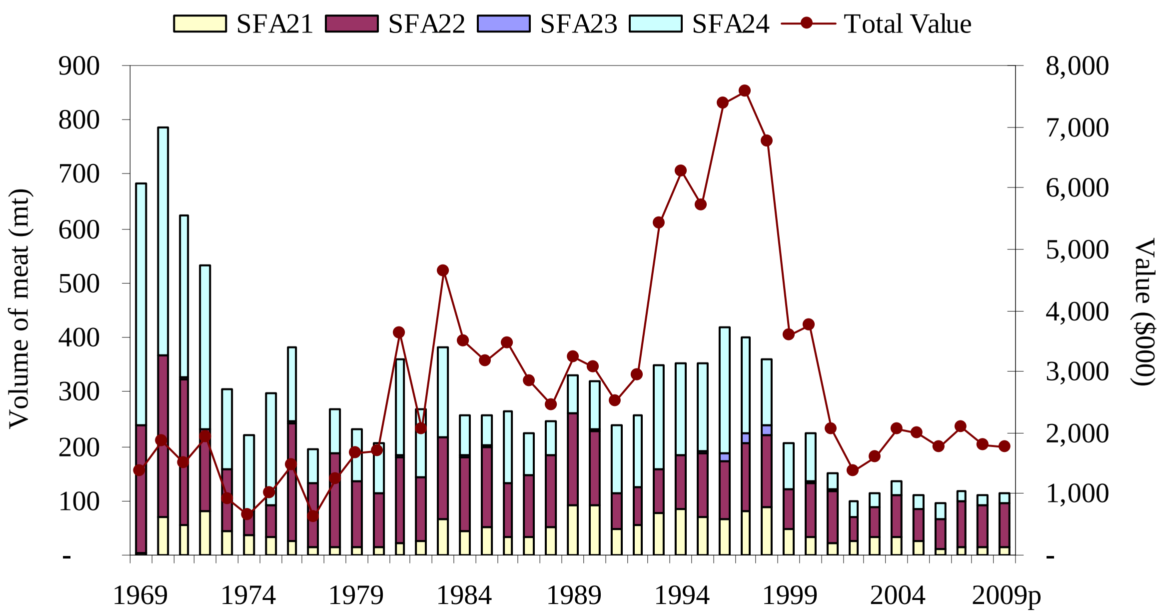
Note: SFA 23 not shown for confidentiality; has less than five active harvesters.
Source and compilation: DFO, Gulf Region Policy and Economics Branch.

5.0 LANDINGS

Gulf Region reported scallop landings peaked in the 1960s, declined until the mid 70s then fluctuated around 250mt until 1998 (Fig. 7). The drop observed in the early 1970s can be attributed to the change in fishery management measures including restricted access to the fishery, drop in the scallop biomass and the energy crisis (Chaussade 1983, Mitchell 1974). The reported landings dropped again in 1999 and in 2002 and have since been fluctuating at around 100mt (Fig. 7).

The decrease in the Gulf Region landings observed in 1999 may be related to the change in data collection that took place during that period and changes in management measures. Changes in gear restriction, including the use of washers and tow bar which modified the efficiency of the scallop drag, took place independently in all SFAs throughout the years. Buffer zones were also added. Also, prior to 2002, landings data were extracted from purchase slips supplied by buyers and from estimates given by fishery officers. Purchase slips information did not include personal consumption or sales to non-registered buyers. Fishery officers were asked to fill supplementary B forms to supply estimates of the amount of cash sale (other than to registered buyers). In 1998 scallop harvesters were asked to report catch and effort information in a logbook, including personal consumption and cash sales (Dept. Fisheries and Oceans, 1999). Filling and returning the scallop fishery logbook was a mandatory licence condition starting in 1999 and full compliance to the program became effective in 2002. Since 2002, landings are taken from the logbooks and information is cross validated with the buyers' purchase slips. Scallop aquaculture is not included in the landings. There is currently little commercial scallop aquaculture in the Gulf Region but the situation may be changing in the future.

Figure 7. Landings in metric ton of meat weight by scallop fishing areas and total value from 1969 to 2009p*.



* When less than five active harvesters SFA 23, landing and value omitted from graph; since 2003, value is for all reported scallop landings.
Source: DFO, Gulf Region Policy and Economics Branch.

