Agenda Item 6.5
For decision

Council

CNL(11)16

Salmon Fishery at St Pierre and Miquelon

CNL(11)16

Salmon Fishery at St Pierre and Miquelon

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RÉPUBLIQUE FRANÇAISE

PREMIER MINISTRE

Secrétariat
Général de la Mer

Le Secrétaire général adjointe — Paris, le 18 mai 2011

N° 110 1/SGMER

Affaire suivie par Marie-Sophie DUFAU-RICHET
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Note
To

President of NASCO

Objet : Report for France in respect of saint-Pierre et Miquelon, season 2010.

In preparation for the next annual meeting of NASCO (Greenland, 4-6 June), the French authorities are pleased to confirm you that they have send by email of the 17th of may addressed to the secretariat the report for France in respect of St Pierre et Miquelon concerning the 2010 season, including :

- administrative information provided by the Pôle maritime (DTAM[1]) in Saint-Pierre et Miquelon

- scientific information provided by the Ifremer[2] representative in Saint-Pierre, with genetic analyses by Genindexe

In 2010, 9 professional and 57 recreational licenses were allocated. The campaign was rather short, and catches amounted to 2.780 metric tons: 0.680 lower compared to 2009. The share of recreational fishing in the total catches increased in 2010.

As we informed NASCO, delegates and observers last year, the sampling programme has been resumed. Sampling time allowed for some communication with fishermen on the conservation of breeding individuals. The scientific studies will be continued in 2011, and Ifremer plans to increase the size of the sample. Moreover, a workshop should be organized in 2011 – 2012

[1] *Direction of territories, Food and Sea*
[2] *French Research Institute for the Exploration of the Sea*

between French and Canadian scientists on salmon ageing, opening the way for more information on the age structure of the salmon population harvested in the French territorial waters. Last, human resources have been allocated for further freshwater studies in the fall of 2011.

Thus, France in respect of Saint-Pierre et Miquelon wishes to maintain its observer status in NASCO North American Commission and to develop scientific cooperation with your organization, keeping in mind that salmon fishing is a traditional, seasonal activity for this collectivity. Fish is mostly used for consumption in the family circle, and complements the income of a few professionals. Although the number of licenses is expected to remain relatively stable in the near future (in 2011, 9 professional and 58 recreational licenses have been allocated), fishing effort is likely to be lower as the increase of fuel price should act as a deterrent.

I wish you a successful meeting in Ilulissat.

Le Secrétaire général adjoint

Bruno PAULMIER

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PREFECT OF SAINT PIERRE AND MIQUELON

Department for Territories, Food and the Sea

Maritime Centre

Saint-Pierre, 26 April 2011

Head of the St Pierre and Miquelon Maritime Centre

To

The Director of Maritime Fisheries and Aquaculture
3 Place Fontenoy
75007 Paris

Our Reference: No. 75/PM/2011

Person responsible: Phillipe Museux
SAM-975@developpement-durable.gouv.fr
Tel: 05 08 41 15.30 – Fax: 05 08 41 48 34

RE: Report on the 2010 Salmon Fishery

Annual report on the Atlantic Salmon Fishery at Saint Pierre and Miquelon 2010 Season

1. Legislation

Salmon fishing in the St Pierre and Miquelon archipelago is regulated by decree No 87-182 of 19 March 1987, implemented under the Order of 20 March 1987.

This legislation establishes the following:

- The fishery is under license and subject to an Annual Fishery Plan
- The minimum capture size is 48cm
- Nets must be declared and marked
- The minimum mesh size is 125mm
- The fishery season is restricted to 1 May – 31 July
- It is not permissible to place fishing gear within 300m of a river mouth.
- Restricted fishing effort:
  - 3 x 360m nets for professional fishermen
  - 1 x 180m net for recreational fishermen
  - All catch must be declared (through annual declarations and a fishing log)

2. Permit allocation

Fishing permits are allocated to professional fishermen (who may sell their catch) and recreational fishermen (who are not authorised to sell their catch).

The allocation procedure is based on fishery precedence and on respect for the obligation to declare catch throughout the previous year.

The Department for Maritime Affairs deals with permit applications and allocates each permit holder with a specific site to fish for the entire season. This fishery site plan is published by Order of the Prefect.

In 2010, 9 professional permits were issued (8 in 2009) and 57 recreational permits were issued (50 in 2009). The total number of permits has increased compared to the previous two years (64 in 2008, 58 in 2009 and 66 in 2010).

3. Salmon Catch

The total 2010 catch stands at:

Professional catch: 205 salmon caught weighing 1002kg (1864kg in 2009).
Recreational catch: 1780kg (1600kg in 2009). 768 salmon were caught, compared to 819 in 2006, 470 in 2007, 933 in 2008 and 748 in 2009.

748 salmon were caught (819 in 2006, 470 in 2007 and 933 in 2008)

The total weight of the catch was 2782kg (3464kg in 2009 and 3450kg in 2008) and fishing effort remains low.

The 768 salmon caught by 57 recreational boats averages around 14 salmon per recreational fisherman. It should also be noted that many boats only fish for a very short period and bring their nets in well before the end of the permitted season, as their catch is sufficient for them and their immediate circle.

