

**PRESENTATION**  
**BY THE**  
**ASSOCIATION DES PÊCHEURS PROPRIÉTAIRES**  
**DES ÎLES-DE-LA-MADELEINE**

**SUGGESTIONS AND APPROACH**  
**ON**  
**LOBSTER CONSERVATION**  
**IN THE MAGDALEN ISLANDS**  
**AREA 22**

---

*APRIL 2006*

## *The organization*

Last fall, the Association des pêcheurs propriétaires des Îles-de-la-Madeleine officially celebrated its **30<sup>th</sup> anniversary**. This makes it the oldest chartered organization in Quebec representing professional fish harvesters.

Based on 2003 data released by the Canadian Council of Professional Fish Harvesters, Canada had 114 associations with fewer than 200 fish harvesters and only 25 associations with more than 200 fish harvesters. The Association des pêcheurs propriétaires des Îles-de-la-Madeleine, with fishing operations that have been voluntary members for many years, is one of these 25 associations in Canada with more than 200 members. In Quebec, it ranks first in terms of the number of fish harvesters if we disregard the Alliance des pêcheurs professionnels in which it constitutes the largest component.

There are approximately 1,000 professional fishing operations in Quebec with gross income from fishing exceeding \$8,000, based on the latest data from Fisheries and Oceans Canada (DFO). The Association des pêcheurs propriétaires des Îles-de-la-Madeleine alone represents one third of these professional fishing operations in Quebec. Landings by our fish harvesters totalled \$33 million in 2005, almost 23 percent of the value of all fisheries products landed in Quebec. Landings of lobster in the Islands represented 74 percent of the total value in Quebec for this species in 2005.

In the Magdalen Islands, the Association des pêcheurs propriétaires describes itself by the triple 80 rule, a voluntary membership exceeding 80 percent of professional fish harvesters in the territory, landings accounting for more than 80 percent of volume for the Islands, and market value at landing equalling almost 80 percent of fisheries revenue for the archipelago. A thousand people work on our vessels alone with the launch of the lobster fishery.

## *Conservation: A concern from the outset*

In the mid-1970s, fear of over-fishing for lobster (*Homarus americanus*) through harvester recruiting was prevalent in Canada and the United States following several years of declining landings.

With this in mind, coupled with a collective determination to manage lobster in the Magdalen Islands, the Association des pêcheurs propriétaires was founded in 1975. In particular, lobster stocks in the Islands, after remaining stable around 3 million pounds during the 1960s, suddenly dropped to about 2 million pounds. Given the conservation measures at the time, the high number of fish harvesters posed a threat to stability of the resource and survival of the fishing operations, according to the Association. Our association therefore took its first steps by reducing the number of fish harvesters and restricting access to the lobster fishery.

The involvement of our organization and the fish harvesters it represents in implementing lobster conservation measures therefore dates back to long before Fisheries and Oceans Canada transferred fisheries administration back to Quebec in 1983.

However, the Association's first 10 years did not meet the hopes generated at its founding despite the tireless work of the dedicated volunteer administrators or seasonal employees during that period. When a cap of 300 was placed on lobster licences for the Magdalen Islands, the Department of Industry, Trade and Commerce, which was responsible for fisheries, decided to raise the number of licences to 320 in 1978 and 325 after that, due in particular to a high number of applications, about 40!

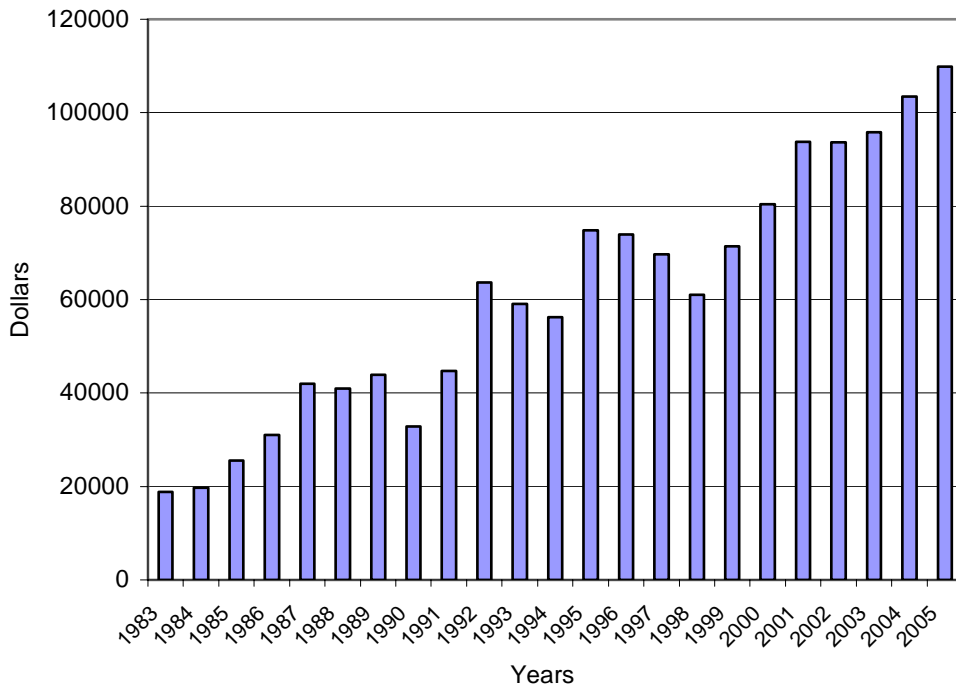
In one fell swoop, with no concern for internal growth in fishing effort (fishing techniques, improved tackle, increased efficiency of gear, etc.), the department responsible for fisheries added 7,500 traps to the seabed, theoretically increasing the fishing effort by at least eight percent. The partial recovery in landings from 2.0 to 2.4 million pounds was attributable in large part to these new entrants. The economic status of each fishing operation therefore did not necessarily improve.