6.0 PRICE

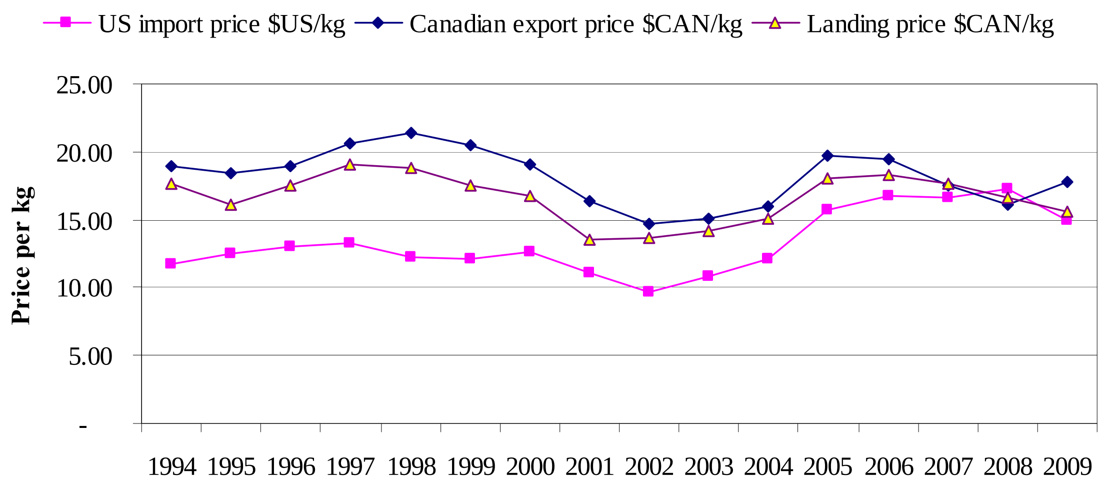
Scallop is sold by size category (meat counts per weight) and weight. Higher meat count per weight means that each muscle is smaller. Listed meat counts sold by Canada on the world markets are 10/20, 20/30, 30/40 and 40/50.

From 1994 to 2009, the export price of Canadian scallop, all commodities and countries of destination combined, has varied between $14.65 and $21.39 per kg (average $16.83) (Fig. 8). A drop in Canadian scallop landings and the lack of other sources for scallop prompted the price increase in 2005 and 2006 (Fig. 8) but the price returned to the $17 range by the end of 2006 after market adjustment. Canadian export prices closely follow the wholesale price on the US market (M. Mallet, personal communication).

From 1994 to 2001, the United States import price for Canadian scallop, all commodities combined, has been stable at $US 12.31/kg (Fig. 8). The increase in scallop import price after 2001 is probably resulting from the combination of increased exchange rate and increased demand for Canadian scallop from other countries.

Prices paid to scallop harvesters in the Gulf Region generally follow the export price (Fig. 8). Note that export prices represent prices paid for all Canadian scallops and consist mostly of scallop from the Maritimes Region.

Figure 8. Average scallop annual US import price, Canadian export price and Gulf region landing price per kg.



Source: USA NOAA Fishery services, DFO Statistical Services, Ottawa, Bank of Canada, **compilation**: Gulf Region Policy and Economics Branch.

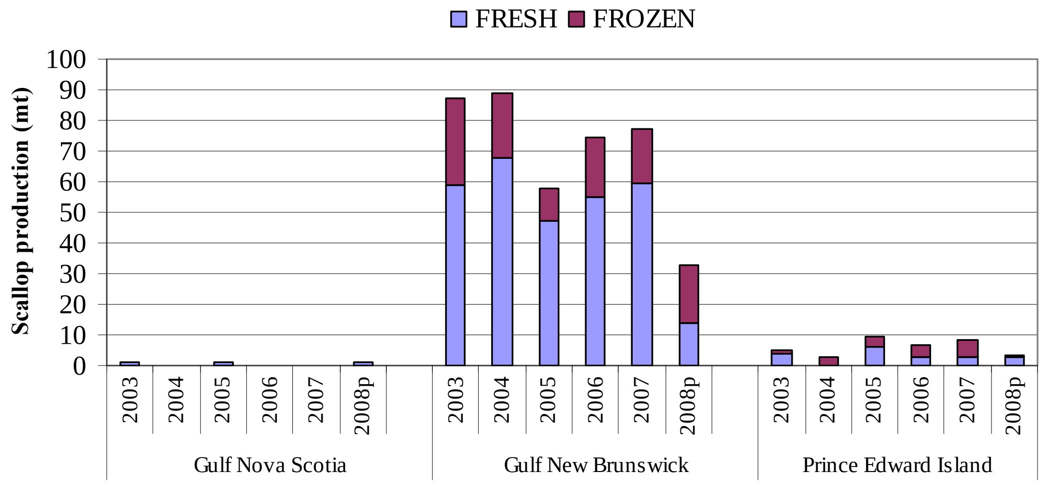
In the Gulf Region, the price paid to harvesters increased from \$0.26/lb in 1967 to \$8/lb in 1994 and have since been fluctuating between \$6/lb and \$9/lb (Appendix 4). Scallop sizes vary between 30/40 in SFAs 21abc and 23, 40/50 in SFA 22 and smaller sizes in SFA 24. However most of the Gulf Region catches are being sold on the local market and are currently not greatly influenced by international market wholesale prices.