	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Professional Fishery										
No. of licenses	10	12	12	13	14	13	13	9	8	9
Catch volume	**1544**	**1223**	**1620**	**1499**	**2243**	**1730**	**970**	**1604**	**1864**	**1002**
Recreational Fishery										
No. of licenses	42	42	42	42	52	52	53	55	50	57
Catch Volume	**611**	**729**	**1272**	**1285**	**1044**	**1825**	**1062**	**1846**	**1600**	**1780**
Total catch	2155	1952	2892	2784	3287	3855	2032	3450	3464	2782

There is no export of salmon and all salmon caught are consumed on the local market. Most salmon caught are retained for personal consumption, while only a few are sold to restaurants or individuals through a local fishmonger.

It should be noted that there is no fishing for salmon in the archipelago's rivers.

Ifremer Office
Saint-Pierre and Miquelon

Goraguer Herlé, Ifremer Saint Pierre and Miquelon
....
February 2010- Délégation SPM-11/01

Report on the biological observations made on the Atlantic salmon (*Salmo salar*) catch during the 2010 fishery at St Pierre & Miquelon

Contents

Cover photo: Salmon biometry

(copyright: Ifremer Herlé Goraguer)

Introduction:

Sampling of the Atlantic salmon catch at St Pierre & Miquelon re-commenced in 2010, in response to a request from the Délégation Générale à l'Outre-Mer, and in order to provide NASCO with recent information on the catch at St Pierre & Miquelon. Sampling had been suspended during 2009 due to the absence of an IFREMER agent.

The sampling carried out by IFREMER enables biometric monitoring to be undertaken, the weight and length of the fish to be recorded and tissue samples to be taken in order to determine the origin of the catch. Scale samples are also taken in order to determine the age of the fish.

I – Legislation

The salmon fishery at St Pierre & Miquelon is operated under the management and fish resource conservation measures which are contained in the Order of 20 March 1987, implemented under the decree No 87 – 182 of March 1987.

Article 11. Fishing for Atlantic salmon (*Salmo salar*) in the archipelago's waters is forbidden each year between 1 January and 30 April, and from 1 August to 31 December.

With regard to the location of fishing sites, priority will be given to professional fishermen who will be granted 2 sites per boat. One site per recreational fishing boat will be granted.

Where there is competition between two or more fishermen for one site, the Head of the St Pierre & Miquelon Maritime Affairs Office will draw lots. The draw will be held in the presence of the interested parties. The competing parties will then fish the site in rotation.

Article 12. The total length of authorised salmon fishing nets will not exceed one thousand and eighty metres for professional fishermen and one hundred and eighty metres for recreational fishermen.

Each individual net for use by professional fishermen will not exceed three hundred and sixty metres.

It is forbidden to place any part of a net within 360m of the mouth of any water-course in which salmon may spawn (Belle Rivière, Dolisie), or within 200m of any part of another net.

Where a net becomes displaced, the permit holder has 48 hours to reposition the net correctly. Nets must not be left unattended during a period of 5 consecutive days.

Article 13. Salmon fishermen must register their catch on their fishing log immediately after bringing said catch on board their boat.

This fishing log must be made available on request and should be sent to the Maritime Affairs Office before 1 September each year.

2 – Permit Allocation

In 2010, 9 professional permits were allocated, which is one more than in 2009. 57 recreational permits were issued in 2010, which is an increase from 2009. Figure 1 below shows the changes in permit allocation for both types of fishing since 1995

Fig 1- The number of Atlantic salmon fishing permits issued between 1995 and 2010 at St Pierre & Miquelon.
Source : Maritime Affairs, Saint-Pierre

It should be noted that despite the increase in the total number of permits issued since 2007, fishing effort taken as the maximum authorised length of nets has fallen by 15.5% between 2007 and 2010 (23,580m in 2007 compared to 19,980m in 2010). This is essentially due to the fact that fewer professionals with the right to place 1080m of net are fishing, and the limit of 180m of net for recreational fishermen.

3 – The location of fishing sites

The majority of fishing sites are located close to the island of St Pierre, to the South-East of the island and are mainly used by recreational fishermen.

Nets may be placed at the following sites:

Cap Noir, Ile aux Chasseurs, Les Flacous, Cap à Gordon, Les Canailles, Cap Bleu, Ile Pelée, Anse à la Vierge, Anse de l'Ouest, Rochers de l'Est, Caillou aux Chats, Basse Gélin, Basse des Grappins, Ile aux Vainqueurs, Pointe Blanche, Enfant Perdu, Cap Percé, Pointe Anse à Pierre, Cap aux Morts, Ilot Noir, Mirande, Trou aux Renards, Cap à Dinan, Basse Tournioure (see Annex 1 for a map of the main fishing areas around the Archipelago).

4 – Fishing gear

The fishing gear used generally consists of 3 or 4 nets joined together. Made in Canada, they are tied with a 60/100mm diameter polyamide monofilament thread. The thread is bottle-green in colour for nets with a stretched mesh size of 5 inches (125mm). It should be noted that all the nets used cannot be strictly identical.

The maximum authorised net length is 3 x 360m for professionals and 180m for recreational fishermen.

5– Sampling of the 2010 landings

Sampling was possible on 9 occasions during the fishing season from the beginning of June to mid July.

A total of 57 gutted salmon were measured and weighed according to protocol.

Adipose fin samples were taken for genetic analysis, and scale samples were taken in order to determine the age of 51 individual fish.

Mr Phillipe Gueguen, from the Coastal Unit of Maritime Affairs was present at two of the samplings, between 0600 and 0800hrs, when the boats arrive and depart. Otherwise, sampling was usually carried out by local fishmongers who inform IFREMER as soon as 10 or more salmon are supplied to the establishment.