It took a relaunch of the Association in 1985, that led to the hiring of a permanent employee and a call for fish harvesters to close ranks, before we saw a significant rise in income for lobster fishing operations. First, the Association intervened at various levels to stimulate the profitability of fishing operations, and second, the fish harvesters refined their fishing practices supported by new technology and more favourable environmental conditions. From 1985 to 1995, lobster landings rose from 2.5 million pounds to more than 6 million pounds in 1992, after which they plummeted sharply. This slide stopped in 1997, 1998 and 1999 at four million pounds, thanks in our opinion to a new series of conservation measures. The conservation measures added between 1996 and 2005 included an escape space for small lobsters, a ban on Sunday fishing, elimination of large traps, and recently, an increase in the minimum legal size to 83 millimetres, which is now recognized as very important.

This was followed by a rise in landings of one million pounds, from 4 million to more than 5 million pounds in the past two years, 2004 and 2005. The conservation measures taken by the Association, combined with its actions to raise local prices following implementation a few years earlier of the first joint fisheries plan in Quebec, boosted gross average income from lobster per fishing operation in recent decades, as shown by the chart below.

We should also point out that the actions of the Association des pêcheurs propriétaires have also had a major impact on the value of lobster fishing operations, which rose from about \$20,000 in 1985 to about \$300,000 dollars in 2005.

### Gross annual income of lobster harvesters in the Magdalen Islands



### *Conservation framework (1995)*

After peaking in 1992, lobster landings subsequently declined. We were the first and main organization to demand, starting at the end of the 1993 season, that the Fisheries Resource Conservation Council (FRCC) focus on the lobster resource.

We sought a greater role in conservation and management decisions without challenging the management system based on protective measures (minimum sizes and release of egg-bearing females) and on input controls (limited participation and number of traps).

The FRCC review led to new awareness in several areas of concern:

- ❖ Large catches essentially targeting immature recruits;
- ❖ Increased fishing pressure;
- ❖ Inadequate enforcement of regulations;
- ❖ Dependence on scientific work despite limitations of the studies conducted.

FRCC recommended conservation measures to increase spawning rates and significantly reduce harvest rates and actual fishing effort.

The selected approach provided a tool box containing various conservation measures designed to:

- ❖ increase spawning rates;
- ❖ reduce harvest rates and actual fishing effort;
- ❖ improve the structure of stocks; and
- ❖ reduce losses to a minimum.

This proved to be the right approach for our lobster fishing area (LFA).

A handbook on increased spawning published in the Conservation Framework (1995) cited various tools and their comparative contribution to spawning in each lobster spawning ground (LSG) which, in the Magdalen Islands, covers our entire LFA.

### *Phase I: Increasing spawning*

From the outset, our organization identified an increase in the minimum legal size and a reduction in the harvest rate through a cut in the allowed number of traps as sound tools for its LFA. The consultations held with the Association's fish harvesters revealed, however, that it

would be more effective to proceed in stages, by first regulating the increase in minimum legal size. Thus, despite a less critical situation (probably due to earlier measures) than in other LSGs listed for egg production, we tackled this task from 1997 to 2003 inclusive by increasing the minimum legal size from 76 mm to 83 mm. In doing this we met—and we are probably the only ones in the Atlantic area to have done so—the five-percent target set by FRCC, since recent assessments of the status of lobster stocks in the Islands by DFO biologists have shown a significant increase in the abundance of egg-bearing females. It was estimated that in 2004, egg production was approximately twice as high as in 1996. The biologists responsible for lobster at Fisheries and Oceans Canada also calculated that the average weight of lobsters caught rose 25 percent, combined with an increase in size of 7 millimetres between 1996 and 2003.

