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Proceedings of the Regional Peer Review Meeting on the Assessment of Lobster in Quebec's Inshore Waters in 2022 and Advice for the 2023 to 2025 Fishing Seasons

**February 28 – March 3, 2023
Mont-Joli, Quebec**

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Foreword

The purpose of these Proceedings is to document the activities and key discussions of the meeting. The Proceedings may include research recommendations, uncertainties, and the rationale for decisions made during the meeting. Proceedings may also document when data, analyses or interpretations were reviewed and rejected on scientific grounds, including the reason(s) for rejection. As such, interpretations and opinions presented in this report individually may be factually incorrect or misleading, but are included to record as faithfully as possible what was considered at the meeting. No statements are to be taken as reflecting the conclusions of the meeting unless they are clearly identified as such. Moreover, further review may result in a change of conclusions where additional information was identified as relevant to the topics being considered, but not available in the timeframe of the meeting. In the rare case when there are formal dissenting views, these are also archived as Annexes to the Proceedings.

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SUMMARY

This document outlines the proceedings of the regional peer review meeting on the assessment of the lobster stocks in Quebec's inshore waters. This meeting, which was held on February 28 to March 3, 2023 at the Maurice-Lamontagne Institute in Mont-Joli, as well as by videoconference, brought together about thirty participants from DFO Science and Management branch, fishing industry, Indigenous groups and university. These proceedings detail the essential parts of the presentations and discussions held during the meeting, as well as the recommendations and conclusions made.

INTRODUCTION

The Quebec Region of Fisheries and Oceans Canada (DFO) is responsible for assessing several stocks of fish and invertebrate species harvested in the Estuary and Gulf of St. Lawrence. Most of these stocks are periodically assessed as part of a regional advisory process that is conducted at the Maurice Lamontagne Institute in Mont-Joli. This document outlines the proceedings of the meeting on the assessment of the lobster stocks in Quebec's inshore waters held on February 28-March 3, 2023.

The objective of the meeting was to determine whether there were any changes in the resource's status and whether adjustments were required to the management plans based on the chosen conservation approach, with the ultimate goal being to provide a science advisory report on the management of the Quebec coastal waters lobster stocks for the 2023 to 2025 fishing seasons.

These proceedings report on the main points discussed in the presentations and deliberations stemming from the activities of the regional stock assessment committee. The regional peer review meeting is a process open to all participants who are able to provide a critical outlook on the status of the assessed resources. Accordingly, participants from outside DFO are invited to take part in the committee's activities within the defined framework for this meeting (Appendices 1 and 2). The proceedings also list the recommendations made by the meeting participants.

ASSESSMENT

Chair Cédric Juillet welcomed the participants and went over the objectives and process for the science review. The participants were then asked to introduce themselves. The assessment biologist, Benoit Bruneau, highlighted the contributions of the collaborators, and presented the agenda and the terms of reference.

In Quebec, lobster fishing is carried out by over 580 fishers working along the coasts of the Magdalen Islands, Gaspé Peninsula, North Shore and Anticosti Island. Quebec waters are divided into eight lobster fishing areas (LFAs). Lobster is fished in shallow water using traps, and the fishery is managed by controlling fishing effort and implementing escapement measures. Lobster landings in Quebec in 2022 totalled 11,984 t. The Magdalen Islands (MI) account for 56% of these landings, while the Gaspé Peninsula ranks second with 32%. Anticosti and the North Shore account for 8% and 5% of the total landings, respectively.

Benoît Bruneau presented the conservation framework for lobster, the purpose of which is to protect berried females. He went over several aspects of lobster biology (distribution, reproduction, larval stage and growth). Some of the biological data may require updating in the current context (climate change). The indicators (abundance, demography, exploitation rates and productivity) used to assess stock status are derived mainly from fishery statistics and data from the at-sea and dockside sampling of commercial catches and logbooks (mandatory and voluntary), as well as trawl and dive surveys in the Magdalen Islands, and a post-season survey and experimental trap projects in the Gaspé region. The methods used to calculate certain indicators, including the catch per unit effort (CPUE), density (trawl), size structure and exploitation rate, were reviewed for participants.