	2003	2004	2005	2006	2007	2008	2009	2010
Number of Samplings	12	11	8	19	1	2	None	9
Date of the first sampling	04 June	05 June	06 June	06 June	14 June	09 June		10 June
Date of the last sampling	06 July	29 June	23 June	04 July	14 June	16 June		07 July
Total weight sampled(kg)	872	837	718	926	49	218		163
Number sampled	340	355	310	391	12	68		57
Number weighed	340	355	310	391	12	68		57

Table 1 – Sampling operations carried out at St Pierre & Miquelon between 2003 and 2010.

6 – Salmon catch in 2010

According to the catch declared to Maritime Affairs in 2010, total catch stands at 2,780kg of whole fish, a decrease of 680kg compared to 2009. The conversion ration used to obtain the gross weight figure is 1:1.5.

Professional catch accounts for 36%, and recreational catch 64%, of the total catch.

In 2009, professional catch accounted for 54% and recreational catch 46% of the total catch.

Figure 2 shows the landings by fishing type since 1990, and figure 3 shows the total accumulated weight.

Fig 2- Atlantic salmon catch between 1990 and 2010 at St Pierre & Miquelon.
Source : Maritime Affairs, Saint-Pierre

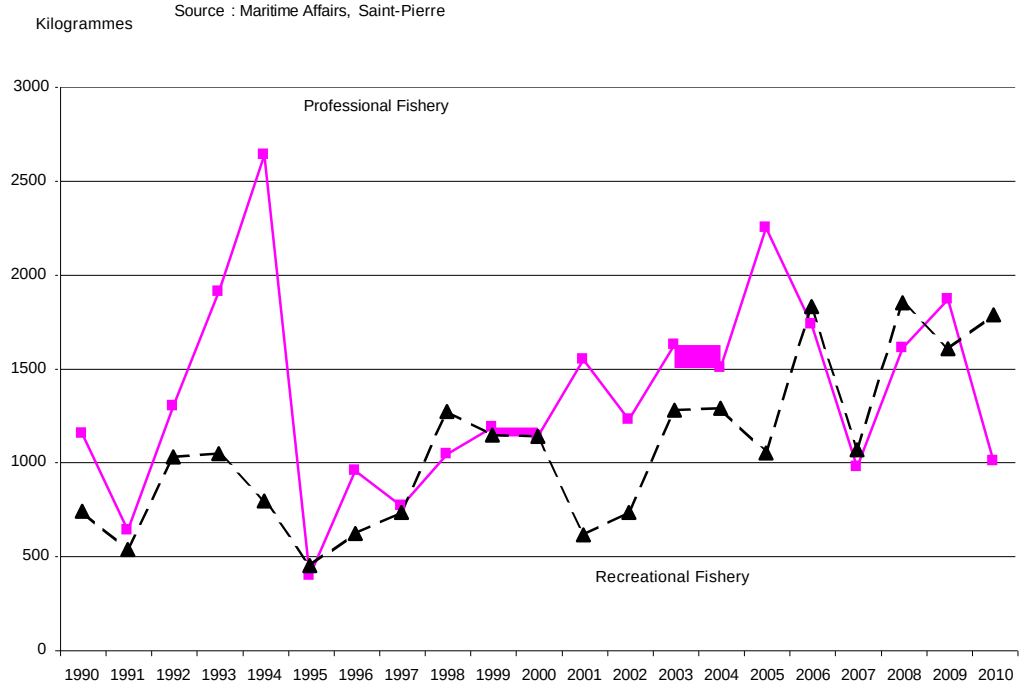
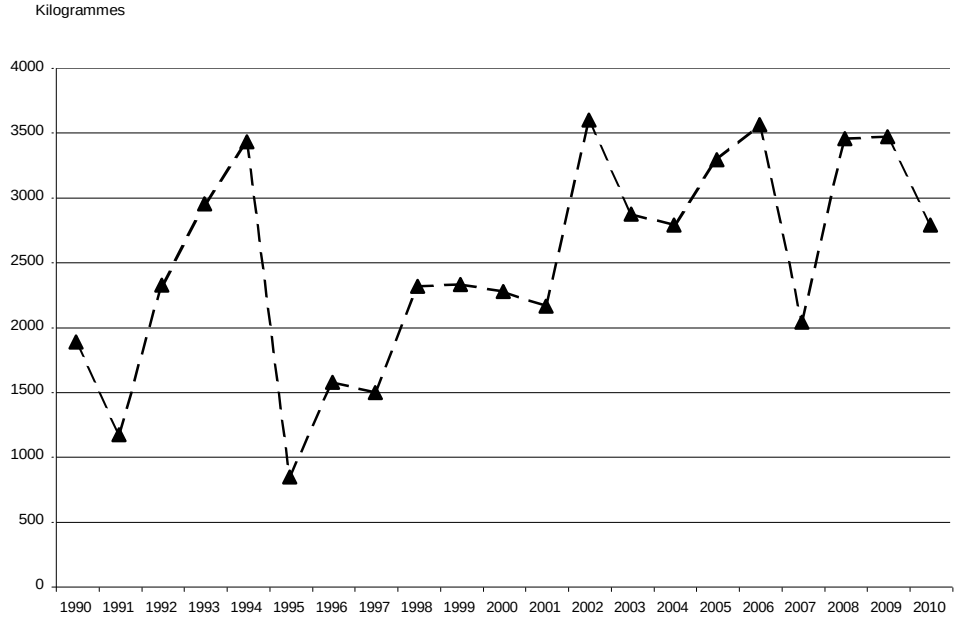
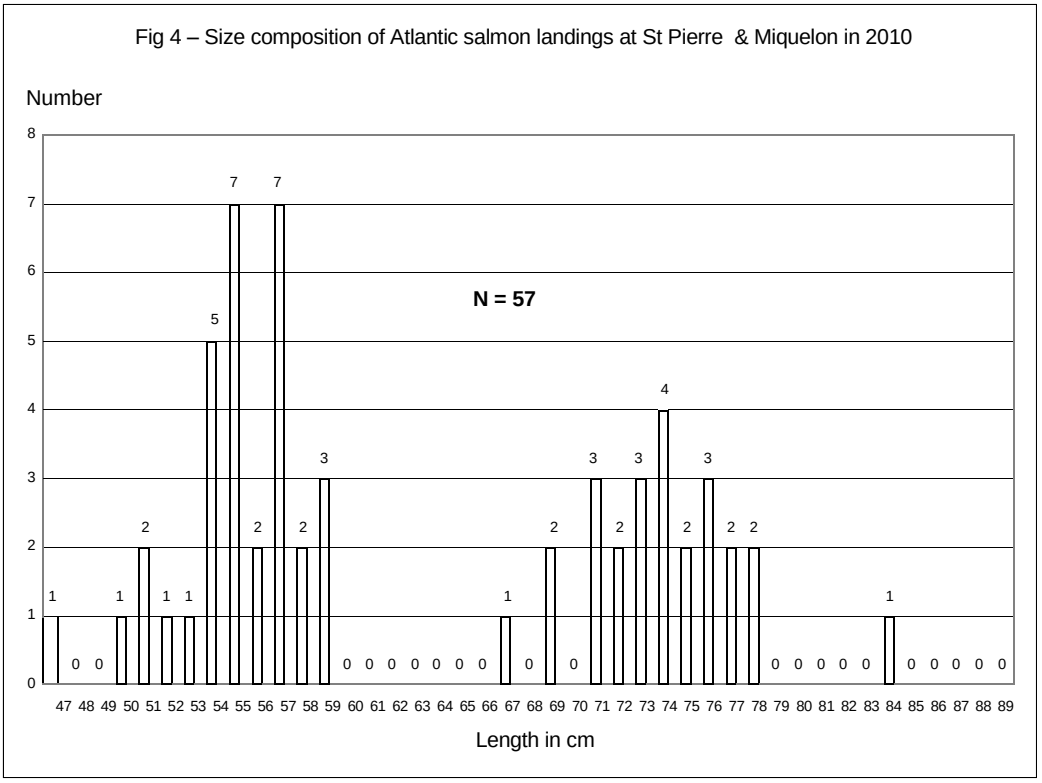