7.0 PRODUCTION INFORMATION

In 2008, there were five scallop processing plants in Gulf Region employing 47 people (Policy and Economic Branch survey, Gulf Region, unpublished). A similar unpublished survey in 2004 found six plants processing scallop with a total of 44 employees indicating stability in the production sector.

Although there seem to have been attempts to diversify the production, e.g. chowder mix and smoked scallop, Gulf Region processors production mainly consists of fresh and frozen meats (Fig. 9). In 2008, production other than fresh and frozen scallop represented less than 1% of the total production.

Figure 9. Gulf Region reported scallop plant production (all product form) from 2003 to 2008p.



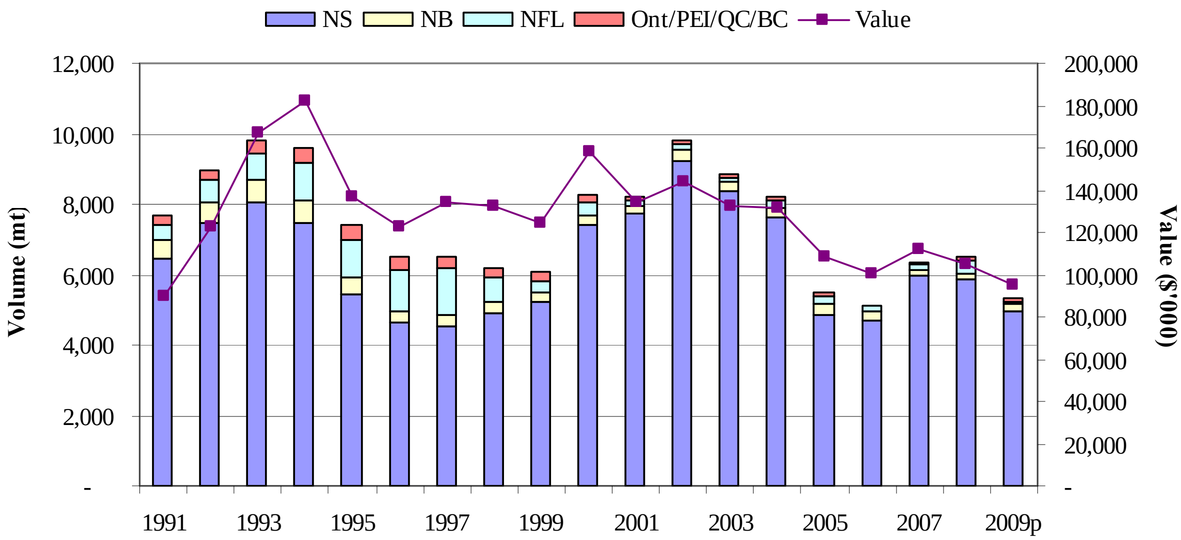
Source and compilation: DFO Gulf Region, Policy and Economics Branch.

8.0 GENERAL MARKET INFORMATION

General exports of Canadian scallop are available by province of origin only and by groups of products. The province of Nova Scotia is the main Canadian exporter of sea scallop (Fig. 10). Note that most of the province of Nova Scotia scallop landings are reported in the Maritime Region. In 2009, the province of Nova Scotia exports value represented over 93% of all Canadian exports while New Brunswick and Newfoundland each shares 4% and 1% of the total exports value respectively (Fig. 11). Value of scallop exports has been fairly stable between 1995 and 2004 at 135 millions dollars but has since been decreasing along with the export volumes. The recent decrease in export volume is due in part to the decrease in Canadian landings observed since 2004. In 2009 (preliminary data), the volume and value of Canadian exports stood at 5,330mt and 95 million dollars respectively (Appendices 5 and 6).

