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Proceedings of the regional advisory meeting on the Assessment of the Stimpson's surfclam fishery in the Quebec's inshore waters

February 22, 2021
Virtual meeting

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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 regional peer review meeting on the assessment of the Stimpson's surfclam fishery in the Quebec's inshore waters. The meeting, which was held virtually via Zoom on February 22, 2021, brought together roughly 20 participants from science, management and the fishing industry. These proceedings describe the highlights of the meeting presentations and discussions and outline the recommendations and conclusions resulting from the review.

INTRODUCTION

The Quebec Region of Fisheries and Oceans Canada (DFO) is responsible for assessing the stocks of several exploited fish and invertebrate species in the Estuary and Gulf of St. Lawrence. Most of these stocks are assessed periodically within a regional advisory process, which is conducted at the Maurice Lamontagne Institute in Mont-Joli. This document consists of the proceedings of the meeting held on February 22, 2021 via the Zoom platform (virtual meeting), on the assessment of the Stimpson's surfclam fishery in the Quebec's inshore waters stock assessment of Scallop in Quebec inshore waters.

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, the ultimate goal being to provide a scientific advice on the management of Stimpson surfclam stocks in Quebec coastal waters for the 2021–2023 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 review 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 review (Appendices 1 and 2). The proceedings also list the recommendations made by the meeting participants.

ASSESSMENT

The chair, Charley Cyr, provided a brief introduction to the peer review. Participants were then invited to introduce themselves. The assessment biologist, Rénaud Belley, highlighted the work of his collaborators. The scientific advice that will be given applies to the 2021-2023 fishing seasons.

BIOLOGY

Some components of Stimpson's surfclam biology are presented (growth and reproduction). This is a slow growing species that varies between regions. A lower growth rate is observed in the Magdalen Islands compared to the North Shore. The Stimpson's surfclam is found at depths below the low tide line, in the North Shore (1 to 46 m) and in the Magdalen Islands (25 to 60 m).

FISHERY, MANAGEMENT MEASURES AND DECISION RULES

The Quebec region has ten fishing areas, eight on the North Shore (1A, 1B, 2, 3A, 3B, 4A, 4B, 4C) and two in the Magdalen Islands (5A, 5B). This inshore fishery is managed by the number of licences, the fishing season, TAC and a minimum catch size of 80 mm. The hydraulic dredge used to harvest Stimpson's surf clam is very efficient and selective. The monitoring tools include: CPUE from logbook and purchase receipt, spatial distribution of fishing effort from logbook, dockside monitoring program and scientific survey for abundance.

Mean annual Stimpson's surfclam landings in Quebec totalled 587 t from 2018 to 2020, a 8% decrease compared with the 2015-2017 period. The North Shore accounted for 99% of landings and the Magdalen Islands for 1%. The annual total allowable catch (TAC) for the 2018-2020 period was met at over 80% on average in Areas 3A and 3B. There was no fishing in Areas 1A and 5B in 2018 and Area 2 was fished in 2018 only. There was no fishing in Area 1B from 2018 to 2020 and Areas 4C and 5A remain unexploited.

The decision rule for TAC adjustment, used since the 2009-2011 assessment, is as follows: A maximum increase of 6% of the quota can only be considered when the quota is sustained at more than 80% on average for the assessment period and the catch per unit effort (CPUE) and average size indicators are above the median of the time series. In addition, the area exploitation rate is expected to be below the recommended limit value of 3%.

- A brief reminder was given on how the exploitation rate is calculated and what the exploited area and the 95% Kernel represent.
- It was pointed out that the current rule only allows for a TAC increase. There is no rule for a TAC decrease.
- With respect to the exploited area, it was suggested that the term "year" be changed to "period".

FISHERY INDICATORS

Fishing intensity, fishing effort, landings and CPUE

Fishing intensity by bed was presented, along with the distribution of fishing effort, landings, and the CPUE for each fishing area. The average catch per unit effort (CPUE) for the 2018-2020 period was higher than the time series medians (1993-2019) for area 3A, but lower than the medians for areas 1A, 2, 3B, 4A, 4B and 5B.

Some comments were made by participants:

- Some participants stressed that environmental conditions (e.g., strong winds, tidal current) could have affected CPUE values. This contributes to the uncertainty over the CPUE in areas 3A and 3B.
- There was a discussion on the importance of refining fishing effort (e.g., dredging speed, duration of tows) in order to reduce uncertainty. Electronic logbooks would provide more accurate data, thus improving the monitoring of tows.
- Industry members stressed that fishing effort in area 3B was distributed throughout the fishing area and was not concentrated in a single bed.

Dockside sampling

The average size of landed surf clams in 2018-2020 was greater than the time series medians (1993-2019) in areas 2, 3A, 4B and 5B, but less than the time series medians in areas 1A, 3B and 4A.

- According to some participants, various factors could affect average sizes, including a shift in fishing effort and depth. Greater depths are associated with a decrease in size, according to observations by fishermen.
- It was recommended that caution continue to be exercised in interpreting this index.
- Dockside sampling activities in areas 3A, 3B and 4A were not affected by COVID-19 health measures.
- It was pointed out that this fishery is highly selective.