For each area (MI, Gaspé Peninsula, Anticosti, North Shore), Mr. Bruneau briefly presented the highlights of the last assessment, which took place in 2018, the management measures and the data available for estimating indicators. The biologist then reviewed the results obtained for each indicator category (abundance, demographics, exploitation rate and productivity). Given

that most of the indicators are based on fishing data, he also referred to fishing effort (number of fishing trips and traps) and includes environmental data (temperature during the fishing season, data on rock crab as an important prey). Questions and comments by the participants were documented in the proceedings for each category of indicator. A summary of the current stock status concluded the presentations for each area and advice was formulated.

MAGDALEN ISLANDS (LFA 22)

Environmental data

The number of degree days in the 2018 and 2019 fishing seasons were lower than the 25-year average but, for the 2020 fishing season, higher than average.

The size structures for rock crab derived from the trawl survey in subareas A and B of that fishery suggest that sub-legal-size rock crabs are scarce. Furthermore, CPUE values in the commercial rock crab fishery have been declining since 2020 and, in 2022, were below the average for the 1998–2021 period.

- It was noted that obtaining data on rock crab bycatch would be helpful.
- Questions were raised about the difference between the CPUE and trawl survey data in 2019 and 2020, although it was noted that the trends were similar. Catchability may have been lower in the trawl survey in recent years.
- Participants were told that size structures could not be generated from the trawl survey data this year. According to some participants, these data would be useful in order to better evaluate the lack of small crabs.
- It was agreed that the relative density graphs indicate a problem in recruitment to the population in recent years, which was worrisome.

Abundance indicators

Landings reached a historic high of 6,715 t in 2022, which is 126.5% higher than the 25-year average for a fishing effort that has been on the rise since 2020. The increase in landings between 2018 and 2022 was greater in the north (69.8%) than in the south (26.5%).

In 2022, for the Islands as a whole, the capture per unit effort (CPUE) in weight for commercial sampling was higher (29.2%) than in 2018 and 139.4% higher than the average of the historical series (1985–2021).

The density of commercial lobsters in the trawl survey showed a strong increase from 2014 to 2019. Since then, the density has decreased to 14.4 lobsters/1000 m² in 2022, which remains 37.1% higher than in 2018 and 80% higher than the average for the 1995–2021 period.

- According to some participants, the CPUE values in the south appear to indicate a flattening trend there.
- It would be interesting to examine the possible link between CPUE values and environmental data (e.g. temperature).

Demographic indicators

The demographic indicators show that the average size of commercial lobsters sampled during the fishery was 92.3 mm in 2022, stable since 2017. In the trawl survey, the 2022 value is higher than in 2018, and close to the maximum observed in 2013.

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- It was noted that the diverging trends in average size in the north and south appear to correspond to the levelling off of landings and CPUE values in the south. This could suggest that recent recruitment is greater in the north.
 - The uncertainty surrounding the 2021 trawl survey was noted.
 - Participants were reminded that the trawl survey was not conducted in the north.
 - The participants deemed the average size derived from the trawl survey to be comparable to that in 2013, and to be among the highest values recorded.
 - Participants were reminded that, concerning the graph showing the percentage of jumbo lobsters (“jumbos”), large individuals may have lower catchability. Additionally, berried females may be less available to the trawl. Participants remained relatively unconcerned about the situation.
 - It would be useful to have a table attached that shows the absolute values for jumbos.
 - There was agreement that the abundance of jumbos increased until 2007 and then stabilized.
 - Participants did not appear to be particularly concerned about the sex ratio.

Fishing pressure indicators

The fishing pressure indicator shows a slight decline in exploitation rates since 2005. The 2021 rates (south: 59%, north: 60.3%) were comparable to those in 2017 and 2018. In 2021, the exploitation rate in the north was equal to the average for the 1985–2021 period, while the rate in the south was 6.4% lower than the average for the same period.

Productivity indicators

The productivity indicators remained high. For the Islands as a whole, theoretical egg production in 2022 was 1.7 times higher than in 2018 and 6.8 times higher than during the 1994–1996 period. However, a decline in individual mating success has been observed since 2004.

The indicators of pre-recruitment to the fishery in 2022 (pre-recruitment one year before entering the fishery [PR1] = 12.4 lobsters/1,000 m²) were 14.1% higher than in 2018, and 132.8% higher than the 1995–2021 average. The benthic recruitment index has been stable since 2018, showing consistently high levels.