In US, sodium tripolyphosphate (STP) can be added to scallops, STP being a chemical that prevents the loss of moisture. Scallop containing STP will be labelled "water added". In Canada, use of STP is not permitted for scallops.

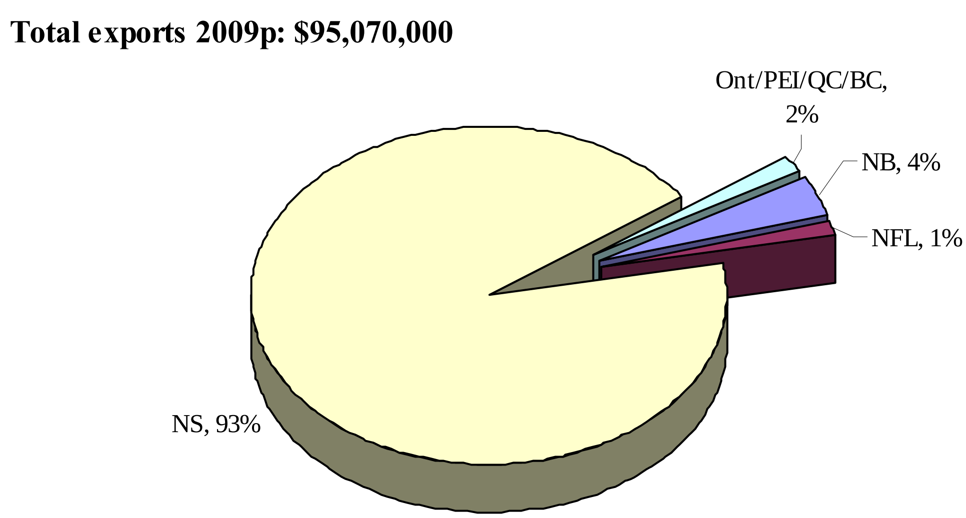
Figure 10. Canadian exports volume of scallops, all products combined, by province from 1990 to 2009p and the total value.



(NS=Nova Scotia, NFL=Newfoundland, NB=New Brunswick, BC=British Columbia, QC=Quebec, PEI=Prince Edward Island, ON=Ontario)

Source: DFO Statistical Services, Ottawa; **compilation** Gulf Region Policy and Economics Branch.

Figure 11. Canadian sea scallop exports value in 2009p by province of origin

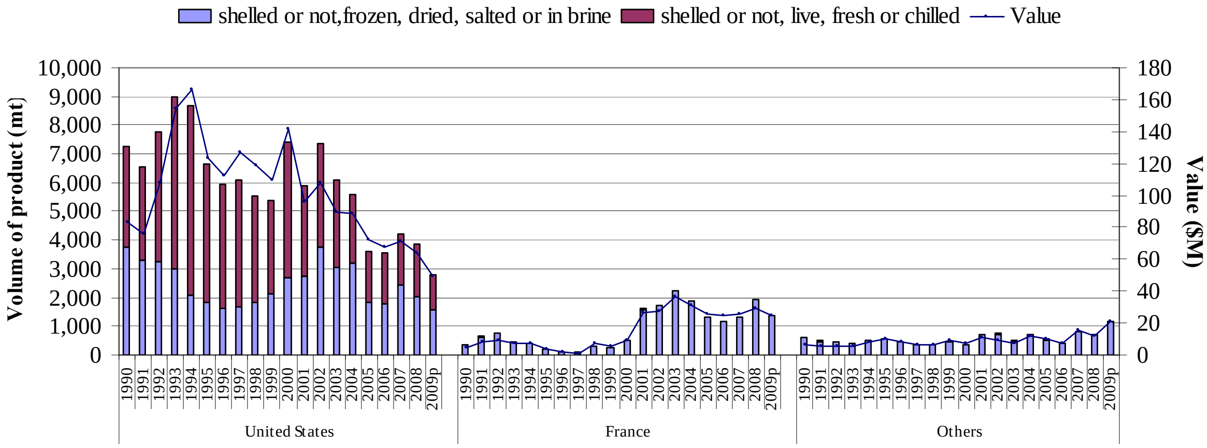


(NS=Nova Scotia, NFL=Newfoundland, NB=New Brunswick, BC=British Columbia, QC=Quebec, PEI=Prince Edward Island, ON=Ontario)

Source: DFO Statistical Services Ottawa, **compilation** Gulf Region Policy and Economics Branch.