Photo 2 : Measuring salmon in the workshop (copyright: Ifremer)

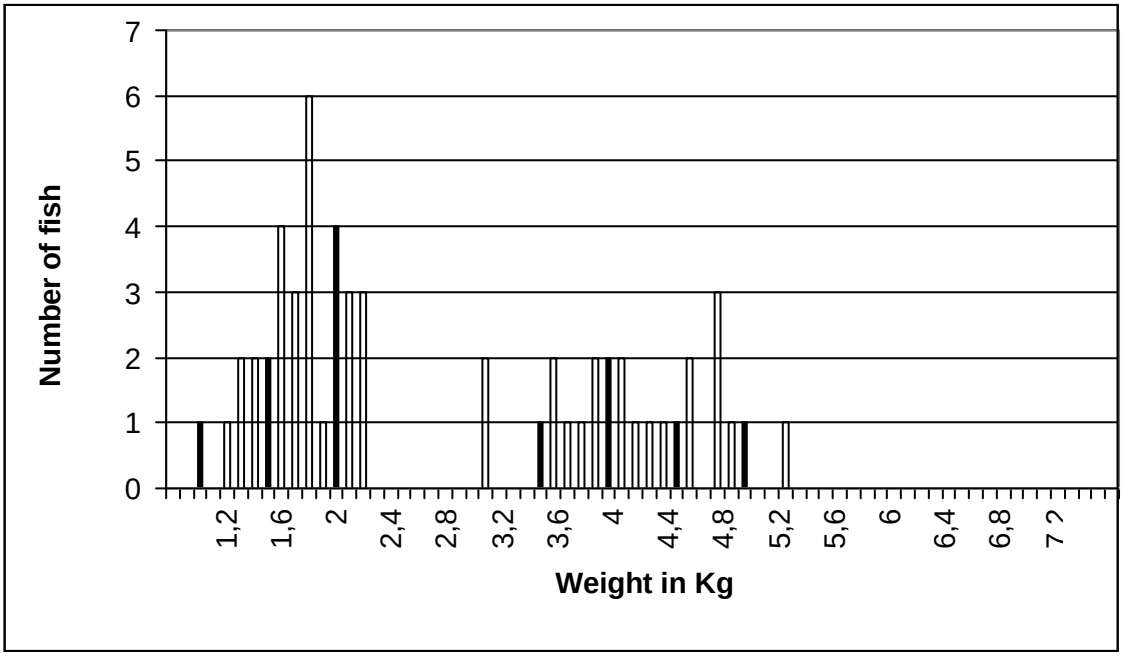
Fig 3- Accumulated Atlantic salmon catch at St Pierre & Miquelon between 1990 and 2010.
Source : Maritime Affairs, Saint-Pierre





The average size is 63cm. The smallest size observed was 47cm and the largest was 84cm.

Figure 5- Weight composition of the 2010 landings



The average weight is 2,680g (gutted weight), the minimum weight observed was 1,080g and the maximum was 5,390g.