- It was noted that updating the maturity ogive would be beneficial. In the interim, berried females (e.g. minimum size) could be used as an indicator.
- With respect to mating success, it appears that a density-dependent factor could explain the observed decrease. The 2021 sample was still considered valid. It was pointed out that, in 2018, the methodology was changed so that smaller females were sampled.
- Participants wondered about the factors influencing mating success aside from the sex ratio (e.g. availability of shelter and behaviour).
- More lobsters were observed on sandy bottoms, in addition to the typical rocky bottoms where they are found, indicating a possible saturation of the sites. The participants wondered about the possibility of the environment’s carrying capacity being reached. For now, these are just suppositions.
- On the basis of the strength of the 0+ and 1+ cohorts, particularly the weak cohorts recorded in 2015, the catch in 2023 may be lower than that in 2022. However, it was noted that

caution must be exercised when predicting the outcome of the fishery based on this graph, as many factors can influence the 0+ and 1+ cohorts over time.

Precautionary approach

According to the precautionary approach, the Magdalen Islands lobster stock is currently in the healthy zone.

- According to Management, the precautionary approach might need to be updated.

Summary and advice – Magdalen Islands

The key points of the assessment are presented and the participants suggest some changes. Only comments on substance (and not form) are reported.

- The key point on landings was to be compared with the average for the last 25 years, indicating the quantity in parentheses along with the corresponding years: (2,994 t, 1997–2021).
- The CPUE values should be compared with the 1985–2021 average and expressed in weight, and the information on the CPUE in numbers should be removed.
- With respect to density, which was to be covered in a separate key point, it was agreed that the wording should state that a strong increase occurred from 2014 to 2019, and that a reference should be made to the 1995–2021 period.
- Regarding the demographic indicators, there was agreement that the wording should read that the average size of lobsters obtained from commercial sampling in 2022 was 92.3 mm, and has been stable since 2017. It was decided that, in the part on the trawl survey, the 2022 value was to be compared with that of 2018, and it was to be noted that this value is close to the maximum observed in 2013.
- With respect to the exploitation rates, a statement that the 2021 rates were comparable to the 2017 and 2018 values was to be added.
- In the key point on productivity indicators, theoretical egg production in 2022 was to be compared with that in 2018 and in 1994–1996. In addition, a statement should be added to the effect that a decrease in individual mating success has been observed since 2004.
- Factual information was to be added on pre-recruitment indices and benthic recruitment, but the participants decided that no predictions should be made.
- A factual approach was to be adopted with respect to the key point on temperature, by referring simply to the number of degree days in the 2018, 2019 and 2020 fishing seasons compared with the average for the last 25 years.
- The key point on rock crab was reworded to first indicate that small rock crab are a major prey item for lobster. The low abundance of sub-legal-size individuals must be emphasized. Reference should then be made to the decline in commercial crab CPUE values since 2020 and the fact that, in 2022, the value fell below the 1998–2021 average.
- The participants wondered what type of advice should be formulated for rock crab, since it is not clear in the Terms of Reference. From an ecosystem perspective, the participants felt that concerns should be raised about the low abundance of small crabs and the possible saturation of lobster habitats. Since the lobster stock is in the healthy zone, Management has all the latitude needed to try to remedy the situation. The possibility of adjusting the effort should be considered.

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- In conclusion, three key points were formulated: (1) the health of the lobster stock, by drawing on abundance and productivity indices, as well as the precautionary approach (healthy zone), and by referring to the difference between fishing yield trends in the north and south since 2021, with trends being better in the north; (2) the worrisome status of rock crab, one of the main prey species of lobster, examined in the context of an ecosystem approach; and (3) the recommendation aimed at ensuring the sustainability of the lobster stock and that of its preferred prey species. The participants think that all exceptional measures should be considered to minimize mortality rates in rock crab.

Ultimately, the participants came to the following **conclusion**:

Given the high and increasing abundance and productivity of the Magdalen Islands lobster stock, it can be concluded that it is in good condition for the current harvest levels. However, since 2021, a discrepancy has been observed in trends in fishing yields in the northern and southern portions of the Magdalen Islands, with trends being better in the north. According to the precautionary approach, the Magdalen Islands lobster stock is currently in the healthy zone.