The US and France are the two major importers of Canadian sea scallops (Fig. 12, Appendix 7) with 78% of all Canadian exports in 2009 (preliminary data). Scallops exported to the US are either fresh or frozen; in 2009 (preliminary data), 56% of the US sea scallop imports from Canada were in the category “frozen, dried, salted or in brine”. Exports to France and other countries are almost exclusively in the frozen form (Fig. 12).

Figure 12. Canadian exports from 1990 to 2009p by major countries of destination.



Source: DFO Statistical Services Ottawa, **compilation** Gulf Region Policy and Economics Branch.

Demand for eco-labelling is being raised in many fisheries including scallop. Demand from major retailers for Marine Stewardship Certification (MSC) is growing and high to medium-high risk markets include France while medium risk countries include US. The Patagonian scallop fishery (Argentina) and the Eastern Canada offshore scallop have received the MSC label, and other scallop fisheries are currently undergoing MSC assessment.

9.0 CONCLUSION

Although Gulf Region scallop landings are marginal relative to the total Canadian landings (less than 2% of the volume), it represented in 2009 a total landed value of more than $1,734M.

Scallop harvesters are multispecies harvesters and they hold an average of eight fishing licences (including the scallop licence). For the majority of harvesters, the scallop fishery is a secondary fishery and over 95% of the scallop harvesters also hold a lobster licence, considered their primary fishery. In 2009, less than 30% of fish harvesters holding scallop fishing licences were actively fishing scallop, and 95% of scallop landings were concentrated in SFAs 21b, 22 and 24. However in 2009, prices paid to harvesters for other species including lobster decreased substantially; in the event prices maintain these low levels, harvesters may want to seek new sources of revenue and direct their effort towards the scallop fishery.

Economic studies are required to find ways of increasing revenues generated by the scallop fishery. Possibilities currently considered by harvesters are the rotational fishing of scallop beds, commercial SCUBA diving, aquaculture and seeding/enhancing.

Current markets for Canadian sea scallops are the US and France and the products offered are limited to fresh and frozen meat. There may be future needs to initiate an eco-labelling process. The Eastern Canada offshore scallop fishery is currently certified under the MSC program.

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APPENDIX 1.
Number of commercial scallop fishing licences in the Gulf Region

Number of commercial scallop fishing licences issued in the Gulf Region by province and number of active fishing licences (reporting fishing scallop) by fishing areas from 2001 to 2009, First Nations licences excluded.

Scallop Fishing Area	2001	2002	2003	2004	2005	2006	2007	2008	2009
21a issued	28	30	28	28	29	29	28	28	28
active	22	25	27	26	27	27	25	20	12
21b issued	22	21	24	24	23	23	23	23	23
active	7	10	12	10	11	8	5	8	11
21c issued	51	48	46	45	44	44	45	45	45
active	37	25	16	17	16	8	8	5	5
21 total issued	101	99	98	97	96	96	96	96	96
21 total active	66	60	55	53	54	43	38	33	28
22 (New Brunswick)	127	126	126	126	121	120	120	120	119
22 (Prince Edward Island)	61	60	60	60	60	60	60	60	60
22 total issued	188	186	186	186	181	180	180	180	179
22 total active	149	104	102	92	105	95	96	106	107
23 total issued	75	75	75	75	75	75	75	75	75
23 total active	5	3	0	2	2	2	1	1	2
24 (Nova Scotia)	127	124	124	124	124	124	124	124	124
24 (Prince Edward Island)	256	256	256	256	256	256	256	256	255
24 total issued	383	380	380	380	380	380	380	380	379
24 total active	134	102	102	95	102	92	84	63	67
Total issued all SFC	**747**	**740**	**739**	**738**	**732**	**731**	**731**	**731**	**729**
Total active	**354**	**266**	**259**	**240**	**261**	**230**	**219**	**203**	**204**

Source: DFO Gulf Region, Fisheries and Aquaculture Management Branch (FAMB), **compilation** Gulf Region Policy and Economics Branch.

