



Department of  
Fisheries and Aquaculture

**The Evaluation of the Conservation and Sustainability Plan for the  
Newfoundland Lobster Fishery**

September 2015

# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>1. INTRODUCTION.....</b>	<b>6</b>
<b>2. OVERVIEW OF THE CONSERVATION AND SUSTAINABILITY PLAN .....</b>	<b>6</b>
2.1 Background.....	6
2.2 The Plan.....	7
2.3 The Conservation Strategy .....	8
2.4 The Sustainability Strategy .....	9
<b>3. APPROACH AND METHODOLOGY.....</b>	<b>10</b>
3.1 Logic Model.....	10
3.2 Evaluation Matrix.....	13
3.3 Methodologies.....	15
<b>4. EVALUATION FINDINGS .....</b>	<b>17</b>
4.1 Evaluation Question #1.....	17
4.2 Evaluation Question #2.....	30
4.3 Evaluation Question #3.....	31
4.4 Evaluation Question #4.....	37
<b>5. CONCLUSION .....</b>	<b>38</b>
<b>APPENDIX A – KEY INFORMANT INTERVIEW GUIDE .....</b>	<b>39</b>

# EXECUTIVE SUMMARY

## Background and Introduction

In November 2011, the Minister of Fisheries and Oceans Canada (DFO) and Minister of the Department of Fisheries and Aquaculture (DFA), Newfoundland and Labrador, announced that a *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery* was approved under the Atlantic Lobster Sustainability Measures (ASLM) program.

The *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery* (the Plan) was developed by the Fish, Food and Allied Workers (FFAW), on behalf of lobster harvesters in Newfoundland and Labrador (NL). DFA and DFO each entered into three year contribution agreements with FFAW to support the development and implementation of the Plan. The Plan had a total budget of \$30.2 million; with \$9.05 million contributed by DFA, \$9.05 million by DFO, and \$12.07 million by FFAW. The term of the DFA contribution agreements were from November 2011 to March 2014. In anticipation of these contribution agreements, FFAW implemented the first year of the *Conservation Strategy* in 2010-2011. This first year was funded through a total investment of \$518,250 from the Atlantic Canada Opportunities Agency's Innovative Communities Fund, DFA, and the FFAW.

The primary objective of the *Conservation and Sustainability Plan* was to encourage long-term sustainability and economic prosperity of the lobster fishery by supporting conservation practices that maintain and enhance lobster stocks, and to improve catch monitoring and fishing effort reporting. The Plan had two overall goals:

- To improve overall conservation efforts in all Newfoundland Lobster Fishing Areas (LFAs) through v-notching efforts, newer more comprehensive and reliable information systems, and through the reduction of ecosystem impacts.
- To significantly reduce lobster fishing effort and increase the incomes of remaining harvesters through a voluntary trap reduction program and an enterprise buyback program in LFAs where enterprises are highly dependent on lobster.

## The Evaluation

The evaluation of the Plan was initiated by the Planning and Policy branch of DFA to measure the Plan's effectiveness and impact on the Newfoundland lobster fishery. MQO Research was engaged by DFA to evaluate the Plan in relation to its activities, implementation, outcomes, and cost effectiveness.

Methodologies used in this evaluation included a document review, key informant interviews with representatives from all partners (DFA, DFO and FFAW), and a program and economic data review. This final report contains the findings, supporting evidence, and analysis resulting from the evaluation.

## Evaluation Findings

### Meeting Strategic Objectives

Information from all evaluation sources confirm that the programs/projects under the Plan were appropriate for meeting the strategic objectives established in the FFAW proposal.

The *Conservation Strategy* achieved its objective to increase reliable reporting in the NL lobster fishery through the introduction of new a program (i.e., Mandatory Log Book Program) and the expansion of existing programs (i.e., Harvester Science Field Book Program and the At-Sea Sampling Pilot Program). Through the combination of these programs, DFO has been able to produce reliable data sets to adequately assess the lobster resource in NL and analyze trends to strengthen the lobster conservation regime for the future.

While there is also supporting evidence that the *Conservation Strategy* has helped to increase biological productivity and reduce ecosystem impacts, these outcomes are more difficult to measure. Efforts were made early in the Plan with almost 50 promotional workshops across the province to educate harvesters on conservation measures (e.g. v-notching). However, it is still too early to measure if these initiatives will have an impact on biological productivity.

The Fisheries Stewardship Program was also introduced by FFAW to educate harvesters on conservation measures and focused on developing harvester-led initiatives to reduce the ecosystem impacts from the lobster fishery. This program successfully produced nine workshops in active LFAs and introduced harvester-led initiatives including closed areas and lobster refugia, and introduced biodegradable trap elements to decrease ghost fishing. While it is felt by key informants that these activities will help to reduce the ecosystem impacts on other marine animals and bycatch, the data is not available at this time to measure the direct impact.

The evaluation findings supported that the *Sustainability Strategy* fully achieved its two objectives of reduced fishing effort and increased economic viability for lobster harvesters in NL. Evidence supports that the programs under the *Sustainability Strategy* (Voluntary Trap Reduction Program and the Lobster Enterprise Retirement Program) directly removed fishing effort from the participating LFAs. Fishing effort is measured by the number of traps pulled during the lobster season, and as a result of these two programs 36.5% of fishing effort was directly removed from the participating LFAs. The percentage of traps retired ranged from just less than one quarter (22.3%) in LFA 12 to almost half (49.2%) in LFA 14B.

The Voluntary Trap Reduction Program (VTRP) and the Lobster Enterprise Retirement Program (LERP) had a significant impact on the average trap productivity and lobster earnings of small boat enterprises in all LFAs. A comparison of economic data of small boat enterprises from 2009 to 2013 found there was a 35% increase in the average productivity of lobster traps in all LFAs. This increase in productivity was broad in range including a slight increase of 6.9% in LFA 13A to 53.3% in LFA 12. An increase in average lobster earnings for small boat enterprises was also seen across all LFAs in this time period, with a slight increase of

0.5% in LFA 13A to a substantial 29% increase in LFA 11. Informants also expected that other species licence retirements that were surrendered along with the lobster retirements would also impact the economic viability of other harvesters in the coverage area; however this impact was not studied in this evaluation.

### **Cost effectiveness**

The costs associated with the implementation of the Plan were used effectively and efficiently. All planned projects/programs under the Plan were implemented within the expected time frame and within budget.

The total budget allotted for the Plan was \$30 million; however the Plan was fully implemented 7% under budget for a total of \$28 million. Each component of the Plan had individual budgets and were all implemented within their original budgets. The overall management and administration was delivered 5% under budget; the *Conservation Strategy*, including the Mandatory Log Book Program, Harvester Science Field Book Program, At-Sea Sampling Program, and the Fisheries Stewardship Program, was delivered almost 20% under budget; and the LERP was delivered approximately 10% under budget.

### **Overall Performance of the Lobster Enterprise Retirement Program**

The LERP enterprise retirement target was exceeded by 3% (255 projected retirements vs. 263 actual retirements) with an expenditure of only 90% of program funds (\$16.5 million budgeted versus expended of \$14.7 million). Individual targets in four of the six LFAs were also reached with LFA 12 and LFA 14B being the exceptions.

The findings from this evaluation show that the LERP was well received by harvesters and participation was successful across all LFAs. Interest in the program was strong with almost 2,000 retirement bids and approximately 45% of all licence holders electing to submit at least one bid. The participation rate ranged from close to one-third of the fleet in LFA 11 to over one-half of the fleet in LFA 14B.

The LERP was delivered by a competitive reverse auction bidding approach. Evidence supports that the reverse auction was an effective means in meeting the objectives of the Plan. The use of the reverse auction resulted in the enterprise retirement targets being exceeded at a 10% lower cost than the original amount projected. There was overwhelming agreement expressed by key informants that the reverse auction approach was vital in the effectiveness and success of the program.

Overall, the key informants felt the LERP was highly relevant to the needs of the sector and successfully reached its objectives of reducing fishing effort and increasing economic viability in the participating LFAs. Economic data for small boat enterprises supports that the reduction in fishing effort from this project had a positive effect on earnings across all the LFAs. The LERP accounted for an approximate reduction in fishing capacity of 24%. This reduction resulted in fewer competing enterprises and an increase in lobster earnings that ranged from 4% in LFA 14A to 29% in LFA 11 between 2009 and 2013.

## Unplanned Costs and Benefits

In general, there were few unplanned costs or benefits identified with the implementation of the Plan. The lone unplanned cost mentioned by key informants throughout the evaluation was the large amount of in-kind administrative time encountered by all organizations.

The primary unplanned benefit reported by key informants was how the implementation of the Plan demonstrated the success of government and industry working jointly on fleet rationalization. Key informants indicated that the success of this model will inform future fleet rationalization programs.

## Conclusion

In conclusion, the *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery* has been successful in reaching its objectives and has made great strides to encourage long-term sustainability and economic prosperity of the lobster fishery in NL.

# 1. INTRODUCTION

This report presents the results of the evaluation of the *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery*. MQO Research was contracted by DFA to measure the effectiveness of the Plan and assess its impact on the Newfoundland Fishery.