7 – Water Temperature

As the office did not have the correct equipment during the sampling period, water temperature data was not recorded.

However, an approximation can be made by looking at the data continually recorded at a station in Miquelon harbour. The temperatures recorded there in 2010 were similar to those recorded in previous years.

8 – Genetic study

51 adipose fin samples were taken from the salmon sampled in 2010 for genetic identification using their DNA imprint. Comparing the profiles using a genetic database allows the origin of each fish to be determined. This work was carried out by the Genindexe Laboratory in La Rochelle (the full results of the analysis are contained in Annex 2).

3 profiles (or 6%) indicated US origin, while the other 48 profiles (94%) identified indicated Canadian origin.

A previous genetic study of 25 fish, carried out in 2004, showed that the salmon sampled at that time were mainly of Canadian origin.

9 – Scale Study

51 scale samples were taken in order to determine the age composition of the salmon. These samples were sent to IFREMER's National Sclerochronology Centre in Boulogne sur Mer which will carry out the analysis. The results are not yet available at the time of writing. Collaboration with a DFO laboratory in Canada is planned in order to best determine the age of the sampled salmon.

10–Parasite study

3 of the 51 fish sampled displayed ectoparasitosis. The parasite is likely to be the sea louse, an external copepod parasite, potentially the *Lepeophtheirus salmonis* species (see photo below).

Photo 3: A salmon with ectoparasites (Copyright : Ifremer Herlé Goraguer)

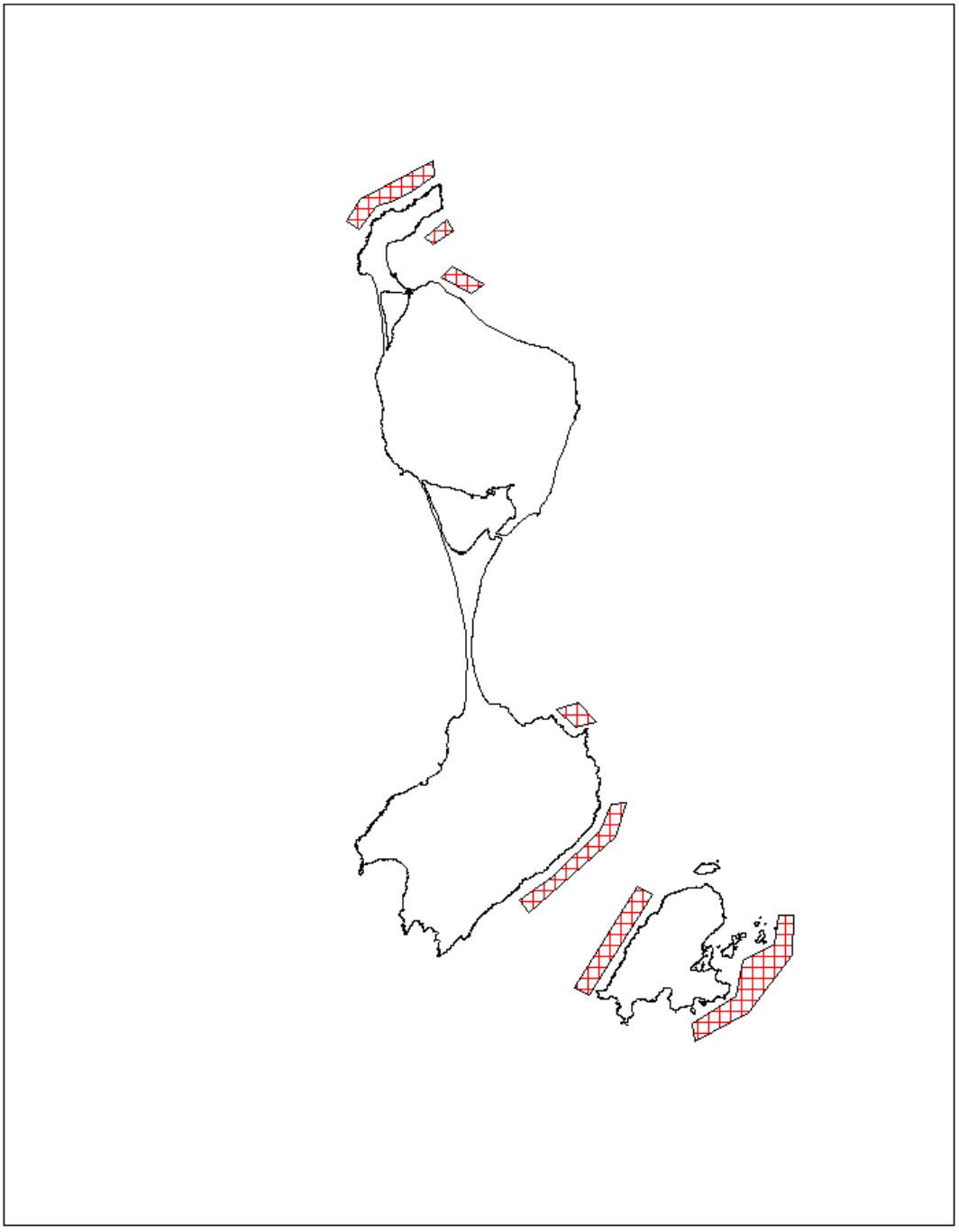
11– Conclusion

Despite potentially lasting 3 months, the 2010 fishing season was much shorter. In fact, many recreational fishermen wait for catches to begin before placing their nets in the water, as fishing requires a significant financial investment, especially in fuel. It is therefore possible that, as they would say, "the big fish have already gone past" when they place their nets.