The indicators of the health of the rock crab population in the Magdalen Islands were reviewed from the perspective of the ecosystem approach. The status of this population, which is one of the main prey species for lobster, is of great concern.

To ensure the sustainability of the lobster stock and that of its preferred prey species and preserve the trophic link between these species, all exceptional measures should be considered to minimize rock crab mortality.

GASPÉ (LFAS 19, 20 AND 21)

Environmental data

The number of degree days in the 2022 fishing season (284 DD) was 7.2% lower than the average for the last 25 years.

Despite the low fishing effort observed in recent years in the Gaspé region, the size structures derived from dockside sampling suggest a low abundance of sub-legal-size rock crabs in LFA 19. In addition, CPUE values in the commercial rock crab fishery have been declining in this LFA since 2017 and, in 2022, were below the average for the 2000–2021 period. However, these trends were not observed in LFAs 20 and 21.

- Industry representatives suggested that the mild fall temperatures could have an impact on the following season. It was mentioned that the links between environmental variables and the stock would be explored further in the future using the ecosystem approach, referring notably to the ongoing work by doctoral student Alejandro Yanez.
- It was mentioned that the fishing effort for rock crab is highly variable in the Gaspé region. The CPUE was lower than that recorded in the Magdalen Islands. This may be a matter of habitat availability and competition with lobster. Participants were reminded that the Magdalen Islands and Gaspé Peninsula ecosystems are vastly different.
- It was mentioned that, in addition to small rock crabs, lobster may also consume larger individuals in the process of moulting. In the future, the predator-prey relationship between the two species will be an increasing focus under the ecosystem approach.

Abundance indicators

Landings are up sharply in 2022, reaching one of the highest values in the historical series, at 3,796 t. In 2022, landings were 64.1% higher than in 2018 and 169.9% higher than the average

of the last 25 years (1993–2021). Fishing effort has been stable since 2019 at 2.34 million traps, which is 23.1% below the 1994–2005 average. In 2022, 75.6% of Gaspé landings came from LFA 20, 9.9% from LFA 21 and 14.5% from LFA 19.

For the entire Gaspé area, the catch per unit effort (CPUE) in weight from commercial sampling has been rising sharply since 2014. In LFA 19C, the CPUE in 2022 was 33% higher than in 2018. In LFA 20, the CPUE increased by 40.8% from 2018 to 2022. The logbook CPUEs follow the same trend. In LFA 21B, the CPUE increased by 13.2% from 2018 to 2022.

- It was noted that the number of traps per licence have been decreasing since 2006 due to licence combining.
- The environment in LFA 19, which is a very large area, is very particular in terms of substrate and current, which could influence the CPUE.

Demographic indicators

The average size of lobsters obtained in commercial sampling in LFA 19C has increased, reaching 97.6 mm in 2022, which is 1.9% larger than the average size in 2018. The average size in LFA 20 has also increased, reaching 90.7 mm in 2022, which is 1.4% larger than the 2018 value. In LFA 21B, average sizes in the spring and fall fisheries have been declining since 2015, reaching 91.2 mm in 2022, or 1.7% smaller than in 2018.

- With respect to the size in LFA 21B, it was noted that an industry initiative was expected to provide new data (e.g. growth, maturity, sex ratio). This collaboration is ongoing.

Fishing pressure indicators

Fishing pressure indicators could not be estimated for LFAs 19 and 21. In LFA 20, exploitation rates had decreased slightly since 2008. The rate was 79.9% in 2021, which is above the average for the 2016–2018 period (75.7%).

Productivity indicators

Productivity indicators remained high in LFA 20. The abundance of berried females has continued to increase since 2011. In 2022, theoretical egg production was 1.2 times higher than in 2018 and 10.3 times higher than during the 1994–1996 period.

Between 2018 and 2022, prerecruitment indicators were stable, at 3.06 lobsters/trap.

- It was observed that, in subareas 20B5-B6, the sex ratio tends to be skewed toward males. Generally speaking, there is no need for concern. It was mentioned that differences in habitats across areas and subareas can generate different behaviours that could skew the sex ratio.
- In general, reports of small, berried females (of sub-legal size) are increasing.
- In LFA 21, some movement by lobsters appears to be occurring, which could influence the sex ratio.
- Participants were reminded that the post-season survey was established in order to have an independent survey outside of the fishing season.