The report is organized as follows:

**Section 1:** Introduction

**Section 2:** Overview of the Conservation and Sustainability Plan

**Section 3:** Approach and Methodology

**Section 4:** Evaluation Findings

**Section 5:** Conclusion

## 2. OVERVIEW OF THE CONSERVATION AND SUSTAINABILITY PLAN

### 2.1 Background

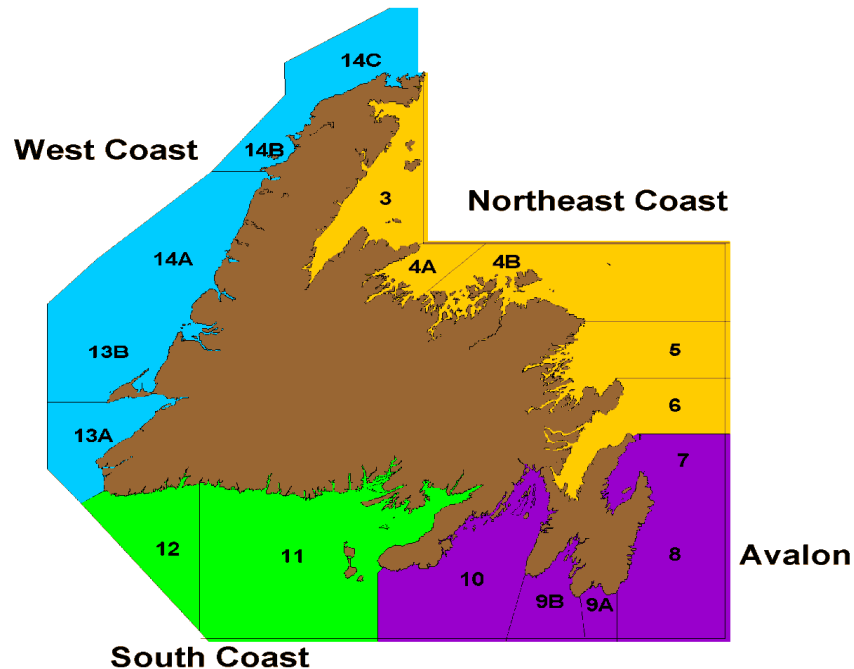
The lobster fishery in NL accounts for 30% of the lobster licenses in Atlantic Canada. Of the 2900 harvesters in NL, approximately 30% are highly dependent on the lobster resource. These lobster-dependent harvesters are concentrated in four contiguous LFAs where virtually all lobster licences are actively fished (LFAs 11 to 14). In the remaining LFAs (3 to 10), lobster is a secondary source of enterprise income and there is a higher degree of lobster licence inactivity. See figure 1 for a geographical representation of the LFAs in Newfoundland and Labrador.

Gross income from the lobster fishery in 2009 for provincial harvesters represented approximately \$18.2 million, which is slightly less than the earnings the fishery generated in 2004. However, gross income for 2009 was a precipitous 42% drop from the \$32 million the fishery generated in 2007. In 2009, dependency on lobster was further increased due to the decline in important species such as the Atlantic cod and lump fish. This decline was experienced on the south and west coasts where lobster dependency is the highest.

Despite its poor economic performance, the Newfoundland lobster fishery is one of the most advanced in Canada in terms of conservation efforts. Many of the conservation measures first proposed in the 1995 Fisheries Resources Conservation Council report on lobster have been adopted by Newfoundland LFAs. One of the most important of these conservation measures is the minimal size required to protect recruitment potential. All Newfoundland LFAs have adopted a minimum legal carapace length of 82.5 mm. Newfoundland LFAs have also introduced voluntary v-notching, established closed areas and lobster refugia, systematically

reduced trap limits, shortened seasons, and introduced maximum size limits in some LFAs in an effort to sustain the resource.

Figure 1. Newfoundland Lobster Fishing Areas



While the Newfoundland lobster fishery has made significant progress in adopting resource conservation and sustainable management measures, the current state of knowledge and findings regarding the health of lobster stocks is considered weak. The 2009 Science Advisory Report for Lobster in the Newfoundland and Labrador Region<sup>1</sup> states that additional data is required to more comprehensively assess the lobster resource in terms of abundance indicators and rates of renewal.

## 2.2 The Plan

DFO funds the ASLM program to help Canada’s lobster fishery ensure its long-term sustainability and economic prosperity<sup>2</sup>. This program supports industry efforts to maintain healthy lobster stocks in all LFAs, and improve lobster abundance in areas where stocks have declined. It also supports economic prosperity by helping to set the conditions for commercial success. Through this initiative the Government of Canada committed \$50 million for LFAs to develop and implement sustainability plans.

<sup>1</sup> <http://www.dfo-mpo.gc.ca/Library/336989.pdf>

<sup>2</sup> <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/lobster-homard/alsm-mdih-eng.htm>



In November 2011, the Minister of Fisheries and Oceans Canada and Minister of the Department of Fisheries and Aquaculture in Newfoundland and Labrador, announced that a Sustainability and Conservation Plan developed by the FFAW, on behalf of lobster harvesters in the Newfoundland and Labrador Region, was approved under the ASLM.

DFA and DFO each entered into three year contribution agreements with the FFAW to support the implementation of this Plan. The Plan had a total budget of \$30.2 million; with \$9.05 million contributed by DFA, \$9.05 million by DFO and \$12.07 million by FFAW. The term of the contribution agreement was from November 16, 2011 to March 31, 2014. In anticipation of these contribution agreements, the FFAW implemented the first year of the *Conservation Strategy* in 2010-2011 through a total investment of \$518,250 from Atlantic Canada Opportunities Agency's Innovative Communities Fund, DFA, and the FFAW.

The primary objective of the Plan was to encourage long-term sustainability and economic prosperity for the lobster fishery by supporting conservation practices that maintain and enhance lobster stocks, and improve catch monitoring and fishing effort reporting. The overall goals of the Plan include:

- Improving the overall conservation efforts in all Newfoundland Lobster Fishing Areas through v-notching efforts, newer more comprehensive and reliable information systems, and through the reduction of ecosystem impacts.
- Significantly reducing lobster fishing effort and increasing the incomes of remaining harvesters through a voluntary trap reduction and an enterprise buyback program in those LFAs where enterprises are highly dependent on lobster and incomes from lobster are very low.

The Plan consisted of two individual strategies, a *Conservation Strategy* to improve overall conservation efforts in all Newfoundland LFAs, and a *Sustainability Strategy* to reduce fishing effort and enhance the economic viability of the lobster fishery.

## 2.3 The Conservation Strategy

The *Conservation Strategy* aimed to improve conservation in all LFAs through the following objectives:

**Improved Prospects for Biological Productivity:** Through this Plan biological productivity was to be enhanced by:

- The active promotion of voluntary v-notching in all LFAs.
- Providing V-notching tools to harvesters at reduced cost.

**Reliable Reporting:** Three separate information collection initiatives were put in place to collect:

- Reliable data sets on lobster fishing catch and effort across all 12 Newfoundland LFAs.
- Reliable data sets on undersized animals to assess stock recruitment potential across all 12 Newfoundland LFAs.
- Reliable data sets on ecosystem impacts by providing detailed data on lobster fishery bycatch and ghost fishing across all 12 Newfoundland LFAs.

**Reduced Ecosystem Impacts:** Promotion and support from advocates related to the conservation and protection of the lobster resource to produce:

- An increased level of understanding regarding the lobster resource and the strategies needed to sustain the fishery.
- Harvester-led initiatives in the areas of closed areas to lobster fishing, recording of bycatch of significant species and reduction of ghost fishing by lost traps.

This strategy included the active promotion of conservation measures, the introduction of a Mandatory Logbook Program and Fisheries Stewardship Initiative; and the expansion of existing programs including the a Voluntary Harvester Science Field Book Program and an At-Sea Sampling Pilot Program.

## 2.4 The Sustainability Strategy

While the *Conservation Strategy* was targeted at all Newfoundland LFAs, the *Sustainability Strategy* focused on lobster-dependent enterprises in LFAs 11 to 14B. These LFAs are heavily dependent on lobster, have very low average earnings, and most lobster licenses are actively fished. Given the limited resources available through the program, it was determined there was a greater impact to be had by reducing catch efforts in these areas to increase incomes of the remaining enterprises. The *Sustainability Strategy* had two objectives:

**Reduction of Fishing Effort:** To leave fewer participants in the fishery and effectively reduce the overall fishing effort in participating LFAs through a voluntary trap reduction program and an enterprise retirement program.

**Increased Economic Viability:** To increase the economic viability of lobster enterprises by allowing the lowest earning and more lobster-dependent enterprises to retire from the fishery.

The strategy included a Voluntary Trap Reduction Program (VTRP) and a Lobster Enterprise Retirement Program (LERP) to support the voluntary reduction of lobster traps and retiring lobster licences through a reverse auction approach.

### 3. APPROACH AND METHODOLOGY

DFA has a mandate to support and promote the development of sustainable and viable fishing and aquaculture industries, which produce high quality and high value products<sup>3</sup>. As outlined in the 2014 - 2017 Strategic Plan<sup>4</sup>, DFA's mission is to support both the strengthening of the fishing industry and the expansion of the aquaculture industry to create sustainable and economic opportunities for the province. The *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery* plays an important role in this mission as the primary objective of the Plan was to ensure the long-term sustainability and viability of the province's lobster fishery.

The evaluation of the Plan falls under the Planning and Policy branch of DFA. As stated in the *Request for Proposals* document, the purpose of this project is to conduct an evaluation of the Plan to measure its effectiveness and assess its impact on the Newfoundland Lobster Fishery.

MQO used a three phased approach with a combination of primary and secondary research to conduct the evaluation the Plan.

- A design phase to develop the evaluation questions and methodology.
- A data collection and analysis phase that provided the information needed to address the evaluation questions.
- A reporting phase to compile findings and write the final report.

#### 3.1 Logic Model

A logic model is a map indicating the logically related aspects of a program. It shows, at a broad conceptual level, the links among a program's inputs, activities, outputs, and outcomes.

The logic models below (Table 1) captures in broad strokes the key activities, outputs, outcomes, and impacts (ultimate outcomes) of the *Conservation and Sustainability Plan for the NL Lobster Fishery*.