Most fishermen had removed their nets by the beginning of July as they were no longer making any significant catch. This fishing season was considered to be poor.

The genetic study shows that all the salmon sampled were of North American origin and the majority were of Canadian origin.

SALMON FISHING AREAS
SAINT-PIERRE AND MIQUELON



Annex 1: Location of the main fishing areas in St Pierre and Miquelon during the 2010 season.

Annex 2: Report of the Laboratoire d'Analyses Genetiques Genindexe Analysis

ANALYSIS REPORT

Description of the Request

Date of receipt: October 2010

Nature of Sample: 51 *Salmo salar* adipose fin samples

Test requested: Genetic identification by DNA imprint and comparison to genetic database for population assignation.

GENINDEXE
6, rue des Sports
17000 La Rochelle

Téléphone : 33(0)5 46 30 69 66
Fax : 33(0)5 46 30 69 68
E-mail : contact@genindexe.com
http://www.genindexe.com

Methodology

The samples were received in the laboratory.
Each sample was identified using a unique internal code between SSA2663 and SSA2713 (individuals referenced from 01 to 51).

The genetic material for each individual was then extracted and purified according to the laboratory's current methods.
The genetic profiles of the individuals were created using the following SALSEA microsatellite markers:

- Ssa14
- Ssa197
- Ssa202
- Ssa289
- SsaD144
- SsaD157
- SsaD486
- SsaF43
- Sssp1605
- Sssp2201
- Sssp2210
- Sssp2213
- Sssp2215
- SsspG7
- SsosL85

In each series of genetic amplification, the following controls were introduced in addition to the DNA extracts from the individuals to be analysed:

- Negative PCR control (blank PCR)
- Extraction control
- Positive PCR control (DNA taken from an individual whose genotype is known and has been standardised)

The profiles obtained will be compared to those in the database in order to assign the population. The profiles will be compared to the following populations:

USA: Maine, Narraguagus
USA: Maine, Penobscot
Canada: New Brunswick, Tobique

Canada: Quebec, Ste Marguerite
Canada: Quebec, Ste Anne
Canada: Quebec, Malbaie
Iceland: Sudurland, Nupsa
Iceland: Vesturland, Langa
Iceland: Nordurland, Laxa i Adaldal
Scotland: R Don
Scotland: R Almond
Scotland: Coulin
England: R Dart
Wales: R Dee
France: Allier
France: Sée
Russia: Neva
Russia: Ponoi
Russia: Pulonga
Russia: Varzuga
Finland: Simojoki
Finland: Tornionjoku
Norway: Komag
Norway: Repparfjord
Norway: Figgjo
Norway: Pechora
Norway: Saltdaselva
Sweden: Atran
Denmark: Skejrn
Spain: R Stella
Spain: R Narcea
Ireland: Boyne
Ireland: Blackwater
Ireland: Dawros

Results of the Analyses

The samples were genotyped according to 16 markers. The positive control showed a complete and true profile. The negative controls gave no signals.

The profiles obtained are shown in Table 1 below.