APPENDIX 2.
Number of scallop licences issued to First Nations

SFA	First Nation	2003	2004	2005	2006	2007	2008	2009
21	Pabineau	0	0	1	1	1	1	1
	Eel River Bar	2	2	2	2	2	2	2
	Burnt Church	3	3	0	0	0	0	0
	Esgenoopetitj	0	0	3	3	3	3	3
	Maliseet , Madawaska	0	1	1	1	1	1	1
22	Buctouche	1	1	1	1	1	1	1
	Elsipogtog	10	13	18	19	19	19	19
	Indian Island	1	1	1	1	1	1	1
	Red Bank	1	1	1	1	1	1	1
	Native Council of PEI	1	1	1	1	1	1	1
23	Lennox Island	3	3	3	3	3	3	3
24	Millbrook	1	1	1	1	1	1	1
	Paq'tnkek	1	1	1	1	1	1	1
	Pictou Landing	5	5	5	5	5	5	5
	Abegweit	2	2	2	2	2	2	2
	Native Council of PEI	1	1	1	1	1	1	1
Grand Total		**32**	**36**	**42**	**43**	**43**	**43**	**43**

Source: DFO Gulf Region, FAMB, **compilation** Gulf Region Policy and Economics Branch.

APPENDIX 3.
Gulf Region scallop landing volumes (metric tons of meat only) from 1967 to 2008

Year	SFA21	SFA22	SFA23*	SFA24	Total volume
1968	3	619	5	274	901
1969	5	232	-	447	684
1970	70	298	0	418	786
1971	56	269	0	301	626
1972	81	151	0	300	533
1973	46	113	-	147	305
1974	37	46	-	139	221
1975	33	58	0	206	297
1976	26	218	1	138	383
1977	15	118	-	61	194
1978	15	172	0	81	268
1979	14	123	0	95	231
1980	16	100	-	89	205
1981	23	158	4	174	359
1982	27	115	1	126	269
1983	65	151	2	164	382
1984	44	136	4	74	257
1985	52	145	6	55	258
1986	32	99	2	133	266
1987	32	116	0	75	223
1988	50	135	0	62	247
1989	93	166	-	72	332
1990	93	136	0	91	321
1991	49	63	1	126	238
1992	54	70	1	130	255
1993	77	81	0	193	351
1994	86	97	2	169	354
1995	69	120	2	163	353
1996	67	104	16	233	421
1997	80	125	21	173	399
1998	90	131	20	120	360
1999	46	73	3	83	206
2000	34	97	4	87	223
2001	23	95	1	32	152
2002	27	43	c	30	100
2003	32	56	-	26	114
2004	33	76	c	27	136
2005	27	57	c	25	109
2006	12	54	c	28	94
2007	16	80	c	18	114
2008	15	77	c	16	108
2009p	14	78	c	20	112

Since 2003, scallop weighs include all landed scallops, sold or not; *When less than five (5) active harvesters in SFA 23 volume excluded from SFA and Total volume columns. "-" indicates no landing volume; "0" indicates landings less than 500kg, "c" indicates confidential information.
Source and compilation: DFO Gulf Region, Policy and Economics.

APPENDIX 4.
Gulf Region scallop landing values (in thousands of dollars) and average price from 1967 to 2008

Year	SFA21	SFA22	SFA23*	SFA24	Total value	Average price $/kg
1968	4	831	5	462	1,302	1.45
1969	11	423	-	921	1,356	1.98
1970	169	716	1	986	1,872	2.38
1971	131	647	1	732	1,510	2.41
1972	293	510	1	1,137	1,941	3.64
1973	135	342	-	445	923	3.02
1974	128	138	-	385	651	2.95
1975	125	189	0	707	1,021	3.43
1976	110	846	3	521	1,480	3.86
1977	62	367	-	198	627	3.24
1978	75	763	3	414	1,254	4.68
1979	98	866	2	685	1,650	7.14
1980	145	805	-	762	1,712	8.36
1981	301	1,600	41	1,677	3,620	10.10
1982	233	828	8	974	2,044	7.59
1983	909	1,657	21	2,043	4,630	12.12
1984	592	1,797	54	1,055	3,499	13.59
1985	643	1,737	73	708	3,162	12.27
1986	445	1,125	26	1,875	3,471	13.04
1987	463	1,454	5	915	2,836	12.71
1988	579	1,181	3	671	2,434	9.86
1989	967	1,507	-	743	3,217	9.69
1990	902	1,293	10	877	3,082	9.60
1991	616	618	5	1,286	2,526	10.59
1992	641	782	9	1,516	2,949	11.55
1993	1,086	1,029	2	3,309	5,425	15.47
1994	1,419	1,736	39	3,063	6,258	17.70
1995	1,084	1,872	30	2,719	5,704	16.15
1996	1,157	1,627	292	4,298	7,374	17.56
1997	1,445	2,199	395	3,550	7,588	19.05
1998	1,666	2,426	377	2,290	6,759	18.83
1999	819	1,141	54	1,590	3,605	17.49
2000	585	1,539	73	1,546	3,742	16.81
2001	354	1,255	12	425	2,046	13.49
2002	382	553	c	422	1,357	13.57
2003	463	774	-	375	1,611	14.15
2004	488	1,134	c	436	2,058	15.14
2005	477	1,037	c	458	1,972	18.13
2006	218	959	c	554	1,731	18.32
2007	278	1,420	c	319	2,016	18.42
2008	246	1,234	c	311	1,791	16.55
2009p	221	1,174	c	339	1,734	15.49