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<sup>3</sup> Department of Fisheries and Aquaculture. Government of Newfoundland and Labrador. Retrieved online, February 11, 2015 from: <http://www.fishaq.gov.nl.ca/>

<sup>4</sup> Department of Fisheries and Aquaculture.. Strategic Plan 2014-17. Government of Newfoundland and Labrador. Retrieved online, February 11, 2015 from: [http://www.fishaq.gov.nl.ca/publications/Strategic\\_Plan\\_2014\\_17.pdf](http://www.fishaq.gov.nl.ca/publications/Strategic_Plan_2014_17.pdf)

Table 1: Logic Model - Conservation and Sustainability Plan for the NL Lobster Fishery.

Activities	Outputs	Immediate Outcomes	Intermediate Outcomes	Ultimate Outcomes
<b>Conservation Strategy</b>				
V-notching Promotion	<ul style="list-style-type: none"> <li>▪ Number of workshops/meetings with harvesters to promote v-notching</li> <li>▪ Number of v-notching tools bought by FFAW</li> <li>▪ Number of v-notching tools disseminated to harvesters</li> </ul>	Increased v-notching in all NL LFAs	Improved prospects for biological productivity of lobster stocks	Enhanced conservation and sustainability of the NL lobster fishery
Mandatory Log Book Program	<ul style="list-style-type: none"> <li>▪ Number of log books disseminated</li> <li>▪ Number of log books received</li> <li>▪ Level of completion of log books</li> <li>▪ Catch and effort data collected</li> </ul>	Development of an electronic database containing reliable data	Data and information analysis available to help sustain and conserve the lobster fishery	
Voluntary Harvester Science Field Book Program	<ul style="list-style-type: none"> <li>▪ Number of harvesters participating in program</li> <li>▪ Number of log books collected</li> <li>▪ Catch and effort data collected</li> <li>▪ Recruitment and abundance data collected</li> </ul>			
At-Sea Sampling Pilot Program	<ul style="list-style-type: none"> <li>▪ Number of sea samplers participating in program</li> <li>▪ Verification of data collected from Mandatory Log Book Program                             <ul style="list-style-type: none"> <li>- Catch and effort data</li> <li>- Recruitment and abundance data</li> <li>- Ecosystem impacts data</li> </ul> </li> </ul>			

Activities	Outputs	Immediate Outcomes	Intermediate Outcomes	Ultimate Outcomes
Fisheries Stewardship Program	<ul style="list-style-type: none"> <li>Number of workshops/meetings held</li> <li>Number of identified potential areas to expand the Newfoundland network of lobster refugia</li> <li>Perceptions on efficient and effective means of reducing ghost fishing by lost traps</li> <li>Number of harvester led conservation initiatives</li> </ul>	Increased harvester led conservation initiatives	Reduced ecosystem impacts	
<b>Sustainability Strategy</b>				
Voluntary Trap Reduction Program	<ul style="list-style-type: none"> <li>Number of meetings held with harvesters</li> <li>Number of LFAs to accept the program</li> <li>Number of traps permanently retired</li> <li>Extent of industry contribution generated toward LERP</li> </ul>	Reduction in fishing effort	Increased economic viability of remaining harvesters	Enhanced conservation and sustainability of the NL lobster fishery
Lobster Enterprise Retirement Program	<ul style="list-style-type: none"> <li>Number of submitted offers to sells</li> <li>Number of enterprises purchased</li> <li>Number of traps permanently retired</li> </ul>			

## 3.2 Evaluation Matrix

The use of an evaluation matrix is a method of objectively evaluating a number of options against a number of criteria. These criteria are prioritised before the evaluation is made with greater weighting to those items of most importance. The evaluation of the Plan was addressed through the following evaluation matrix.

Table 2: Evaluation Matrix - Conservation and Sustainability Plan for the NL Lobster Fishery.

Evaluation Question	Indicators	Document Review	Key Informant Interviews	Program Data	Economic Data
Are the programs/projects under the Plan adequate and appropriate for meeting the strategic objectives established in the FFAW proposal?	The extent to which programs/projects contribute to the conservation and sustainability of the NL lobster fishery	✓	✓		
Did the programs/projects under the Plan meet the intended objectives in the FFAW proposal?	<p>The extent to which the programs under the Conservation Strategy</p> <ul style="list-style-type: none"> <li>• Improved prospects for biological productivity</li> <li>• Increased reliable reporting</li> <li>• Reduced ecosystem impacts</li> </ul> <p>The extent to which the programs under the Sustainability Strategy</p> <ul style="list-style-type: none"> <li>• Reduction of fishing effort</li> <li>• Increased economic viability for harvesters</li> </ul>	✓	✓	✓	✓
Were the costs associated with the programs/projects under the Plan used effectively and efficiently?	<p>The extent to which the delivery of the projects/programs were delivered efficiently within budget</p> <p>The extent to which the objectives of the Plan were met effectively within budget</p>	✓	✓	✓	

Evaluation Question	Indicators	Document Review	Key Informant Interviews	Program Data	Economic Data
<p>How did LERP perform in relation to:</p> <ul style="list-style-type: none"> <li>• Its target achievement</li> <li>• Industry response and participation</li> <li>• The effectiveness of the auction approach</li> <li>• Overall performance</li> <li>• Its impact on the NL lobster fishery</li> </ul>	<p>The extent to which the LERP:</p> <ul style="list-style-type: none"> <li>• Met its target</li> <li>• Received buy-in from the LFAs</li> <li>• Received offer to sell applications</li> <li>• Followed the reverse auction approach (lessons learned)</li> <li>• Reduced fishing effort</li> <li>• Increased economic viability for harvesters</li> </ul>	✓	✓	✓	✓
<p>Were there any unplanned costs and benefits associated with the implementation of the Plan?</p>	<p>The extent to which unplanned costs occurred during implementation</p> <p>Perceptions of unplanned benefits associated with the Plan</p>		✓	✓	

### 3.3 Methodologies

The methods used in this evaluation were structured to collect information on each of the evaluation issues. Where possible, there was a balance between quantitative and qualitative methods, with qualitative methods providing further description and explanation for the quantitative information. Both primary and secondary data sources were used in the evaluation.

#### Document Review

MQO undertook a document review of all documents received from DFO, DFA and FFAW related to the Plan.

The documents reviewed included:

- FFAW Lobster and Sustainability Plan – Proposal
- FSSSB – Lobster Conservation and Sustainability Plan Final Report
- Lobster Enterprise Retirement Program (LERP) Bid Assessment Reports
- LERP Information Brochure
- LERP Information Circular
- LERP Executive Committee Summary Report
- LERP Standard Operating Procedures
- LERP FAQs
- LERP Press Release
- DFA – Lobster Plan Accountability Framework and Logic Model
- Contribution Agreements between DFA and FFAW
- 2009 Stock Assessment Report
- 2012 Stock Assessment Report

#### Key Informant Interviews

One-on-one interviews were used to gather detailed information to augment the secondary research including the document review and project data review.

A list of key informants was compiled with input from the client. This list of key informants took into consideration the two strategies, the different partner organizations and the extent to which the list complemented other methodologies.

MQO developed draft interview guides that were reviewed and approved by the client. The interviews were conducted using a semi-structured interview guide. The guides were pre-tested and adjusted as found necessary. Interviews ranged from 0.5 hours to 2.5 hours in duration.



MQO interviewed 10 key informants in total, all from within DFA, DFO and FFAW. The interviewees ranged in level of involvement with the implementation of the Plan (e.g. project manager, program coordinator, data coordinator, industry liaison).

## Program and Economic Data Review

The data review focused on a review of the full set of program data, and all relevant and available economic data.

Program data received from DFO and FFAW was reviewed. Data received and reviewed included:

- V-notching data (e.g., number of v-notched lobsters, number of v-notching tools provided to harvesters)
- Mandatory Log Book Program (e.g., number of books returned, completion rate)
- Voluntary Harvester Science Field Book Program (e.g. number of books returned, number of berried lobsters, number of v-notched lobsters)
- At-Sea Sampling Pilot Program (e.g., number of samplers, catch, bycatch)
- Fisheries Stewardship Program (e.g., number of workshops, location of workshops)
- Voluntary Trap Reduction Program (e.g., adoption of reduced trap limits, number of traps reduced, cost generated to support LERP)
- LERP (e.g., number of offers to sell, number of enterprises retired, number of traps retired, other species licence retirements)

Economic data received from DFO was also reviewed. Data received and reviewed included:

- Average enterprise revenue by LFA
- Average dependency on lobster by LFA
- Trap productivity by LFA

## 4. EVALUATION FINDINGS

### 4.1 Evaluation Question #1:

Are the programs/projects under the Plan adequate and appropriate for meeting the strategic objectives established in the FFAW proposal?

#### **Summary Statement**

Information from all evaluation sources affirms that the programs/projects under the Plan were appropriate for meeting the strategic objectives established in the FFAW proposal.

### Conservation Strategy

#### **Objective #1: Improved Prospects for Biological Productivity**

*While there is reason to believe that there has been an increase in biological productivity of lobsters due to increased promotion of v-notching and other conservation measures, it is still too early to measure the long-term impact. Key informants felt confident that due to the numerous presentations throughout the province on conservation measures (e.g., v-notching) and the distribution of v-notching tools, an increased number of harvesters are practicing conservation behaviours and this will improve the prospects for biological productivity in the future.*

Voluntary v-notching has been implemented in NL since 1995 to help increase egg production in lobster populations by allowing females to spawn 2-3 times. With funding support from ACOA, the FFAW implemented the first year of the *Conservation Strategy* in 2010. In this first year 42 meetings were held with harvesters across the province. These meetings were used to promote conservation measures (e.g., v-notching) and the reliability of reporting through the introduction of the Mandatory Log Book Program.

These presentations were highly focused on explaining why v-notching was important to the fishery, what a v-notched lobster looks like, and to inform harvesters that they could buy v-notching tools from FFAW at a reduced cost.