Genindexe
Laboratoire d'Analyses Génétiques

	Ssa14	Ssa14	Ssa171	Ssa171	Ssa197	Ssa197	Ssa202	Ssa202	Ssa289	Ssa289	SsaD144	SsaD144	SsaD157	SsaD157	SsaD486	SsaD486	SsaF43	SsaF43	SSsp1605	SSsp1605	SSsp2201	SSsp2201	SSsp2210	SSsp2210	SSspG7	SSspG7	SsosL85	SsosL85	SSsp2213	SSsp2213	SSsp2215	SSsp2215
SSA-2663	145	145	240	240	0	0	0	0	0	0	225	233	330	354	0	0	127	127	0	0	304	352	112	112	0	0	199	199	186	190	163	175
SSA-2664	141	141	252	252	167	207	302	302	118	118	181	237	346	362	175	187	111	131	252	252	280	280	112	116	191	199	195	195	194	198	171	175
SSA-2665	145	145	256	268	175	215	278	294	118	118	213	261	374	398	171	175	117	123	234	238	284	284	112	112	183	191	191	193	202	202	163	167
SSA-2666	145	145	228	264	171	171	294	310	118	118	181	205	378	378	175	187	117	127	234	238	276	328	132	160	175	187	179	191	154	206	163	167
SSA-2667	141	145	246	254	171	171	270	282	118	118	181	217	350	358	171	187	127	127	234	258	300	324	112	112	227	227	181	191	194	198	133	175
SSA-2668	145	145	244	260	167	179	302	318	118	118	0	0	378	394	171	175	0	0	242	246	0	0	112	132	199	203	0	0	0	0	163	163
SSA-2669	145	145	250	266	183	187	294	306	118	118	161	225	370	382	187	191	117	117	238	258	276	316	112	124	179	191	191	195	162	194	167	167
SSA-2670	145	145	246	258	171	175	286	298	118	124	217	257	358	386	171	171	123	135	234	238	312	336	112	124	127	219	195	201	182	210	159	163
SSA-2671	145	147	218	248	167	175	282	306	118	118	161	233	330	338	171	199	107	117	238	246	356	360	112	112	187	191	179	199	186	210	171	175
SSA-2672	141	145	242	246	179	191	278	278	118	124	185	193	378	398	171	175	105	117	246	246	304	312	112	120	183	199	187	191	182	182	159	163
SSA-2673	141	145	224	246	171	179	262	278	118	118	221	257	334	354	187	195	117	117	258	258	316	316	112	120	191	215	179	185	190	206	159	159
SSA-2674	141	145	236	248	171	171	274	302	118	122	213	221	366	366	171	187	117	127	230	234	312	320	112	132	175	195	179	197	190	190	155	175
SSA-2675	0	0	0	0	0	0	0	0	0	0	181	201	0	0	0	0	117	143	0	0	292	328	0	0	0	0	195	195	194	194	0	0
SSA-2676	141	145	230	254	163	175	290	306	118	122	0	0	334	426	187	191	117	117	230	246	0	0	124	124	179	183	181	191	194	194	159	159
SSA-2677	141	145	242	258	167	179	274	302	118	118	209	221	358	410	171	179	117	127	230	230	288	312	136	136	183	203	185	191	170	202	163	167
SSA-2678	141	145	224	268	175	179	306	310	118	118	209	209	370	406	171	195	117	143	230	238	324	376	124	132	183	191	195	197	194	214	147	167
SSA-2679	145	145	266	278	171	171	278	290	118	118	197	241	338	370	171	183	117	117	230	238	288	320	112	112	167	167	181	191	178	198	163	187
SSA-2680	141	145	234	242	191	195	278	286	118	118	185	209	350	382	175	191	117	117	230	238	332	332	112	132	195	199	181	185	190	194	151	187
SSA-2681	141	141	224	260	179	219	298	310	118	122	125	181	386	398	171	199	117	131	230	246	292	364	112	132	179	199	191	195	194	202	117	187
SSA-2682	141	145	234	244	167	179	294	298	118	118	209	229	362	398	171	171	117	123	230	246	284	324	112	112	195	195	181	191	174	186	163	175
SSA-2683	141	141	248	248	171	175	282	310	118	118	201	201	350	402	175	195	117	127	234	234	300	336	112	152	135	135	179	195	170	198	147	167
SSA-2684	145	145	230	234	183	183	298	310	118	124	217	249	342	358	171	171	117	117	234	258	288	336	132	136	175	187	179	187	170	190	151	179
SSA-2685	141	145	238	238	171	171	286	314	118	118	185	257	386	414	175	175	117	117	234	238	308	328	112	112	167	179	183	187	194	198	171	187
SSA-2686	145	145	234	270	163	207	294	310	124	124	205	209	342	354	171	171	127	127	242	246	344	344	112	136	187	191	179	185	174	190	163	163
SSA-2687	141	141	242	242	179	183	306	310	118	118	193	205	0	0	175	191	111	117	234	234	284	316	112	136	179	179	197	203	182	190	163	179
SSA-2688	141	145	230	234	183	199	250	282	118	118	221	237	346	374	175	175	117	127	230	246	304	308	112	136	183	211	181	195	178	190	141	151

Genindexe
Laboratoire d'Analyses Génétiques

	Ssa14	Ssa14	Ssa171	Ssa171	Ssa197	Ssa197	Ssa202	Ssa202	Ssa289	Ssa289	SsaD144	SsaD144	SsaD157	SsaD157	SsaD486	SsaD486	SsaF43	SsaF43	SSsp1605	SSsp1605	SSsp2201	SSsp2201	SSsp2210	SSsp2210	SSspG7	SSspG7	SsosL85	SsosL85	SSsp2213	SSsp2213	SSsp2215	SSsp2215
SSA-2689	141	141	242	254	171	175	306	310	118	118	193	257	330	346	171	175	117	117	234	238	316	336	112	136	175	175	181	191	182	186	163	175
SSA-2690	145	145	236	238	171	183	294	306	118	118	185	201	354	362	179	195	117	127	230	234	280	332	112	136	179	203	193	199	190	198	159	171
SSA-2691	141	145	240	242	183	195	250	282	118	118	193	225	382	382	171	175	117	127	238	246	288	304	112	112	175	187	185	195	198	210	171	179
SSA-2692	0	0	0	0	171	187	310	310	118	118	197	257	0	0	171	175	117	127	0	0	308	324	0	0	175	203	179	179	148	148	0	0
SSA-2693	141	141	240	254	171	171	286	314	118	118	185	205	374	390	175	175	127	129	234	238	320	278	112	132	167	179	193	203	170	170	155	167
SSA-2694	141	145	224	234	163	207	294	310	124	124	201	201	366	382	171	171	117	117	242	246	320	324	124	136	187	191	181	195	194	194	159	187
SSA-2695	145	145	240	242	0	0	0	0	0	0	217	217	386	386	0	0	117	131	0	0	336	372	128	136	0	0	179	179	162	162	163	163
SSA-2696	145	145	232	240	183	199	250	250	118	118	193	217	350	358	175	175	117	129	230	246	276	356	112	128	183	211	179	191	178	182	159	175
SSA-2697	141	145	244	250	171	175	282	306	118	118	165	205	370	370	171	175	117	117	234	238	300	344	112	112	175	175	179	199	170	190	167	167
SSA-2698	141	145	232	244	171	183	294	306	118	118	185	205	362	378	179	195	117	123	230	234	288	296	112	112	179	203	195	197	162	186	155	155
SSA-2699	145	145	254	260	183	195	250	282	118	118	193	205	366	398	171	175	117	127	238	246	308	332	112	152	175	187	179	191	174	186	163	167
SSA-2700	145	145	238	238	187	187	310	310	118	118	241	249	0	0	171	175	117	127	0	0	308	360	124	132	175	203	179	179	186	186	167	171
SSA-2701	141	145	224	242	139	171	298	306	118	118	197	237	342	378	171	175	117	117	234	234	284	312	132	160	175	179	179	179	148	148	175	175
SSA-2702	141	145	228	234	179	195	286	294	118	118	209	213	350	350	175	195	111	117	242	242	284	316	124	128	187	187	191	191	170	174	151	191
SSA-2703	145	145	248	260	171	171	278	298	118	118	241	245	342	374	175	187	117	123	258	262	356	356	140	140	183	183	187	187	190	198	163	171
SSA-2704	141	145	234	258	175	195	0	0	118	124	197	241	0	0	171	175	117	123	0	0	288	372	112	136	199	207	185	191	182	202	159	167
SSA-2705	145	145	210	224	127	179	0	0	118	118	205	213	342	342	171	175	117	125	0	0	248	348	112	112	147	183	0	0	178	186	171	171
SSA-2706	145	145	224	240	167	183	294	298	124	128	249	261	378	414	175	195	117	123	242	254	300	320	124	132	191	207	179	181	170	210	167	167
SSA-2707	145	145	240	246	187	215	290	314	118	118	193	205	350	394	175	191	117	117	238	250	308	340	112	112	183	183	189	191	178	186	163	163
SSA-2708	145	145	216	246	175	183	282	306	118	124	217	241	350	374	171	171	127	129	238	258	300	332	112	124	191	215	183	187	182	202	167	171
SSA-2709	141	145	240	252	167	191	282	298	118	118	209	245	362	394	171	187	117	129	238	246	344	360	112	128	191	195	185	191	174	190	163	179
SSA-2710	145	145	236	246	179	179	294	298	118	118	205	221	366	394	171	175	117	117	230	250	312	364	112	112	143	183	183	197	206	218	159	159
SSA-2711	145	145	224	256	0	0	0	0	0	0	241	241	362	386	0	0	111	127	0	0	284	360	112	112	0	0	183	191	186	190	163	163
SSA-2712	141	145	238	254	183	211	262	294	118	124	241	261	350	370	179	187	117	119	234	238	296	316	120	136	175	179	191	191	178	182	167	183
SSA-2713	145	145	232	244	179	179	306	306	118	118	165	193	370	374	171	171	117	127	234	238	272	276	136	136	179	211	181	187	174	194	133	151