Precautionary approach

The Gaspé lobster stock is in good condition and in the healthy zone according to the precautionary approach.

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- As is the case for the Magdalen Islands, it was noted that the precautionary approach needs to be updated.

Summary and advice – Gaspé

The key points of the assessment are presented and the participants suggest some changes. Only comments on substance (and not form) are reported.

- The structure of the key points was reorganized following the changes made to the summary for the Magdalen Islands, which simplified the discussions.
- With respect to the key point on average size, the area in question is LFA 19C, not LFA 19. The same structure was to be used for each area. In addition, it was decided that the information on size structures would not be included.
- For the indicators of pre-recruitment to the fishery in LFA 20, it was decided not to mention that this information is not available for the other areas.
- A separate key point was created for the precautionary approach. The sentence suggesting that the fishing effort be reduced was removed.
- The key points on the environmental indicators were restructured to ensure consistency with those for the Magdalen Islands.
- The key point on rock crab was rewritten to state notably that, despite the low fishing effort observed in recent years in the Gaspé region, the size structures obtained from commercial dockside sampling suggest a low abundance of sub-legal-size rock crab in LFA 19. Information was added about the CPUEs in this LFA, which have been declining since 2017, and, in 2022, were below the 2000–2021 average. The key point was to conclude by stating that these trends were not observed in LFAs 20 and 21.
- In order to ensure the sustainability of the lobster stock and that of its preferred prey species and preserve the trophic link between these species, the participants agreed that it should be stated that a low level of rock crab mortality should be fostered.

Therefore, the participants' **conclusion** was worded as follows:

Given its high abundance, productivity and landings, the Gaspé lobster stock is in good condition and is in the healthy zone according to the precautionary approach.

The indicators for the health of the rock crab population in the Gaspé area were reviewed from the perspective of the ecosystem approach. Unlike the situation in LFAs 20 and 21, the status of the population of this major prey species for lobster in LFA 19 is worrisome.

In order to ensure the sustainability of the lobster stock and that of its preferred prey species and preserve the trophic link between these species, a low level of rock crab mortality should be fostered.

NORTH SHORE (LFAS 15, 16 AND 18) AND ANTICOSTI (LFA 17)

Environmental data

In accordance with the ecosystem approach, temperature indicators were considered, but additional work is required to integrate them into the assessment of the resource's status.

No rock crab data are available for the North Shore and Anticosti for the last two years.

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- It was noted that the waters along the North Shore and around Anticosti Island are colder than those in and around the Magdalen Islands and the Gaspé Peninsula, with highly variable patterns within and between years. Lobsters undoubtedly find ideal temperatures for their growth in the warmer small bays in the region.
 - It was noted that, in the rock crab size structures for the North Shore, the data for the years 2021 and 2022 were missing, which creates uncertainty. Socio-economic factors and lobsters' use of the traps appear to be the reasons behind the missing data and it is hoped that scientific activities will fill these gaps. However, participants expressed little concern, given that the fishing pressure on rock crab is very low. However, lobster predation on crab could be significant.
 - It was noted that the fishing effort for rock crab around Anticosti Island is very low.

Abundance indicators

North Shore lobster landings rose significantly, reaching 1,468 t in 2022, which is 36.3% greater than in 2018. In LFA 15, landings totalled 294 t in 2022, which is 194.2% greater than in 2018 and 408.6% greater than the 25-year average (1997–2021). In LFA 16, landings totalled 194 t in 2022, representing a 121% increase over 2018 and a 473% increase relative to the 25-year average. In LFA 18, landings totalled 167 t in 2022, a 30.5% increase over 2018 and a 386.3% increase relative to the 25-year average. The values for 2022 are among the highest in the time series. In LFA 17B, following a historic high in 2021 (1,120 t), landings totalled 902 t in 2022, which was 14.0% greater than in 2018 and 158.1% greater than the 25-year average.