Since 2003, scallop values include value of all landed scallops, sold or not; *When less than five (5) active harvesters in SFA 23 value excluded from SFA and Total value columns. "-" indicates no landing value; "0" indicates landings value less than $500, "c" indicates confidential information.
Source and compilation: DFO Gulf Region, Policy and Economics Branch.

APPENDIX 5.
Canadian scallop export volumes by exporting provinces

Volume, commodity scallop (mt)

Year	Newfoundland and Labrador	Nova Scotia	Prince Edward Island	New Brunswick	Quebec	Others	British Columbia	Total
1990	394	6,636	48	877	168	33	65	8,221
1991	439	6,432	81	553	95	66	31	7,697
1992	631	7,469	50	596	125	82	30	8,982
1993	719	8,038	90	673	215	77	13	9,826
1994	1,075	7,451	119	639	214	26	73	9,597
1995	1,054	5,430	128	484	194	42	90	7,422
1996	1,186	4,633	142	335	130	13	54	6,493
1997	1,343	4,529	116	311	159	9	50	6,517
1998	710	4,888	81	326	158	24	19	6,206
1999	310	5,234	57	283	178	4	26	6,092
2000	369	7,392	92	270	130	12	28	8,293
2001	142	7,713	15	237	59	11	32	8,210
2002	206	9,227	10	299	32	36	30	9,840
2003	117	8,390	8	240	23	17	41	8,836
2004	210	7,604	13	288	49	10	45	8,218
2005	234	4,878	24	284	48	16	16	5,501
2006	166	4,719	7	225	14	3	9	5,144
2007	134	5,981	18	160	28	5	21	6,348
2008	351	5,843	48	195	30	8	39	6,515
2009p	80	4,946	55	211	7	0	31	5,330

(Others include Alberta, Manitoba, Northwest Territories, Ontario and Saskatchewan.)
Source: DFO Statistical Services Ottawa, **compilation** Gulf Region Policy and Economics Branch.

APPENDIX 6.
Canadian scallop export values by exporting provinces

Value, commodity scallop ($'000)

Year	Newfoundland and Labrador	Nova Scotia	Prince Edward Island	New Brunswick	Quebec	Others	British Columbia	Total	Average Price/kg
1990	3,644	77,101	573	9,355	1,757	382	937	93,749	11.40
1991	5,134	75,263	806	6,190	1,050	856	389	89,688	11.65
1992	8,057	102,698	612	8,118	1,681	1,115	377	122,659	13.66
1993	12,004	137,339	1,639	11,370	3,358	904	114	166,728	16.97
1994	19,703	143,406	2,186	11,741	3,838	356	1,130	182,361	19.00
1995	16,420	103,915	2,339	9,126	2,997	697	1,322	136,816	18.43
1996	19,283	91,597	2,548	6,330	2,289	120	733	122,900	18.93
1997	24,395	97,488	2,344	6,638	2,603	196	985	134,649	20.66
1998	13,049	106,963	1,662	7,178	3,155	406	332	132,744	21.39
1999	5,560	108,603	1,110	5,830	3,027	42	502	124,672	20.47
2000	7,338	141,353	1,633	4,979	2,190	210	567	158,270	19.08
2001	2,895	125,874	284	3,639	842	162	262	133,957	16.32
2002	3,237	134,756	184	4,597	451	461	499	144,185	14.65
2003	1,643	126,298	116	3,569	207	330	690	132,852	15.04
2004	3,668	121,511	203	4,251	672	140	722	131,167	15.96
2005	4,731	96,571	493	5,259	690	168	264	108,176	19.66
2006	2,941	92,198	134	4,193	308	75	164	100,013	19.44
2007	2,800	105,094	349	2,585	393	73	317	111,610	17.58
2008	4,976	95,142	683	2,903	477	146	566	104,892	16.10
2009p	1,405	88,434	910	3,695	124	0	502	95,070	17.84

