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**Proceedings of the regional peer review meeting of the assessment of Softshell  
Clam stocks in Quebec coastal waters**

**February 9, 2023  
Hybrid meeting**

**Chairperson: Rénaud Belley  
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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 contains the proceedings of the meeting held on the regional assessment of softshell clam stocks in Quebec's coastal waters. This review process was held on February 9, 2023 in Mont-Joli, Quebec and brought together 20 participants from Science, Fisheries Management and the industry. The proceedings contain the essential parts of the presentations and discussions and outline the recommendations and conclusions that were presented during the review.

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## INTRODUCTION

The Quebec Region of Fisheries and Oceans Canada (DFO) is responsible for assessing a number of fish and invertebrate stocks exploited in the Estuary and Gulf of St. Lawrence. Most of the stocks are periodically assessed as part of a regional peer review process held at the Maurice Lamontagne Institute in Mont-Joli. This document constitutes the proceedings of assessment meeting held in Mont-Joli on February 9, 2023 to review the assessment of the softshell clam stocks in Quebec's inshore waters.

The purpose of this review was to determine whether changes had occurred in the status of the resource which would require adjustments to the management plan based on the conservation approach adopted. The ultimate objective was to provide science advice for the management of the softshell clam stocks in Quebec's inshore waters for the 2023 to 2025 fishing seasons.

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

## RESOURCE ASSESSMENT

The meeting chair, Rénaud Belley, reviewed the peer review objectives and process, and the participants introduced themselves. Bruno Gianasi, the biologist who conducted the review, outlined the collaborators' work and presented the terms of reference. M. Gianasi reviewed the summary of the 2020 assessment and provided a brief summary of the biology and ecology of the species (distribution, reproduction and development cycle, growth, toxicity/contamination) as well as its exploitation.

Softshell clams are exploited by commercial and recreational harvesters. Quebec is divided into three management regions: Gaspé–Lower St. Lawrence, the Magdalen Islands and the North Shore. The North Shore is divided into three fishing areas: Area 1 (sub-areas 1A, 1B and 1C) corresponds to the Upper North Shore, Area 2 to the Middle North Shore, and Area 3 to the Lower North Shore. Commercial landings in Quebec have been at historically low levels since 2010 and in 2022, 91.7% of the commercial landings were from the North Shore, mainly from the Pointe-aux-Outardes Ouest area. In 2022, landings (10.8 t) reached the lowest level since 1917. There is no commercial harvest along the Lower St. Lawrence or Gaspé coasts and commercial landings in the Magdalen Islands are low (< 0.9 t in 2022). Total allowable catches (TACs) are applied in some areas; however, they were not fully utilized due to the low fishing effort. Recreational fishing is permitted along a major portion of Quebec's coastline. However, the volume of recreational harvests remains unknown.

The indicators used to assess the status of softshell clam stocks are from commercial fishery (landings, fishing effort, catch per unit effort (CPUE), size structure and average size) and focus on hand harvesting in Upper North Shore ((Pointe à Boisvert, Baie des Chevaux, Banc Marie-Marthe, Baie Didier Sud, Baie des plongeurs, Pointe-aux-Outardes Ouest, Pointe-aux-Outardes Est) and in Magdalen Islands (Lagune de la Grande-Entrée Sud, Lagune du Havre aux Maison Nord, Dune Sandy Hook).

Fishing effort has followed the same trend as landings, having remained at a very low level since 2010. Effort decreased from a peak of 12,142 vendor-days in 2002 to 1,111 in 2009. In 2022, fishing effort consisted of 198 vendor-days for Quebec as a whole, one of the lowest

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values observed since 2002. The decline in effort can be explained by a decrease in the demand for softshell clams on the part of buyers. The sharp decrease in effort has led to considerable variability in CPUE estimates in recent years, making it difficult to detect trends in harvested areas. In 2022, the average size of landed softshell clams varied between 65 and 75 mm on the North Shore and between 56 and 70 mm in the Magdalen Islands. The proportion of sublegal-size clams (< 51 mm) in landings was below 3% in all beds.