Through these meetings a total of 128 v-notching tools were provided to lobster harvesters (approximately 5% of harvesters). While one informant reported that the uptake of v-notching tools was disappointing, another informant indicated that the low uptake was not surprising because voluntary v-notching had been implemented in NL since the 1990s and many harvesters were already familiar with v-notching with a knife.

**“On a positive note, there are 128 more harvesters v-notching now than there would be if ALSM had not happened; and with our remaining inventory, we have replacement instruments for those that need replacing.”**

After the initial meetings in 2010-2011, FFAW offered another nine workshops through the Fisheries Stewardship Program in active LFAs. These workshops encouraged conservation behaviours and harvester-led initiatives with the goal to improve biological productivity and reduce ecosystem impacts.

All informants expressed that there is reason to believe that v-notching levels were improved due to increased awareness and knowledge and the availability of the v-notching tools. All key informants interviewed also felt that the increased v-notching would lead to increased sustainability of the lobster stock.

Data in table 3 illustrates the number of females caught and v-notched as reported by harvesters in the Harvester Science Log Book program from 2008-2012. As you can see, there is an increase in the number of berried caught in 2010 due to the expansion of the program; however there is also an increase in the percentage of v-notched lobsters as compared to commercial berried lobster after 2010. It is noted that it is not known if 2009 was an unusually low year due to limited amount of data.

Table 3: Number of Berried Females and V-notching Activity (Harvester Science Log Books).

Year	Commercial Berried	V-notched Caught	V-notched by Harvester
2009	60,931	28,723 (42%)	5,733 (9%)
2010	91,082	52,639 (58%)	10,932 (8%)
2011	76,954	39,182 (51%)	6,463 (8%)
2012	91,673	46,621 (51%)	7,811 (9%)

## Objective #2: Reliable Reporting

***Through the implementation of the Mandatory Log Book Program, and the expansion of the Harvester Science Field Book Program and At-Sea Sampling Pilot Program, reliable data sets have been developed to adequately assess the lobster resource in Newfoundland and Labrador and further strengthen the lobster conservation regime for the future.***

All key informants expressed a greater need for reliable reporting within the lobster fishery in NL. Before the implementation of the Plan, limited data existed on fishing effort in the lobster fishery. Most information that was available to DFO came from sales slips that record landed volume. Information relevant to fishing effort (e.g. number of fishing days, number of trap fished, and gear type used) was not recorded on sales slips and was of limited use to DFO when developing conservation measures.

**Mandatory Log Book Program:** Beginning with the 2010 lobster fishing season all Newfoundland lobster licence holders were required, as per DFO licensing regulations, to complete daily logs of fishing effort (numbers of traps hauled), catch (numbers of legal sized lobster caught, number of berried females v-notched and released), and number of traps lost.

This process occurred for the 2010, 2011, 2012, and 2013 lobster fishing seasons. As shown in table 4, approximately 50% of harvesters have submitted mandatory log books to DFO since 2010.

Table 4: Number of Mandatory Log Books Returned.

	2010	2011	2012	2013
Number of log books returned	1935	1520	802	1179 <sup>5</sup>
Percentage of total returned	68%	54%	30%	46%

Key informants indicated that introducing the Mandatory Log Book Program not only addressed a key data gap for DFO, but also increased the accuracy of other measurement data that was already being collected through other sources (e.g., landed value).

***“The more points you have, the more confidence you have; and the more confidence we have in our data, the more confidence we can have in our conclusions. The fact that we have data from everywhere and everyone allows us to compare and extrapolate the information.”***

The importance of this program is reflected through DFO’s continuation of the program even after the conclusion of the funding through the Plan.

**Harvester Science Field Log Books:** Prior to the implementation of the Plan, FFAW had established a network of lobster harvesters who voluntarily maintained two separate science field books throughout the lobster fishing season. All LFAs were not represented under this network.

Through the Plan, the FFAW were able to expand the program to include field books in all LFAs. This field book contained more detailed data than the mandatory log books. They included data from modified traps that was useful in estimating abundance and recruitment indices, such as the number of commercial size berried females, number of v-notched females caught and several categories of undersized animals including berried females and unberried females and males. The information from these log books is used to validate data collected in the mandatory log books and assist DFO in developing measures to reduce ecosystem impacts.

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<sup>5</sup> Preliminary count from FFAW.

As shown in table 5, the number of field log books received has approximately doubled since the implementation of the Plan.

Table 5: Number of Field Log Books Returned.

	2006	2007	2008	2009	2010	2011	2012	2013
Number of log books returned	119	112	105	109	224	202	195	178 <sup>6</sup>

Representatives from DFO indicated that returned field books were approximately 80-90% complete.

Key informants involved in the program expressed the importance of using this detailed information to generalize across the population (e.g., if the overlapping data variables from the field books and the mandatory logs books are comparable then the more detailed data that is collected can be generalized to the larger population).

The FFAW has decided to continue this part of the program although the funding from the Plan has concluded.

**At-Sea Sampling Program:** Prior to the implementation of the Plan, FFAW and DFO had established a system for random at-sea sampling of commercial lobster fishing operations. During the lobster fishing season trained fishery samplers have accompanied randomly selected harvesters in four Newfoundland LFAs to record data and make observations during actual fishing operations.

Through this Plan, the At-Sea Sampling Pilot Program was expanded to cover all 12 Newfoundland LFAs (Table 6). At-Sea Samplers were hired, trained, and situated throughout the various LFAs and randomly boarded lobster fishing vessels to collect scientific data on the lobster resource being harvested and independently observed fishing operations. The data that at-sea samplers collected was independent from the data that the lobster harvesters recorded in their mandatory log book and science field book, if participating in that voluntary program.

This initiative added another layer to collection of statistically valid data for all LFAs on catch and effort, abundance/recruitment and ecosystem impacts. The data from the At-Sea Sampling Program is also used to validate data being collected by harvesters through the Mandatory Log Book and Harvesters Science Field Book Program.

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<sup>6</sup> Preliminary count from FFAW.

Table 6: Lobster Fishing Areas with At-Sea Sampling Coverage from 2010 to 2013.

LFA	Area	At-Sea Sampler
3	Cape Charles – Cape St. John	Sampler #1
4A	Notre Dame Bay West (Cape St. John – North Head)	
4B	Notre Dame Bay East (North Head – Cape Freels)	Sampler #2
5	Bonavista Bay	
6	Trinity Bay	Sampler #3
7	Conception Bay	
8	Southern Shore	Sampler #4
9	Trepassey Bay ( Cape Race to Cape Pine)	
9	St. Mary's Bay ( Cape Pine to Cape St. Mary's)	
10	Placentia Bay	Sampler #5
11	Fortune Bay	Sampler #6
12	Cinq Cerf to Cape Ray	Sampler #7
13A	Cape Ray to Cape St. George	Sampler #8
13B	Cape St. George to Cape St. Gregory	Sampler #9
14A	Cape St. Gregory to Point Riche	
14B	Point Riche to Big Brook	Sampler #10
14C	Big Brook to Cape Bauld	

At-sea sampling occurred for the 2010, 2011, 2012 and 2013 lobster fishing seasons. The total number of measures (e.g. catch and effort, undersized animals, berried females) and traps sampled by sea samplers can be seen in table 7.

Table 7: Total Measures and Traps Sampled by At-Sea Samplers.

Sub Regions	2010 Total Measures	2010 Total Traps Sampled	2011 Total Measures	2011 Total Traps Sampled	2012 Total Measures	2012 Total Traps Sampled	2013 Total Measures	2013 Total Traps Sampled
Northeast Coast	3,590	2,449	1,106	813	2,707	1,936	1,955	1,365
Avalon	4,527	3,233	5,286	4,024	4,552	3,201	3,727	2,852
South Coast	20,939	9,419	22,164	8,489	22,485	9,918	24,217	8,997
West Coast	18,259	10,125	6,901	4,284	19,223	10,460	18,158	9,493
Total	47,315	25,226	35,451	16,797	48,967	25,515	48,057	22,707

Again, the importance of this program is reflected through FFAW's continuation of the program after the conclusion of the Plan.

### Objective #3: Reduced Ecosystem Impacts

*Through the implementation of the Fisheries Stewardship Program, FFAW educated harvesters on how to reduce their ecosystem impacts, and introduced measures to collect data on lost traps to reduce the impact of ghost fishing.*

**Fisheries Stewardship Program:** Through the implementation of the Plan, FFAW was able to hire five stewards to visit active LFAs. The stewards would work with harvesters to share and expand their knowledge, to develop the tools necessary to adopt sustainable fishing practices, and to implement a broader fisheries conservation ethic. This shared stewardship meant that participants in the fishery were involved in fisheries management decision-making processes, contributed knowledge and experience, and shared in the accountability of outcomes.

The primary focus of the presentations completed under the Fisheries Stewardship Program included:

- Promotion and encouragement of v-notching of berried females and to inform fish harvesters of the availability of v-notching tools.
- Encouragement of data collection through the Mandatory Log Book and Harvester Science Field Book programs.
- Promotion of the At-Sea Sampling Program.
- Review of data collected to date and conclusions made from the data.
- Promotion of harvester led initiatives such as closed areas, recording of by catch, and reduction of ghost fishing by lost traps.

There were nine meetings held in 2012-2013 by the stewards. Locations and dates are shown in table 8.

Table 8: Fisheries Stewardship Program Meetings.