### ***Phase II: Reducing the harvest rate and fishing effort***

As stated earlier, we decided to prioritize increased spawning a few years ago before reducing the fishing effort. In 2005, we began a broad general consultation of all lobster fish harvesters in the archipelago. Since 10 years had passed since that conducted by the Association on the Magdalen Island Lobster Conservation Plan, we first had to ensure that all new fish harvesters who had entered the fishery since that time shared our concerns and focus.

Prior to this major consultation tour, the biologist responsible for lobster at the Institut Maurice-Lamontagne was invited to present the target that Fisheries and Oceans Canada was considering to decrease the fishing effort, as a guideline for our discussions. It was set at a desired 12.5 percent reduction in fishing effort given that the indicators on status of the stocks suggested no serious problems or concerns.

Aside from the reduction in the number of traps, reducing the number of licences and fishing time were also presented as options for decreasing the fishing effort.

### ***REDUCING THE NUMBER OF TRAPS***

Our consultation revealed that reducing the number of traps continued to be the recommended option for reducing fishing effort in the Magdalen Islands. In addition, since several events regularly curtail the annual nominal fishing effort of 5,265,000 traps (325 fish harvesters X 300 traps X 54 days), especially fishing days lost to storms, a decision was made to readjust the target to 10 percent, the level presented in the tool box for lobster conservation (1995).

We therefore opted for a reduction of three traps per fish harvester a year, over 10 years. At the end of the 10-year conservation plan, 9,750 traps will have been retired, equivalent to almost 33 fishing licences. This will cancel out the latest increases in the number of licences dating back to the 1970s, when the total rose from 300 to 325.

### ***CONTROL OF LINES***

In a statement released on 14 October 2005, Louise Gendron, a biologist with Fisheries and Oceans Canada said:

[translation]

*In some cases, reducing the number of traps does not have much effect on mortality from fishing because the remaining traps can be used with greater efficiency. If a limit on the number of trap lines is imposed at the same time, the increase in efficiency of the remaining traps will be dampened.*

Reducing the number of traps and controlling lines therefore must be combined to be effective, according to Louise Gendron. Controlling lines refers, of course, to determining the minimum number of traps on a line as well as the maximum length of that line.

### ***Minimum number of traps per line***

This topic generated debate for some time and opinions fell into one of three groups. Some insisted on setting a minimum number of traps per line to control fishing effort so as not to offset the reduction in the number of traps. Others wanted the minimum number of traps per line to be high enough to help reduce fishing effort as well as crowding at fishing sites. The last group wanted the minimum number of traps per line not to be too high, so they could continue their usual fishing practices.

To obtain a clear position on the minimum number, the Association suggested that DFO conduct a survey of all lobster harvesters in the archipelago. The minimum of seven traps per line garnered the support of the vast majority of fish harvesters. It should also be noted that one third of the fleet was already fishing with at least seven traps per line and that this percentage was likely to rise with a view to reducing the number of traps.

### ***Line length***

An opinion poll of fish harvesters and the “Grande Tournée” by the Association des pêcheurs propriétaires both found that many fish harvesters wanted to set a limit on line length.

Discussions on this topic turned in the opposite direction, however, from those on the minimum number of traps per line. In the opinion poll, lobster harvesters who wanted the highest minimum number of traps per line also wanted the shortest maximum line length between traps. Conversely, harvesters wanting the lowest minimum number of traps per line opted for longer line length between traps.

Here again, through the poll conducted by DFO, we determined that the vast majority of lobster fishers in the archipelago would accept a maximum spacing of eight fathoms between traps with a limit of 56 fathoms maximum length from the first trap to the last.

# **APPENDIX I**

**PARTIAL PRESENTATION FROM JANUARY 1995**

## **Review of management measures for meeting conservation targets**

### **A) Maintaining or increasing egg production**

#### **1) Increased minimum legal size**

In theory, this measure would increase egg production by protecting females that contribute most to egg production. In addition to boosting yield in eggs per recruit, this measure would also increase yield in weight per recruit. However, application of this measure runs the risk of reducing landings in the short term.

#### **2) Marking egg-bearing females**

Marking egg-bearing females and subsequent release of marked females allows them to reproduce at least once before being trapped, which increases their contribution to egg production. Since large females are likely to keep their marking for more than one year, this measure ensures the protection of females with high fertility and eggs of the best quality. The effect of this measure on landings is difficult to estimate, since the frequency of egg-bearing females in commercial catches varies between fishing areas and from year to year. This will also depend on marking and recapture rates.