Since 2018, the CPUE by weight (obtained from logbook data) has increased by 79% in LFAs 15 and 16, reaching 1.11 kg/trap in 2022, which is 246% greater than the 1993–2021 average. In LFA 18D, the CPUE (6.04 kg/trap) in 2022 was 43.8% greater than in 2018 and 88.8% greater than the 2012–2021 average. In LFA 17B, the CPUE in 2022 (4.1 kg/trap) was 19.2% greater than in 2018 and 86.4% greater than the 2006–2021 average. Overall, fishing effort has increased steadily since 2011 in the North Shore and Anticosti Island LFAs.

- Some participants mentioned that, in order to obtain a better representation of lobster abundance along the North Shore, the fishing effort would have to stabilize, but was increasing at this time.
- It was noted that the value of the fishing effort for 2012 in LFAs 15 and 16 should be reviewed.
- The graph on the right side showing the LFA 18 fishing effort, which corresponds to the number of active licences, was corrected.
- It was noted that the opening of the fishery two weeks earlier in LFA 18 did not produce good results.
- According to the stock assessment biologist, the environment's carrying capacity is still changing, as the North Shore represents the edge of the species' range.
- A decrease in landings was observed around Anticosti Island in 2022. In addition to socio-economic factors, this could be explained by the warmer end-of-season temperatures.

Demographic indicators

Commercial sampling for demographic indicators is very limited on the North Shore and at Anticosti Island, especially in LFAs 15 and 16 where data are absent for 2020, 2021 and 2022.

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- Given the significant increase in fishing effort in these regions, the scientific sampling effort should be increased.

In LFA 17B, size structures are broad and average size is stable for commercial-size lobsters.

- The participants found the lack of data unfortunate for 2020, 2021 and 2022 in LFAs 15 and 16 (North Shore).
- It was noted that the relatively low fishing effort around Anticosti Island appears to allow lobster to reach a large size there. However, given that growth in this region is slow and that sexual maturity is reached at a size greater than the minimum legal size, the participants found this to be a cause for concern.
- It was noted that, in LFA 17B (Anticosti Island), the size structures showed a very slight decline in larger individuals. However, the participants agreed that the structure is very healthy and has a good distribution of size classes.

Summary and advice – North Shore and Anticosti

The key points of the assessment are presented and the participants suggest some changes. Only comments on substance (and not form) are reported.

- A few aspects of the key point on the CPUE were clarified. At the end, a statement was added to the effect that, on the whole, fishing effort has been increasing in the North Shore and Anticosti Island LFAs since 2011.
- In the key point indicating that sampling for the assessment of demographic indicators is very limited in the North Shore and Anticosti Island LFAs, it was added that, due to the significant increase in fishing effort in these regions, the scientific sampling effort should be increased.
- The participants agreed that, in LFA 17B, the size structures are broad, and the average size of commercial-size lobsters is stable, but slightly down for larger individuals. The participants decided to remove this last piece of information.
- Two key points on the environmental indicators were added. With respect to the temperature indicators, it was simply stated that they were considered but that additional work was required to integrate them into the assessment of the resource. The lack of rock crab data in the last two years for Anticosti Island and the North Shore was highlighted.
- The final key point was restructured by indicating that North Shore and Anticosti Island lobster appear to be in good condition but could be vulnerable to overexploitation, given that the legal size is smaller than the size at sexual maturity and that growth is slow.

Therefore, the participants' **conclusion** was worded as follows:

The abundance indicators (landings and CPUE) have risen sharply in the North Shore and Anticosti Island fishing areas. The lobster populations in these regions appear to be in good condition. However, these populations could be vulnerable to overexploitation, given that the legal size is smaller than the size at sexual maturity and that individuals grow slowly.

It is not possible to comment from the perspective of the ecosystem approach due to the lack of data and/or their interpretation.

APPENDIX 1 – TERMS OF REFERENCE

Assessment of lobster in Quebec’s inshore waters in 2022 and advice for the 2023 to 2025 fishing seasons

Regional Peer Review – Quebec Region

February 28-March 3, 2023

Mont-Joli, Quebec

Chairperson: Cédric Juillet

Context

Lobster fishing is carried out by 558 licence holders from the Magdalen Islands, Gaspé and the North Shore who have access to one of the eight lobster fishing areas (41 sub-areas) in Quebec. Nine First Nations also practice communal fishing for commercial purposes, but also for food, social and ceremonial purposes, in Gaspé and along the North Shore.