Date	Location	LFA	Attendees
11-Dec-12	English Harbour West	11	FFAW,DFO,DFA
11-Dec-12	Harbour Breton	11	FFAW,DFO,DFA
28-Jan-13	Greenspond	5	FFAW
11-Feb-13	Cow Head	14a	FFAW,DFO,DFA
12-Feb-13	Port au Choix	14b	FFAW,DFO,DFA
12-Feb-13	Plum Point	14b	FFAW,DFO,DFA
13-Feb-13	York harbour	13b	FFAW,DFO,DFA
13-Feb-13	Stephenville	13a	FFAW,DFO,DFA
14-Feb-13	Port aux Basque	12	FFAW,DFO,DFA

Key informants expressed that fish harvesters embraced their role as stewards by initiating and participating in fisheries stewardship activities and adopting sustainable fishing practices.

Examples of stewardship initiatives as a result of the plan include:

- Closed Areas or Refugia - Stewardship advocates supported harvester initiatives to identify potential areas to expand the Newfoundland network of lobster refugia and assist in the implementation where support for such initiatives exist.
- Reduction of ghost fishing by lost traps - FFAW solicited harvester input across all LFAs on the most efficient and effective means of reducing ghost fishing which resulted in the introduction of biodegradable trap elements to the Newfoundland lobster fishery.

Informants felt that the Fisheries Stewardship Program created a solid partnership between fish harvesters, communities, industry organizations and government that has allowed for the sharing of knowledge and ideas.

*“The program works well because the ideas for initiatives came from harvesters themselves.”*

## Sustainability Strategy

### Objective #1: Reduction of Fishing Effort

***Fishing effort is measured by the number of traps pulled during the lobster season. By reducing trap limits and retiring fishing enterprises, the Voluntary Trap Reduction Program and the Lobster Enterprise Retirement Program directly removed fishing effort from the participating LFAs.***

**Voluntary Trap Reduction Program:** VTRP was implemented as part of the *Conservation and Sustainability Plan*. The program was introduced to decrease catch effort across LFAs and to generate an industry contribution for the second component of the *Sustainability Strategy*, the LERP.

To inform harvesters of the VTRP and to receive buy-in to participate in the program, FFAW members conducted multiple meetings with each LFA. Before moving ahead with the program, FFAW had to conduct a formal vote in each LFA to gain agreement to cut a percentage of traps across the board.

Through this process, lobster licence holders in LFA 13A to LFA 14B adopted significant reductions in the lobster trap limits in their respective areas prior to the start of the 2011 fishing season. Similar trap reductions were adopted by licence holders in LFA 11 and LFA 12 at the end of the 2011 season.

The total agreed upon trap reductions can be found in table 9. The reductions in the trap limits under the VTRP ranged from a low of 7.5% in LFA 11 to a high of 28.6% in LFA 14B.



Table 9: Voluntary Trap Reduction Program - Trap Limit Reductions by LFA.

LFA	Enterprises	Initial Trap Limit	Trap Reduction	Current Trap Limit	Trap Reductions	Reduction (%)
LFA 11	320	200	15	185	4,800	7.5
LFA 12	44	150	15	135	660	10.0
LFA 13A	148	200	20	180	2,960	10.0
LFA 13B	171	250	30	220	5,130	12.0
LFA 14A	203	300	50	250	10,150	16.7
LFA 14B	235	350	100	250	23,500	28.6
Total	1,121	-	-	-	47,200	16.5

Lobster fishing effort and capacity were reduced under the VTRP by over 16%, or 47,200 traps, in the participating areas.

Close to one-half (23,500) of the trap reductions that occurred, occurred in LFA 14B where the trap limit for each of the 235 licensed enterprises was reduced from 350 to 250. An additional 22% of the trap reductions occurred in LFA 14A. The 203 licensed enterprises in this management area reduced their trap limit from 300 to 250.

All key informants were extremely positive regarding the VTRP process. Informants felt that the VTRP program not only reduced the fishing effort by individual harvesters but decreased the congestion in over-populated fishing areas.

One key informant expressed that the importance of this program to industry was highlighted by the strong buy-in of the LFAs.

***“This was a complex process and people understate the importance of the VTRP to the whole program. At first we [the FFAW] were not confident that the LFAs would come on board and cut their traps to support LERP. But they did and fairly quickly. This program was needed to decrease effort and capacity. It was a huge accomplishment.”***

**Lobster Enterprise Retirement Program:** LERP represented the centrepiece of the *Conservation and Sustainability Plan*. This program was intended to:

- Reduce the number of lobster-dependent fishing enterprises (and fishing effort) in LFAs 11 - 14.
- Increase the fishing income levels of lobster harvesters.
- Improve the economic viability of the remaining lobster enterprises in these areas.

The LERP provided lobster licence holders in LFA 11 to LFA 14B with an opportunity to voluntarily retire their lobster licence through a reverse auction approach. In addition to the retirement of the lobster licence, enterprise owners were required to surrender their:

- Fishing enterprise (i.e. independent Core, Core or non-Core status and all vessel registrations)
- Snow crab and groundfish licences and all associated IQs or catch limits

Under the Lobster Enterprise Retirement Program close to one-quarter of the licenced lobster enterprises participating in the program retired their licences (Table 10). At the LFA level, the level of retirements ranged from 14% in LFA 12 to 29% in LFA 14B.

Table 10: Lobster Enterprise Retirement Program - Capacity Reductions (Enterprises) by LFA.

LFA	Fleet Size Pre- Lerp	LERP Retirements	Fleet Size Post-LERP	Capacity Reduction
LFA 11	320	57	263	17.8 %
LFA 12	44	6	38	13.6 %
LFA 13A	148	39	109	26.4 %
LFA 13B	171	44	127	25.7 %
LFA 14A	203	49	154	24.1 %
LFA 14B	235	68	167	28.9 %
Total	1,121	263	858	23.5 %

In total, 24% or 57,300 lobster traps (Table 11) were retired under the enterprise buyback program. Just over one-half of the trap reductions occurred in LFA 14A and LFA 14B.

Table 11: Lobster Enterprise Retirement Program - Capacity Reductions (Traps) by LFA.

LFA	Post - VTRP Capacity (Traps)	Trap Reductions (LERP)	Post - LERP Capacity (Traps)	Capacity Reduction
LFA 11	59,200	10,545	48,655	17.8 %
LFA 12	5,940	810	5,130	13.6 %
LFA 13A	26,640	7,020	19,620	26.4 %
LFA 13B	37,620	9,680	27,940	25.7 %
LFA 14A	50,750	12,250	38,500	24.1 %
LFA 14B	58,750	17,000	41,750	28.9 %
Total	238,900	57,305	181,595	24.0 %

Overall, informants were pleased with the outcome of the LERP’s reduction of fishing effort. It was felt by all informants that the reverse auction approach was a key element in the success of the program. The reverse auction approach helped to establish a “fair market value” for enterprises being retired. Fish harvesters in the participating LFAs with lobster licences, who were interested in retiring their enterprises, were given an

opportunity to submit an offer of sale to the selected board indicating the price at which they would be prepared to sell their enterprise. Following the reception of offers of sale, it was determined how many enterprises could be purchased at each round with the funds available and according to its purchase criteria.

### Overall Reduction of Effort – VTRP and LERP

Overall, 36.5% of lobster traps were removed from the lobster fishery in the participating LFAs as a result of the Conservation and Sustainability Plan. The percentage of traps retired ranged from just less than one quarter (22.3%) in LFA 12 to almost half (49.2%) in LFA 14B (Table 12).

Table 12: Cumulative Capacity Reductions under the Conservation and Sustainability Plan by LFA.

LFA		Pre-Program	Post-Program	% Change
LFA 11	Trap Limit	200	185	-7.5%
	Enterprises	320	263	-17.8%
	Total Capacity	64,000	48,655	-24.0%
LFA 12	Trap Limit	150	135	-10.0%
	Enterprises	44	38	-13.6%
	Total Capacity	6,600	5,130	-22.3%
LFA 13A	Trap Limit	200	180	-10.0%
	Enterprises	148	109	-26.4%
	Total Capacity	29,600	19,620	-33.7%
LFA 13B	Trap Limit	250	220	-12.0%
	Enterprises	171	127	-25.7%
	Total Capacity	42,750	27,940	-34.6%
LFA 14A	Trap Limit	300	250	-16.7%
	Enterprises	203	154	-24.1%
	Total Capacity	60,900	38,500	-36.8%
LFA 14B	Trap Limit	350	250	-28.6%
	Enterprises	235	167	-28.9%
	Total Capacity	82,250	41,750	-49.2%
Total LFAs	Total Capacity	286,100	181,595	-36.5%

### Objective #2: Increased Economic Viability

*The VTRP and LERP had a significant impact on trap productivity and lobster earnings of small boat enterprises in the participating LFAs. Landings data of small boat enterprises from 2009 to 2013 showed an increase in trap production and average lobster earnings across all LFAs. It is also expected that other species licences retirements that were surrendered along with lobster licences*

**would have had an impact on the economic viability of the remaining harvesters but this secondary benefit was outside the scope of the current evaluation.**

As mentioned earlier, the ALSM Program was introduced by the Government of Canada in June 2009 in response to dramatic declines in the landed price of lobster across Atlantic Canada due to the 2008 global economic recession. In the case of the LERP program coverage area, lobster prices declined by about 35% in that year - to \$3.29 per lb from an average price of \$4.92 lb over the 2006 to 2008 period<sup>7</sup>. This decline amounted to a loss of \$9.3 million in total fleet revenue - from \$25.2 million on average over the 2006 to 2008 period to \$15.9 million in 2009.

The decline in 2009 lobster prices had a dramatic impact on the income levels of fish harvesters and the economic viability of small boat (under 40') fishing enterprises in LFA 11 to LFA 14B - where lobster accounted for 65% of annual enterprise revenues over the 2006 to 2008 period. The LERP was developed in an effort to secure ALSM funding to reduce the number of lobster-dependent fishing enterprises in these areas and thereby contribute to an increase in income levels for lobster harvesters and an improvement in the economic viability of the remaining lobster enterprises.