Exploitation rate

The exploitation rate in each area (based on the dredged surface area) was below the recommended rate of 3% in all fishing areas.

APPLICATION OF DECISION RULE

According to the existing decision rule, only area 3A meets all the conditions for a 6% quota increase. Maintaining the current quota in the other areas should not affect the status of the resource.

Several comments were made on the decision rule.

- Some participants felt that the uncertainty expressed over the interpretation of average sizes, fishing effort and CPUEs should be taken into account in the implementation of the decision rule and in the conclusions of the science advisory report.
- The decision rule was reconsidered. Questions were raised about what should be done for areas that were not fished or were lightly fished, as well as for areas where the TAC had never been reached; furthermore, there were no adjustment rules for reducing the TAC. Concerns were also raised over the methods used to establish TACs. Documenting the history of TACs would be useful. All these questions show that this issue must be examined in greater depth.

IDENTIFYING RESEARCH WORK

The following research priorities were identified:

- Genetic study (Virginie Roy, in progress)
- Documentation of the history of TACs and a review of TACs in areas that are not fished or are lightly fished
- Review of TAC adjustment measures to deal with a decline in the indicators
- Study of recruitment dynamics (frequency and location)
- Estimates of bycatch and release survival rates (in the context of ecocertification)
- Characterization of a surf clam bed (multibeam sonar and video coverage, grab and dredge sampling)
- Evaluation of the weight-length relationship by fishing area at dockside to estimate the number of surf clams landed annually (to be examined with samplers)
- Development of the precautionary approach, which will involve collaboration between science, industry and management stakeholders
- Review of how interim years are managed
- Reflection on the uncertainty surrounding the CPUE and fishing effort (how to refine this indicator: electronic logbooks, VMS [15 minutes], survey of fishermen).

CONCLUSION

SUMMARY AND RECOMMENDATIONS

The key points of the assessment were presented and commented on by participants.

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- Along with the 6% quota increase in area 3A, it should be mentioned that maintaining the current quotas in the other fishing areas should not affect the status of the resource.
 - It was suggested that a key point be added on the distribution of fishing effort among beds in the same fishing area, in order to limit the possibility of local overexploitation.
 - The review of indicators would not be carried out in the near future.
 - It was suggested that a table showing the indicators by fishing area be provided in the science advisory report.
 - The lack of knowledge on recruitment should also be stressed in the advisory report.

The meeting's main conclusions were formulated as follows:

According to the existing decision rule, only area 3A meets all the conditions for a 6% quota increase. Maintaining the current quotas in the other fishing areas should not affect the status of the resource.

Fishing effort in each fishing area should be distributed among beds in order to limit the possibility of local overexploitation.

APPENDIX 1 – TERMS OF REFERENCE

Assessment of the Stimpson's surfclam fishery in the Quebec's inshore waters

Regional Advisory Meeting - Quebec Region

February 22, 2021

Virtual meeting

Chairperson: Charley Cyr

Context

Stimpson's surfclam (*Mactromeris polynyma*) fishery began in the 1990s in the Gulf of St. Lawrence. Landings in recent years have been about 650 t and came mostly from the North Shore. The exploitation of beds is conducted using a hydraulic dredge, on sandy substrates located 10 to 60 m deep.

Quebec waters are divided into ten fishing areas to which access is limited to a restricted number of fishermen. The effort is also controlled by a fishing season and catches are limited by quota. Until now, the adjustment of the quotas was done with caution due to the slow growth and the sedentariness of this mollusc.

At the request of the Fisheries Management Branch, resource assessment is done every three years. The last Stimpson's surfclam stock review was done in 2018. 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 taken.

Objectives

Provide scientific advice on the management of Stimpson's surfclam stocks in Quebec's inshore waters (management units 1 to 5) for fishing seasons 2021 to 2023. This advice shall include:

- Description of the biology of Stimpson's surfclam and its distribution in Quebec's coastal waters;
- Description of the fishery including landings, fishing effort and management measures specific to the fishing areas;
- Description of the conservation approach used for this species;
- Analysis of catch per unit effort from the fishery;
- Analysis of data from the commercial sampling program;
- The calculation of the exploitation rate indicator and return on using the 3% threshold in the decision rule;
- Use of decision rules for adjusting the quotas;
- Identification and prioritization of research projects to be considered for the future.
- The determination of the process to provide advice during the interim years, including a description of conditions that may warrant a full stock assessment earlier than originally planned;
- Perspectives for the 2021-2023 fishing seasons in management units 1 to 5 (North Shore and Îles-de-la-Madeleine).

Expected Publications

- Science Advisory Report on Stimpson's surfclam in the Quebec inshore waters.
- CSAS Proceedings summarizing discussions.

Expected Participation

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

APPENDIX 2 – LIST OF PARTICIPANTS

Name	Affiliation
Belley, Rénaud	DFO Science
Boudreau, André	Fisher, North Shore
Boudreau, Mathieu	DFO Science
Bourdages, Hugo	DFO Science
Brulotte, Sylvie	DFO Science
Bruneau, Benoît	DFO Science
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Couillard, Catherine	DFO Science
Cyr, Charley	DFO Science
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