In Quebec, the lobster fishery is a limited-entry inshore fishery that takes place at depths generally less than 40 metres. The fishery is managed through effort control and escapement measures. The precautionary approach, which is recognized as an essential element of sustainable fisheries management, is applied to lobster fishery management decisions in Gaspé and the Magdalen Islands. The management plans established over the last two decades are aimed at ensuring a sustainable lobster fishery, in accordance with the recommendations of the 2012 stock assessment (DFO 2012) and the Fisheries Resource Conservation Council (FRCC 2007).

At the request of the Quebec Region Fisheries and Aquaculture Management Branch, the resource assessment is conducted every 3 years. The last lobster stock assessment was done in 2019 and updated in 2022. The purpose of the review is to determine whether changes that have occurred in the stock status warrant adjustments to the management plan for the 2023 to 2025 fishing seasons.

Objectives

Provide scientific advice for the management of lobster stocks on the North Shore and Anticosti Island (Areas 15, 16, 17 and 18), Gaspé (Areas 19, 20 and 21) and the Magdalen Islands (Area 22) for the 2023 to 2025 fishing seasons. This advice will include:

- a description of the biology and distribution of lobster in Quebec’s inshore waters;
- a description of the fishery, including the fishing effort and management measures specific to the fishing areas;
- an analysis of abundance indicators (catch per unit effort, density/biomass, landings) and exploitation rate from the fishery and scientific survey data, depending on the availability of data sources;
- a description of fluctuations in ecosystem variables (water temperature and rock crab abundance) in order to modulate advice on the status of lobster stocks in Quebec;
- identification and prioritization of research work to be considered for the future; and
- the outlook for the 2023 to 2025 seasons for each of the three sectors (North Shore and Anticosti Island, Gaspé, and Magdalen Islands).

Expected Publications

- Science Advisory Report
- Proceedings

Expected Participation

- Fisheries and Oceans Canada (DFO) (Science and Fisheries Management Sectors)
- Fishing industry
- Indigenous communities/organizations
- Provincial representatives

References

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APPENDIX 2 – LIST OF PARTICIPANTS

Name	Affiliation	Feb. 28	March 1	March 2	March 3
Arseneau, Cédric	DFO – Fisheries management	-	-	X	-
Aucoin, Julie	DFO – Fisheries management	X	X	X	X
Basque, Johanne	Première Nation Micmac de Gespeg	-	-	X	X
Bernier, Denis	DFO – Science	X	-	-	-
Boudreau, Sophie	DFO – Science	X	-	-	-
Boula, Dominique	DFO – Fisheries management	X	X	X	X
Bruneau, Benoît	DFO – Science	X	X	X	X
Condo, Jaime	Micmacs of Gesgapegiag Band	X	-	X	
Côté, Jean	Regroupement des pêcheurs professionnels du sud de la Gaspésie	X	X	X	X
Couillard, Catherine	DFO – Science	X	X	-	-
Croussette, Yolaine	DFO – Fisheries management	-	-	X	X
Cyr, Charley	DFO – Science	X	X	X	X
De Carufel, Valérie	DFO – Science	X	-	-	-
Dubé, Sonia	DFO – Science	X	X	X	X
Grégoire, Benjamin	DFO – Science	X	X	-	-
Juillet, Cédric	DFO – Science	X	X	X	X
Lacasse, Olivia	DFO – Science	X	X	X	X
Langelier, Serge	AMIK	X	X	X	X
Lavoie, Nancy	Groupe GID	X	X	X	X
Lees, Kirsty	DFO – Science	X	X	X	X
Monger, Julie	LNSFA	-	-	-	X
Munro, Daniel	DFO – Science	X	X	X	-
Paille, Nathalie	DFO – Science	X	X	X	X
Parent, Lyndsey	Listugug Mi'gmaq Government	X	X	X	X
Rivard, Julie	DFO – Science Ottawa	X	X	X	X
Roy, Marie-Josée	DFO – Fisheries management	X	X	X	X
Sainte-Marie, Bernard	DFO – Science	X	X	-	-
Sigouin, Evelyne	AGHAMW	-	X	X	-
Sean, Anne-Sara	DFO – Science	X	-	-	-
Tamdrari, Hacène	DFO – Science	X	X	X	X
Yanez, Alejandro	UBC	X	X	X	X