As shown below in table 13, the average productivity of lobster traps in all LFAs increased 35% from 2009 to 2013. This increase in productivity was broad in range including a slight increase of 6.9% in LFA 13A to 53.3% in LFA 12.

Table 13: Average Trap Productivity Pre and Post LERP.

LFA		Pre-Program	Post-Program	% Change
LFA 11	Total Capacity	64,000	48,655	-24.0%
	Average Productivity	33.7	45.6	35.3%
LFA 12	Total Capacity	6,600	5,130	-22.3%
	Average Productivity	36.8	56.4	53.3%
LFA 13A	Total Capacity	29,600	19,620	-33.7%
	Average Productivity	27.7	29.6	6.9%
LFA 13B	Total Capacity	42,750	27,940	-34.6%
	Average Productivity	19.5	21.4	9.7%
LFA 14A	Total Capacity	60,900	38,500	-36.8%
	Average Productivity	10.2	11.1	8.8%
LFA 14B	Total Capacity	82,250	41,750	-49.2%
	Average Productivity	6.3	8.2	30.2%
All LFAs	Total Capacity	286,100	181,595	-36.5%
	Average Productivity	18.1	24.5	35.2%

<sup>7</sup> Conservation and Sustainability Plan – A Proposal. Supplied by FFAW.

As shown in table 14, the average lobster earnings for small boat enterprises also increased across all LFAs from 2009-2013 with a slight increase of 0.5% in LFA 13B to a large increase of 29% in LFA 11.

Table 14<sup>8</sup>. Average Lobster Earnings for Small Boat Enterprises.

LFA		2009 Avg. Earnings	2013 Avg. Earnings	Avg. Earnings Change
LFA 11	All Species	\$31,640	\$40,587	28.3%
	Lobster	\$22,780	\$29,375	29.0%
LFA 12	All Species	\$47,281	\$37,479	-20.7%
	Lobster	\$20,995	\$26,075	24.2%
LFA 13A	All Species	\$26,708	\$30,029	12.4%
	Lobster	\$18,850	\$18,939	0.5%
LFA 13B	All Species	\$20,625	\$30,685	48.8%
	Lobster	\$14,532	\$17,417	19.9%
LFA 14A	All Species	\$18,833	\$24,855	32.0%
	Lobster	\$8,869	\$9,243	4.2%
LFA 14B	All Species	\$12,444	\$16,671	34.0%
	Lobster	\$6,155	\$6,866	11.6%

The observed increase in earnings from 2009 to 2013 can be attributed to the program and was not driven by an increase over these years in the landed value per pound of lobster. As mentioned above, the average landed value per pound of lobster decreased in advance of the 2009 fishing season and did not rebound as of the 2013 fishing season.

Table 15 has been developed to illustrate the possible understatement of the program's impact on revenues due to the depressed price of lobster and shows the impact the program could have had or could have on average enterprise revenues if prices were to return to previous levels.

Table 15. Hypothetical Revenue (lobster only) of Small Boat Enterprises at Pre-2009 Lobster Prices.

LFA	2009	2013	2009 – 2013 Change (%)	2013 Landings at pre-2009 Value / lb
LFA 11	\$22,780	\$29,375	29.0%	\$38,441
LFA 12	\$20,995	\$26,075	24.2%	\$37,295
LFA 13A	\$18,850	\$18,939	0.5%	\$26,304
LFA 13B	\$14,532	\$17,417	19.9%	\$24,265
LFA 14A	\$8,869	\$9,243	4.2%	\$13,659
LFA 14B	\$6,155	\$6,866	11.5%	\$10,296

<sup>8</sup> Average lobster dependence is calculated by percentage that lobster earnings account for in all species earnings

### Other Species Licences

Enterprise owners who elected to retire under the LERP were also required to surrender their snow crab and groundfish licences (and all associated IQs or catch limits); and all non-limited entry licences such as mackerel. Close to 500 other species licences (Table 16) were retired as a result of the LERP- including 196 fixed gear groundfish licences and 94 snow crab licences. It is expected that this program provision contributed to an improvement in the economic viability of harvesters that fish these other species in the program coverage area; however, this was outside of the scope of the current evaluation.

Table 16: Summary of Other Species Licence Retirements under the LERP.

Species <sup>9</sup>	Licence Retirements
Groundfish (Fixed Gear)	196
Snow Crab	94
Mackerel	120
Squid	35
Whelk	24
Eel	1
Smelt	1
Total	471

Key informants reported they had anecdotal evidence that harvesters were “better off” since the implementation of the Plan. Two key informants highlighted that it was not just the harvesters remaining in the fishery that were better off financially, but that the LERP supported those who wanted to retire but were financially unable to do so. They indicated that there are many harvesters in rural areas that wanted to retire but never had the means to do so and this program gave them the economic support they needed.

Another key informant suggested that one of the overlooked benefits of the LERP was the decreased debt load to other harvesters in the fishery. For example, when a harvester decides to retire they try and sell their lobster licence to another harvester. Harvesters often sell their licences at a cost above fair market value and leave another harvester with a large amount of debt. The informant felt that ridding the fishery of the harvesters that were willing and able to retire decreased the number of enterprises combining or new harvesters entering the fishery with a large debt load from the sale of overvalued licences.

All of the above research demonstrates that the VTRP and LERP combined had a dramatic impact on the income levels of harvesters and the economic viability of fishing enterprises in the active LFAs.

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<sup>9</sup> Excludes 243 bait licences.

## 4.2 Evaluation Question #2:

**Were the costs associated with the programs/projects under the Plan used effectively and efficiently?**

### **Summary Statement**

The costs associated with the implementation of the Plan were used effectively and efficiently. All planned projects/programs under the Plan were delivered and implemented within the expected time frame, and all within the expected budget.

All programs/projects indicated in the original proposal under the *Conservation and Sustainability Plan* were implemented as planned. The total budget allotted for the Plan was \$30.2 million; the Plan was fully implemented 7% under budget at a total of \$28.0 million (Table 17).

Table 17: Total Budget and Expenditures.

	Total Budget	2010-2011	2011-2012	2012-2013	2013-2014	Total Expenditures	Balance
Mgt. & Admin.	\$525,453	\$0	\$106,875	\$198,437	\$197,825	\$503,137	\$22,316
Conservation Strategy	\$1,743,663	\$518,250	\$121,342	\$396,114	\$376,136	\$1,411,842	\$331,821
Voluntary Trap Reduction	\$11,371,290	\$0	\$11,371,290	\$0	\$0	\$11,371,290	-
Enterprise Retirement - LFA's 11 & 12	\$4,911,930	\$0	\$0	\$3,096,898	\$1,551,500	\$4,648,398	\$263,532
Enterprise Retirement - LFA's 13 & 14	\$11,619,553	\$0	\$0	\$6,047,735	\$4,043,051	\$10,090,786	\$1,528,767
<b>TOTAL</b>	<b>\$30,171,889</b>	<b>\$518,250</b>	<b>\$11,599,507</b>	<b>\$9,739,184</b>	<b>\$6,168,512</b>	<b>\$28,025,453</b>	<b>\$2,146,436</b>

The overall management and administration of the implementation of the Plan was budgeted at \$525,453. The program was delivered at a cost of \$503,137 - 5% under budget.

The *Conservation Strategy*, including the Mandatory Log Book Program, Harvester Science Field Book Program, At-Sea Sampling Program and the Fisheries Stewardship Program, had a budget of \$1,743,663 and came in at a cost of \$1,411,842 - almost 20% under budget.

The Voluntary Trap Reduction Program budget was set by DFO. DFO assigned the value of a lobster trap in each LFA based on the average value of lobster landings over a set time period. Since all LFAs agreed to cut their traps the expected budget of \$11,371,290 was expended as planned.

Overall, the LERP enterprise retirement target was exceeded by 3% with an expenditure of only 90% of program funds - \$16.5 million budget versus expenditures of \$14.7 million.

In addition, the LERP Contribution Agreements stipulated that no more than 20% of the funding in any LFA could be used for the purchase of inactive enterprises. Only 12 of the 263 enterprises retired under the LERP were deemed to be inactive by DFO and only 3% of program funding was used to retire these enterprises.

All key informants thought that the budget was spent both effectively and efficiently as it was done on time, under budget, and met its anticipated targets. However, it is worth noting that while two informants indicated that they thought the budget was sufficient to meet the goals of the program, highlighted that DFO and DFA administrative time was not allotted for in the budget and the in-kind support was much higher than expected.

### 4.3 Evaluation Question #3:

How did LERP perform in relation to:

- Its target achievement?
- Industry response and participating?
- The effectiveness of the reverse auction approach?
- Overall performance?
- Its impact on the NL lobster fishery?

#### **Summary**

Overall, the LERP enterprise retirement target was exceeded by 3% and this target was exceeded with an expenditure of only 90% of program funds. Individual targets in four of the six LFAs were also reached. The two areas that did not reach their target were in LFA 12 and LFA 14B.

The findings from this evaluation show that the LERP was well received by harvesters and participation was successful across all LFAs. Interest in the program was strong with almost 2,000 retirement bids and approximately 45% of all licence holders electing to submit at least one bid.

Evidence supports that the reverse auction approach was an effective means in meeting the objectives of the Plan. The use of the reverse auction resulted in the enterprise retirement targets being exceeded and at a cost that was 10% lower than the amount projected. There was overwhelming agreement expressed by key informants on the effectiveness and success of the LERP due to the reverse auction approach.

Overall, the Lobster Enterprise Retirement Program was considered highly relevant to the needs of the sector and successfully reached its objectives of reducing fishing effort and increasing economic viability in the participating LFAs.