#### **3) Introducing maximum capture size**

This measure is designed primarily to protect large females that are prime producers in terms of the quantity and quality of eggs, as well as large males that must be present in the area to ensure that spawning takes place. The effects of this measure on fishery landings are not yet known, but we can assume they will be limited given the current proportion of large lobster in the environment.

#### **4) Reduced harvest rates**

A reduction in harvest rates would increase the chances of immature females of legal size escaping the fishery and thereby reaching maturity. Thus, more females would take part in egg production. Since the chances of being trapped would decline, more lobsters would complete an additional season of growth, thereby increasing the yield in weight per recruit. Moreover, trapping of the strongest recruit cohorts would be spread over more years, thereby limiting the impact of a weaker cohort and stabilizing captures, at least in the short term. Since the minimum legal size has not been changed, the size range of lobsters captured would expand, providing a more diversified product. The extent of economic losses incurred by a decrease in harvest rate, itself a result of reduced fishing effort, is dependent on the scope of this reduction, but is not yet known.

### **B) Maintaining or increasing benthic establishment**

Benthic establishment is an important stage in the life cycle of a lobster. The success of benthic establishment largely determines the strength of a cohort and thus recruiting in the fishery. The success of benthic establishment and survival during the early benthic stages is dependent on several factors, including:

- abundance of post-larvae in the environment;
- availability of favourable habitat for establishment and survival;
- accessibility of this habitat;
- support capacity of this environment.

Current management of the lobster fishery focuses only indirectly on the first of these factors, by striving to ensure protection of egg-bearing females. Measures designed to protect habitats suitable to benthic establishment be considered, such as introducing “nurseries” where all forms of fishing would be prohibited.

#### **Measures designed to maintain or improve benthic establishment**

As stated above, benthic establishment and subsequent juvenile stages are important times in the life cycle of lobster. Work conducted in the Magdalen Islands and in the United States has shown that adequate habitat for

benthic establishment is very heterogeneous rocky substrata providing an abundance of shelter. In addition, benthic establishment is more common in shallow inshore waters. In the Magdalen Islands, post-larval recruiting could be limited by the area of adequate substrata. These are also vulnerable to impact by various natural or human factors. Total area, distribution, and physical as well as biological support capacity of these types of substrata are not currently known for the Magdalen Islands. It therefore appears difficult to adopt management measures to protect them. However, since this phase in the life cycle is to some extent critical in determining cohort strength, it is important to acquire more knowledge so it can be better protected. The relationship between success of benthic establishment and abundance of a cohort could also provide a tool for more reliable forecasting of landings than the parental stock-recruiting relationship or the abundance of larvae in the water column.

Although post-larval access to adequate habitat is important, the support capacity of this habitat is also a determining factor. However, this physical and biological capacity is currently unknown for the Magdalen Islands. We consider it important to identify benthic establishment sites or “nurseries,” to determine their degree of saturation as well as their support capacity, to manage the resource effectively.

### **Conclusion and recommendations**

Given the various information presented in this document, we believe the following recommendations should be implemented.

- A) The selection and implementation of any new management measure whatsoever must be the subject of consultations and studies focusing on the anticipated impact on maintaining the stock as well as on the resulting consequences for the socio-economic benefits gained by harvesters from the fishery.
- B) The implementation of any new measure whatsoever must be based on scenarios that will minimize the negative socio-economic impact on fish harvesters.
- C) Knowledge about the lobster population in the Magdalen Islands must be upgraded to support better protection of the resource and ensure a sustainable target level. Research priorities should focus on the following points.
  - 1) Identify and characterize any existing lobster nurseries in the Magdalen Islands, set up benthic establishment monitoring programs to measure success, and identify means of protecting nurseries.
  - 2) Determine the possibility of improving benthic establishment success and the means of achieving this.
    - 2.1) Determine whether a relationship can be established between parental stock and recruiting.

- 2.2) Determine whether a minimum level of egg production can be defined, to be preserved for the local population. If this is possible, the results that would be obtained from implementing various measures to increase egg production would have to be quantified, based on factors of quantity and quality.
- 2.3) Determine whether reliable indicators of abundance could be established for various stages in the life cycle of lobster, including the larval and juvenile benthic stages, and implement mechanisms for monitoring these indicators.
- 2.4) Determine whether a relationship can be established between environmental conditions and recruiting, and if so, identify and characterize the environmental conditions that influence abundance, survival and recruiting of lobster, and implement mechanisms for monitoring these conditions.