Tableau 1 : Genotypes obtained in the 51 adipose fin samples. The figure 0 means that the sample could not be interpreted using the given markers.

Conclusions

Genetic profiles of individual fish were created, analysed and compared to our genetic database.

INTERNAL CODE	INDIVIDUAL	ASSIGNATION
SSA-2663	1	CAN-STE-ANNE
SSA-2664	2	CAN-STE-MARGUERITE
SSA-2665	3	CAN-STE-ANNE
SSA-2666	4	CAN-STE-ANNE
SSA-2667	5	CAN-STE-ANNE
SSA-2668	6	CAN-STE-ANNE
SSA-2669	7	CAN-STE-ANNE
SSA-2670	8	USA-PENOBSCOT
SSA-2671	9	CAN-STE-ANNE
SSA-2672	10	CAN-STE-ANNE
SSA-2673	11	CAN-STE-MARGUERITE
SSA-2674	12	CAN-TRINITE
SSA-2675	13	CAN-TRINITE
SSA-2676	14	CAN-TRINITE
SSA-2677	15	CAN-STJEAN
SSA-2678	16	CAN-STE-MARGUERITE
SSA-2679	17	CAN-STJEAN
SSA-2680	18	CAN-TRINITE
SSA-2681	19	CAN-TRINITE
SSA-2682	20	CAN-STE-ANNE
SSA-2683	21	USA-NARRAGUAGUS
SSA-2684	22	CAN-TRINITE
SSA-2685	23	CAN-STJEAN
SSA-2686	24	CAN-STE-ANNE
SSA-2687	25	CAN-STE-ANNE
SSA-2688	26	CAN-TRINITE
SSA-2689	27	CAN-TRINITE
SSA-2690	28	CAN-STE-ANNE
SSA-2691	29	CAN-STE-ANNE
SSA-2692	30	CAN-STE-ANNE
SSA-2693	31	USA-NARRAGUAGUS
SSA-2694	32	CAN-STE-ANNE
SSA-2695	33	CAN-STE-MARGUERITE
SSA-2696	34	CAN-STE-ANNE
SSA-2697	35	CAN-STJEAN
SSA-2698	36	CAN-TRINITE
SSA-2699	37	CAN-TRINITE
SSA-2700	38	CAN-STJEAN
SSA-2701	39	CAN-STE-ANNE
SSA-2702	40	CAN-STE-ANNE
SSA-2703	41	CAN-STJEAN

INTERNAL CODE	INDIVIDUAL	ASSIGNATION
SSA-2704	42	CAN-TRINITE
SSA-2705	43	CAN-STJEAN
SSA-2706	44	CAN-STE-ANNE
SSA-2707	45	CAN-STJEAN
SSA-2708	46	CAN-STJEAN
SSA-2709	47	CAN-STE-ANNE
SSA-2710	48	CAN-STE-MARGUERITE
SSA-2711	49	CAN-STE-MARGUERITE
SSA-2712	50	CAN-TRINITE
SSA-2713	51	CAN-STE-ANNE

Table 2 : Assignation test results

The profile comparisons indicate that the majority of fish analysed are similar to Canadian populations. Table 2 shows the assignation test results of the 51 fish analysed.

La Rochelle, 15 November 2010

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