## Did LERP meet its target?

The initial program targets for the LERP, as outlined in federal and provincial Contribution Agreements, projected that a total of 282 enterprises would be retired at a cost of approximately \$16.5 million. These targets were revisited in 2012 (Round Four) based on the limited success that had been achieved in LFA 14B due to higher bids than allotted for. At this time the Executive Committee elected to revise the program targets in LFA 14B (Table 18) from 98 enterprises to 71 and increase the average enterprise price from \$41,823 to \$57,727. This revision resulted in a 10% decrease in the overall projected retirement target - from 282 to 255 enterprises.

Table 18: LERP Budget and Projected Take-Up by LFA.<sup>10</sup>

LFA	Program Budget	Retirement Target	Average Enterprise Price
LFA 11	\$4,212,000	55	\$76,582
LFA 12	\$699,930	9	\$77,770
LFA 13A	\$2,044,237	31	\$65,943
LFA 13B	\$2,692,679	41	\$65,675
LFA 14A	\$2,784,000	48	\$58,000
LFA 14B (Revised)	\$4,098,637	71	\$57,727
Total	\$16,531,483	255	\$64,829

A total of 263 approved bidders (Table 19) accepted the retirement offer and subsequently relinquished their fishing enterprise and lobster licence to DFO. Licence retirement payments totalling \$14.7 million were issued to these bidders. The average bidder received a LERP payment of \$56,042.

Table 19: Lobster Enterprise Retirement Program - Capacity Reductions by LFA.

LFA	Program Target	LERP Retirements	Target Reached	Expenditures Budget	Expenditures Actual	Total Budget Expended
LFA 11	55	57	4%	\$4,212,000	\$4,147,398	-2%
LFA 12	9	6	-33%	\$699,930	\$501,000	-28%
LFA 13A	31	39	26%	\$2,044,237	\$1,966,293	-4%
LFA 13B	41	44	7%	\$2,692,679	\$2,246,000	-17%
LFA 14A	48	49	2%	\$2,784,000	\$2,437,516.64	-12%
LFA 14B	71	68	-4%	\$4,098,637	\$3,440,974.99	-16%
Total	255	263	3%	\$16,531,483	\$14,739,182.63	-11%

<sup>10</sup> The program budget excludes a program administration budget of \$525,452.

Overall, the LERP enterprise retirement target was exceeded by 3% (255 projected retirements versus 263 actual retirements) and this target was exceeded with an expenditure of only 90% of program funds - \$16.5 million budget versus expenditures of \$14.7 million.

The enterprise retirement target was exceeded in four of the six LFAs covered by the LERP. Details of the success of the program at the LFA level are as follows:

- In LFA 11, the target was exceeded by 4% with the expenditure of 98% of the program funds.
- In LFA 13A, the target was exceeded by 26% with the expenditure of 96% of the program funds.
- In LFA 13B, the target was exceeded by 7% with the expenditure of only 83% of the program funds.
- In LFA 14A, the target was exceeded by 2% with the expenditure of 88% of the program funds.

The program did not meet its enterprise retirement target in LFA 12 and LFA 14B. A key informant (project manager) indicated that there was a lower level of interest in the retirement option in LFA 12 because lobster productivity is high and therefore the private market for lobster licences is strong. It is also noted that LFA 12 was the smallest participating LFA and while the program missed its target in this LFA by 33%, this was only three enterprises.

The key informant also indicated that in LFA 14B, the number of licence retirements was impacted primarily by a limit or cap on the dollar amount of the federal contribution. There was interest in the program but harvesters were not willing to retire their licence for the top price offered. The target was missed by 4%, or three enterprises, in this LFA.

### **To what extent did LERP receive buy-in and participation from industry?**

Key informants noted that while the program was successful in the end, the key to success was the buy-in received from the LFAs on the VTRP to obtain the funding needed to support the LERP. In the winter of 2010, FFAW conducted “hundreds” of meetings to promote voluntary trap reductions across the board in the active LFAs which would then be used to finance the lobster enterprise retirement program. Through this process, prior to the start of the 2011 fishing season, harvesters in LFA 13A to LFA 14B adopted the reductions in the lobster trap limits in their respective areas. It was more difficult to receive buy-in in LFA 11 and 12 but the similar trap reductions were adopted by licence holders at the end of the 2011 season.

**“We [FFAW] received buy-in from the LFAs faster than I would have ever thought. The harvesters knew there was a value in reducing catch effort, but more so, they knew that by reducing the number traps, it could help reduce the overall number of enterprises in the fishery”**

A total of 10 bidding rounds were conducted between December 12, 2011 and January 15, 2014 under the enterprise retirement program. Interest in the program was strong across all LFAs with close to 1,800 retirement bids (Table 20) submitted for consideration. The number of competitive bid submissions were particularly high in LFA 13A and LFA 13B where the program concluded after Round 7 and in LFA 11 where the program concluded after Round 9.

Table 20: Distribution of LERP Bid Submissions by Bidding Round and LFA.

LFA	Bidding Round										Total
	1	2	3	4	5	6	7	8	9	10	
LFA 11	68	51	35	21	23	22	22	21	18	-	281
LFA 12	13	11	9	8	7	6	4	5	4	5	72
LFA 13A	49	42	27	20	16	11	11	-	-	-	176
LFA 13B	69	58	36	24	30	19	20	-	-	-	256
LFA 14A	80	61	35	32	32	42	41	49	35	32	439
LFA 14B	74	80	61	60	49	44	42	65	51	44	570
Total	353	303	203	165	157	144	140	140	108	81	1,794

Overall, close to 45% of the lobster licence holders in the program coverage area elected to submit at least one bid under the LERP (Table 21). The participation rate ranged from close to one-third of the fleet in LFA 11 to over one-half of the fleet in LFA 14B.

Table 21: LERP Participation Rate by LFA.

LFA	Enterprises	Bidders	Non-Bidders	Participation Rate (%)
LFA 11	320	96	224	30%
LFA 12	44	17	27	39%
LFA 13A	148	61	87	41%
LFA 13B	171	85	86	50%
LFA 14A	203	110	93	54%
LFA 14B	235	130	105	55%
Total	1,121	499	622	45%

## How effective was the reverse auction approach?

The LERP was delivered by a competitive reverse auction bidding process. The reverse auction allowed individual lobster licence holders to determine a price they would accept to retire their fishing enterprise and then submit an Offer to Sell Application to the board. The board would then decide if it would accept or decline the offer based on a relativity factor. The relativity factor measured the degree to which the bid fell below or above the projected average enterprise price for a given LFA. For example, a bid of \$80,000 from LFA 11 when divided by \$76,582 (the projected average enterprise price for this LFA) resulted in a relativity factor of 1.04. This demonstrated that the bid was 4% above the projected average enterprise price in LFA 11. An identical bid of \$80,000 from LFA 14B, on the other hand, resulted in a bid value relativity factor of 1.39 which demonstrated that the bid was 39% above the average enterprise price for this LFA.

This reverse auction approach was used in the 1990s to deliver several federal groundfish licence retirement programs. A key informant expressed that the reverse auction was selected because it represented the best way to maximize the number of enterprise retirements, with the limited funding available, while at the same time providing enterprise owners with “fair market value” for their enterprise.

Approximately 17% (300 bids) of the bid submissions were accepted by the Executive Committee (Table 22). Upon approval, an Enterprise Retirement Agreement was forwarded to enterprise owners who had submitted a competitive bid submission. Approved bidders were provided with three weeks to accept the retirement offer and to relinquish their enterprise and licences. Thirty seven (37) or just over 12% of the approved bidders subsequently elected to decline the board’s enterprise retirement offer. The value of the declined retirement offers totaled \$2.5 million.

A few key informants indicated that the reverse auction was a resource heavy process. They expressed that while a set-rate process would have been much less time and resource intensive they still felt that a set-rate process would not have resulted in as many enterprise retirements.

Table 22: Distribution of Accepted LERP Bid Submissions by Bidding Round and LFA.

LFA	Bidding Round										Total
	1	2	3	4	5	6	7	8	9	10	
LFA 11	1	10	13	10	4	8	6	4	8	-	64
LFA 12	-	-	-	1	2	2	1	-	2	4	12
LFA 13A	-	10	9	6	10	5	3	-	-	-	43
LFA 13B	1	4	20	8	7	4	9	-	-	-	53
LFA 14A	5	4	9	2	-	6	8	10	2	11	57
LFA 14B	1	3	3	14	5	5	5	8	14	13	71
Total	8	31	54	41	28	30	32	22	26	28	300

**“By using a reverse auction you get the biggest bang for the buck. Harvesters had to take the least amount they were willing to take to leave the fishery. If we had offered a set-rate we would have paid out more in many cases and would not have gotten some of the higher bidders to participate.”**

### How did LERP perform overall?

Key informant interviews supported that the LERP was highly relevant to the harvesters in NL as there was excess capacity in the fishery and fleet rationalization was needed in active LFAs. All informants expressed the program was highly successful in reducing catch effort and reducing the number of enterprises in the industry.

As mentioned above, overall the LERP enterprise retirement target was exceeded by about 3% and the target was exceeded with an expenditure of only 90% of the program’s budget. The enterprise retirement target was exceeded in four of the six LFAs covered by the LERP. Key informants reported that the collaboration between DFA, DFO, and FFAW was a key component of the program and that the program may not have been so successful without all of the players.

### How did LERP perform in relation to its impact on the NL lobster fishery?

The reduction in total fishing effort had significant positive effects on earnings across all the LFAs. While VTRP and LERP both contributed to the reduction in total capacity, the effect of LERP was much larger. VTRP alone would have decreased total capacity from 286,100 traps to 238,900 (a decrease of 16.5%). Retirement of enterprises through LERP accounted for the remainder of the decrease in capacity to 181,595 (a further 24.0% reduction). Fewer competing enterprises allowed for a decrease in fishing effort while simultaneously increasing the economic viability of LFAs. See Section 4.1, Objective #2 under *Sustainability Strategy*, for more detail on the impact of the LERP on the average trap productivity and lobster earnings.