(Others include Alberta, Manitoba, Northwest Territories, Ontario and Saskatchewan.)
Source: DFO Statistical Services Ottawa, **compilation** Gulf Region Policy and Economics Branch.

APPENDIX 7.
Canadian scallop exports by main countries of destination

	United States		France		Others*	
Year	Volume (mt)	Value ($'000)	Volume (mt)	Value ($'000)	Volume (mt)	Value ($'000)
1990	7,265	83,328	364	4,344	592	6,076
1991	6,567	75,782	639	8,472	491	5,434
1992	7,763	107,412	760	9,312	459	5,935
1993	8,964	154,156	465	7,118	398	5,455
1994	8,659	166,716	429	7,557	509	8,088
1995	6,647	123,266	209	3,585	566	9,965
1996	5,929	112,639	100	2,039	464	8,223
1997	6,076	126,851	76	1,345	365	6,452
1998	5,529	119,024	329	7,553	348	6,167
1999	5,357	109,614	264	5,618	470	9,440
2000	7,428	142,077	488	9,197	377	6,995
2001	5,886	96,078	1,604	26,504	720	11,375
2002	7,360	107,553	1,738	27,237	742	9,395
2003	6,092	89,142	2,252	36,162	491	7,549
2004	5,609	88,725	1,896	30,667	713	11,776
2005	3,617	72,547	1,327	25,199	557	10,430
2006	3,575	67,546	1,169	24,714	400	7,754
2007	4,203	71,102	1,323	25,399	821	15,110
2008	3,860	64,022	1,929	29,003	727	11,867
2009p	2,799	49,369	1,379	24,740	1,152	20,960

*Others include between 38 and 64 other countries

Source: DFO Statistical Services Ottawa, **compilation** Gulf Region Policy and Economics Branch.

APPENDIX 8.
Scallop volumes and values from the other DFO Atlantic management regions

	Volume (mt of meat)				Value ($'000)			
Year	Quebec	Newfoundland and Labrador	Maritimes	Total	Quebec	Newfoundland and Labrador	Maritimes	Total
1990	437	116	9,167	9,719	3,836	624	79,494	83,954
1991	304	169	8,878	9,351	2,854	1,060	75,250	79,164
1992	326	833	9,684	10,843	3,064	4,760	91,497	99,321
1993	295	545	9,765	10,605	3,707	6,085	107,141	116,933
1994	296	900	9,473	10,669	4,424	12,710	116,829	133,963
1995	301	1,249	6,354	7,904	3,944	14,277	79,238	97,459
1996	301	1,469	5,018	6,787	3,916	18,166	61,098	83,180
1997	283	1,464	5,785	7,532	4,387	19,132	69,543	93,062
1998	327	839	6,043	7,209	4,945	11,288	72,621	88,854
1999	336	384	6,070	6,790	4,227	4,788	73,217	82,232
2000	284	347	9,571	10,202	3,815	4,227	109,722	117,764
2001	216	209	10,336	10,760	2,463	2,518	119,241	124,222
2002	150	125	11,190	11,466	1,472	1,058	127,028	129,558
2003	175	185	10,839	11,199	1,927	1,782	125,530	129,239
2004	140	526	9,152	9,817	1,610	5,805	109,869	117,284
2005	148	624	6,014	6,786	1,901	8,079	70,377	80,357
2006	133	282	7,118	7,533	1,686	3,346	80,930	85,962
2007	106	84	7,542	7,733	1,762	1,011	84,410	87,183
2008	100	54	7,869	8,023	1,471	763	88,457	90,691

Source: MPO Ottawa (http://www.dfo-mpo.gc.ca/stats/commercial/sea-maritimes-eng.htm), **compilation:** Gulf Region Policy and Economics Branch