- The surveys conducted between 2016 and 2019 provided justification for adjusting the TACs for several beds on the Upper North Shore in 2020.
- It was emphasized that market demand had decreased.
- Participants believe that effort is slightly underestimated, particularly for 1A and 1B (Upper North Shore). There appear to be some gaps in the logbook data.
- Given that commercial fishing effort has declined significantly, it is important to continue sampling work to ensure better monitoring.
- Monitoring of toxicity appears to be well covered in the CSSP.
- It was noted that the TACs were set in 2015 based on the results of surveys conducted since the 2000s. They are limited to a maximum of 5% of the legal-size biomass and to 2.5% for certain more vulnerable areas (small harvestable area or density below a certain threshold).

## **CONCLUSION**

### **RESEARCH PRIORITIES**

A few issues were identified in relation to the research work to be prioritized:

- Develop reference points for the most heavily harvested areas, in particular for Pointe-aux-Outardes Ouest;
- Continue to conduct surveys of the recreational fishery in the Gaspé;
- Conduct periodical monitoring in certain areas to gain a better understanding of population dynamics;
- Assess the relationship between environmental conditions (e.g., water temperature, type of substrate) and softshell clam abundance;
- Study the effects of storm surges, ice cover, shoreline erosion and the reshaping of mudflats on juvenile establishment.
- Quantify effort, removals and the size structure of softshell clams harvested in the recreational fishery.

### **SUMMARY AND RECOMMENDATION**

The key points of the assessment were presented, and some modifications were suggested by participants. Only comments about content are reported.

- In the key point on fishing effort, it was considered important to specify that the decline in effort is strongly linked to the decrease in demand for softshell clams among buyers. According to several participants, the decrease in effort is not an indicator that is representative of the status of the resource at present.

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- With regard to the key point concerning average size, it was noted that an upward trend in average size had been observed in certain beds on the Upper North Shore.
  - Regarding the recreational fishery, it is considered important to determine the size structure of harvested clams, in addition to assessing effort and removals. Although the volumes harvested by this fishery are unknown, in some beds they may be considerable. This concern would be mentioned in the sources of uncertainty.
  - In the recommendation related to the impossibility of providing advice, it was pointed out that conservation was not a concern, given the current level of effort.

Lastly, the following recommendations were agreed on by the participants:

Given that a survey of exploited areas has not been conducted since 2019 and given the low level of landings, it is not possible to provide advice on the status of shellfish areas for the upcoming seasons. However, in light of the low level of commercial fishing effort in recent years, there is no concern for the conservation of harvested beds.

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## APPENDIX 1 – TERMS OF REFERENCE

### Assessment of Softshell Clam Stocks in Quebec coastal waters

#### Regional Peer Review – Quebec Region

February 9, 2023

Mont-Joli, QC

Chairperson: Régnald Belley

#### Context

The softshell clam (*Mya arenaria*) is present along most of Quebec's shoreline. Clam harvesting includes food, recreational and commercial harvesting. Recreational harvesting of softshell clams has been practised for a long time in Quebec without being well documented. Commercial harvesting is permitted on the Upper North Shore and the Magdalen Islands. Only hand tools are allowed and there is a minimum legal size. In addition, commercial activities on the Upper North Shore are regulated by the number of licences, a fishing season and a landing quota by shellfish harvest area. To obtain a licence, the individual must have a proof of residence. For recreational harvesting, the number of daily catches is regulated for all of Quebec. The fishing seasons are regulated by the Atlantic Fishery Regulations.

At the request of the Fisheries Management Branch, resource assessment is done every three years. The last assessment of Quebec inshore waters Softshell clam was done in 2020. The objective of the review is to determine whether changes that have occurred in the stock status necessitate adjustments to management plans based on the conservation approach used.

#### Objectives

Provide scientific advice on the stock status of softshell clam in Quebec's inshore waters for the 2023-2025 fishing seasons. This advice shall include:

- Description of the species biology and its distribution in Quebec's coastal waters;
- Description of the fishery including management measures by region;
- Analysis of landings and fishing effort by shellfish harvest areas;
- Analysis of catch per unit effort from the commercial fishery;
- Analysis of data from the commercial dockside sampling program;
- Identification and prioritization of research projects to be considered for the future;
- Perspectives for the 2023-2025 fishing seasons based on indicators derived from fishing and research activities.

#### Expected Publications

- Science Advisory Report
- Proceedings

#### Experted Participation

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



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## APPENDIX 2 – LIST OF PARTICIPANTS

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