#### 4.4 Evaluation Question #4:

### Were there any unplanned costs and benefits associated with the implementation of the Plan?

#### **Summary**

In general, key informants reported few unplanned costs or benefits that were associated with the implementation of the Plan. The lone unplanned cost mentioned throughout the evaluation was the large amount of in-kind administrative time encountered by all organizations. The primary unplanned benefit noted was the success of the funding/implementation model, and the potential for this model to be used for future fleet rationalization programs.

Most informants could not think of any unplanned costs associated with the implementation of the Plan.

Two informants indicated there was a large unplanned cost incurred through in-kind administrative time encountered by all organizations. It was noted that if this model were to be used again an administrative budget should be allotted for all partners.

The primary unplanned benefit reported by key informants was that the implementation of the Plan demonstrated the success of government and industry working jointly on fleet rationalization. The success of this initiative was due, in large part, to the fact that it was developed and implemented on a collaborative basis between industry, the Government of NL, and the Government of Canada. In this regard, it was felt among most key informants that the *Conservation and Sustainability Plan* provided a unique model which should be considered for use in further fleet rationalization and restructuring programs in future.

**“I believe this project was a turning point for our industry. It proved the concept for fleet rationalization with financial support from the industry and implementation from the union. I wouldn’t have changed a thing.”**

Another unplanned benefit of the Plan was that the remaining FFAW funding was used to support a new industry lead fleet rationalization program, the Fisheries Income Improvement Program (FIIP). The goal of the FIIP is to pair up with fishers who want to sell their fishing enterprises for fair market value with a group of fishers who seek to purchase a part of this enterprise. FIIP is currently a pilot project and is available to fishers on the west coast. To participate, the seller must be willing to sell their entire suite of licences.

Informants also identified early retirements as an unplanned benefit as many harvesters stay in the industry until old age because it is their livelihood and they cannot afford to live without it. Informants suggested that this program helped many people retire that would not have been able to leave the fishery otherwise.

Lastly, one informant noted that the large number of retirements increased safety measures by having fewer enterprises on the water.

## 5. CONCLUSION

In 2011, the Government of Newfoundland and Labrador and the Government of Canada reached an agreement with the Fish, Food and Allied Workers Union on a *Conservation and Sustainability Plan for the Newfoundland Lobster Fishery*. The Conservation and Sustainability Plan was jointly funded by industry and both levels of government at a cost of \$30 million. The Plan consisted of two elements: a *Conservation Strategy* and a *Sustainability Strategy*.

The evidence collected throughout this report indicates that the programs/projects outlined in the Plan were all executed as planned and for the most part all targets and outcomes have been reached.

Through the *Conservation Strategy*, the FFAW was able to educate harvesters on increasing the biological productivity of lobsters and how to reduce their ecosystem impacts to increase the sustainability of the lobster fishery in NL. They also introduced a Mandatory Log Book Program, and expanded the Harvester Science Field Book Program, and At-Sea Sampling Pilot Program to develop reliable data sets to adequately assess the lobster resource in Newfoundland and Labrador and further strengthen the lobster conservation regime for the future.

Through the *Sustainability Strategy*, the FFAW was able to directly remove fishing effort through the VTRP and LERP. These programs combined resulted in removing close to 37% of lobster traps in the participating areas. The reduction in total fishing effort has had significant positive effects on earnings across all the LFAs. Fewer competing enterprises has simultaneously allowed for a decrease in fishing effort while increasing the economic viability of LFAs.

The use of the reverse auction approach for LERP was thought to be instrumental in the success of the program as it resulted in the enterprise retirement targets being exceeded at a cost 10% lower than the amount projected.

The *Conservation and Sustainability Plan* demonstrated that it is possible for government and industry to work jointly on fleet rationalization. The success of this initiative was due, in large part, to the fact that it was developed and implemented on a collaborative basis between industry, the Government of NL and the Government of Canada. In this regard, the *Conservation and Sustainability Plan* provides a unique model which should be considered for use in further fleet rationalization programs in future.

## APPENDIX A – KEY INFORMANT INTERVIEW GUIDE



## EVALUATION OF THE CONSERVATION AND SUSTAINABILITY PLAN FOR THE NEWFOUNDLAND LOBSTER FISHERY INTERVIEW GUIDE

### Introduction

Thank you for taking the time to meet with me. As you know, MQO Research has been contracted to conduct an evaluation of the Conservation and Sustainability Plan for the Newfoundland Lobster Fishery by the Department of Fisheries and Aquaculture, Government of Newfoundland and Labrador.

The primary objective of the Plan was to encourage long-term sustainability and economic prosperity for the lobster fishery by supporting conservation practices that maintain and enhance lobster stocks, and improve catch monitoring and fishing effort reporting.

The objective of this evaluation is to assess the outcomes of the Plan.

You have been identified as an individual who may be able to assist in the evaluation because of your involvement in the program. The information you provide is for evaluation purposes only and will be administered in accordance with the applicable privacy laws. No administrative decisions will be made about any individual or organization as a result of this evaluation. Your specific interview responses will not be shared with the client, nor will they be attributed to you as an individual in any evaluation report resulting from this study.

We anticipate that the interview will be up about 45 minutes in length.

Your input will contribute to the success of this evaluation process and we thank you for your participation.

### Introduction

1. Would you please describe your role with your current organization? How long have you been in this role?
2. What is your role in respect to the Conservation and Sustainability Plan?

### Relevance

3. To what extent do you feel the Plan is relevant to the needs of lobster harvesters in NL? Why do you say this?

## Outcomes

The next few questions focus on the outcomes being achieved by the Plan.

4. Which of the following programs under the Plan can you speak about the outcomes?

### Conservation Programs

- a. V-notching Program
- b. Mandatory Log Book Program
- c. Voluntary Harvester Science Felid Book Program
- d. At-Sea Sampling Pilot Program
- e. FFAW/CAW Fisheries Stewardship Program

### Sustainability Programs

- a. Voluntary Trap Reduction Program
- b. Lobster Enterprise Retirement Program

## Conservation Programs

5. To what extent do you feel the **V-notching** Program improved prospects for biological productivity of lobster stocks in all of NL Lobster Fishing Area (LFAs)? Please explain.

*Prompt: Did this differ between LFAs?*

6. To what extent do you feel the **Mandatory Log Book Program** increased data and information availability to help sustain and conserve the lobster fishery? Please explain.

*Prompt: Did this differ between LFAs?*

7. To what extent do you feel the **Voluntary Harvester Science Felid Book Program** increased data and information availability to help sustain and conserve the lobster fishery? Please explain.

*Prompt: Did this differ between LFAs?*

8. To what extent do you feel the **At-Sea Sampling Pilot Program** increased data and information availability to help sustain and conserve the lobster fishery? Please explain.

*Prompt: Did this differ between LFAs?*

9. To what extent do you feel the **FFAW/CAW Fisheries Stewardship Program**

- a. Increased harvester led conservation initiatives? Please explain.
- b. Reduced ecosystem impacts? Please explain.

*Prompt: Did this differ between LFAs?*

10. To what extent do you feel the programs/projects under the **Conservation Strategy** (programs just mentioned) enhanced conservation and sustainability of the NL Lobster Fishery? Please explain.
11. Were there lessons learned throughout implementation of the Conservation Strategy?
12. Were you involved with cost and budgeting for any of the programs under the Conservation Strategy?
13. If Q12 = Yes
  - a. Which ones?
  - b. Was the project (s) delivered efficiently within budget? Please explain.  
***Effective:** Adequate to accomplish a purpose; producing the intended or expected result.*
  - c. Was the project (s) delivered effectively within budget? Please explain  
***Efficient:** Performing or functioning in the best possible manner with the least waste of time and effort.*

### Sustainability Programs

14. To what extent do you feel the **Voluntary Trap Reduction Program:**
  - a. Reduced fishing effort for the participating LFAs? Please explain.
  - b. Increased economic viability of remaining harvesters? Please explain.  
*Prompt: Did this differ between LFAs?*
15. Were there any lessons learned through the implementation of the **Voluntary Trap Reduction Program?**
16. To what extent did the **Lobster Enterprise Retirement Program (LERP)** meet its target?  
*Prompt: Did this differ between LFAs?*
17. To what extent did the **LERP** receive buy-in from the LFAs?  
*Prompt: Did this differ between LFAs?*
18. How effective do you feel the reverse auction processes was?  
*Prompt: Did this differ between LFAs?*
19. To what extent do you feel the **LERP**
  - a. Reduced fishing effort for the participating LFAs? Please explain.
  - b. Increased economic viability of remaining harvesters? Please explain.
20. Were there lessons learned throughout implementation of the **LERP?**

21. Were you involved with cost and budgeting for **LERP**?

22. If Q12 = Yes

a. Was the project (s) delivered efficiently within budget? Please explain.

***Effective:** Adequate to accomplish a purpose; producing the intended or expected result.*

b. Was the project (s) delivered effectively within budget? Please explain

***Efficient:** Performing or functioning in the best possible manner with the least waste of time and effort.*

23. Were there any unplanned **costs** associated with the implementation of the Plan?

24. Were there any unplanned **benefits** associated with the implementation of the Plan?

## Conclusion

25. To date, has there been any follow up to the Plan or new programs stemming from the Plan? Please explain.

26. Is there anything that I have missed that you feel would be useful information for me to have for the evaluation of the Plan?

27. Are there any documents or data that you feel I should review for this evaluation that you have no already provided.

28. Do you have any other comments or questions?

*This is the end of the interview. Thank you very much for taking the time to talk with me.*