

(ADDENUMM) SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD AND NUNAVIK MARINE
REGION WILDLIFE BOARD

FOR

Information: X

Decision:

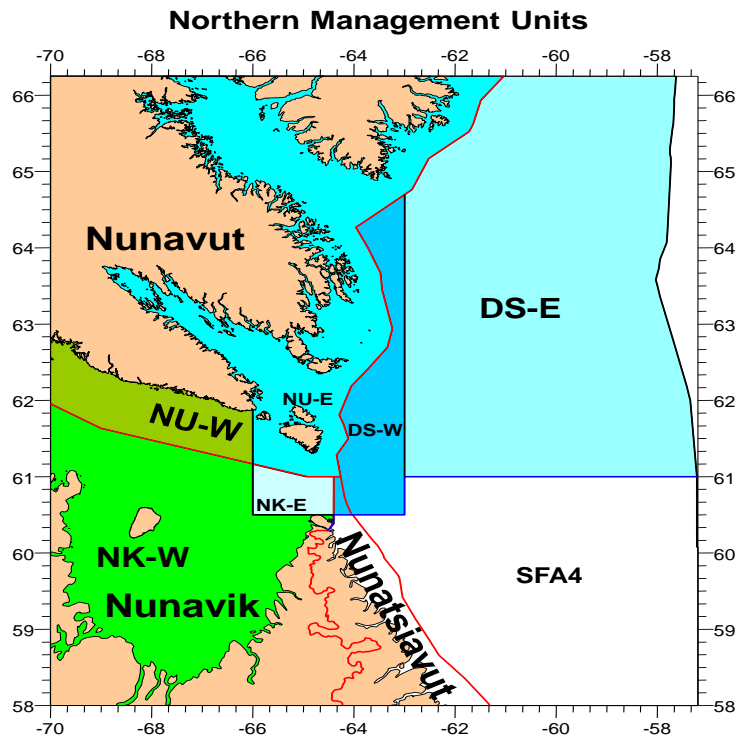
Recommendation:

Issue: Precautionary Approach Framework for Northern (*Pandalus borealis*) and Striped (*P. montagui*) Shrimp in the Western and Eastern Assessment Zones

Map:

Blue areas – Eastern Assessment Zone

Green areas – Western Assessment Zone



Northern shrimp (*Pandalus borealis*)



Striped shrimp (*Pandalus montagui*)

Background

Fisheries and Oceans Canada (DFO) submitted a briefing note to the Nunavut Wildlife Management Board (NWMB) and the Nunavik Marine Region Wildlife Board (NMRWB) (the Boards) in February 2021 as a placeholder for their joint decisions and recommendations on a Precautionary Approach (PA) Framework for two species of shrimp in the Western Assessment Zone (WAZ) and Eastern Assessment Zone (EAZ).

A report from the Northern Precautionary Approach Working Group (NPAWG) was not available at the time of submission. The NWMB requested this item be submitted as an information item for their March 10, 2021 meeting.

The Northern Precautionary Approach Working Group: Status Report (February 2021) is submitted for information through this addendum (Appendix 1). This report is intended to be a status report only, and is not intended for use in decision making. A final report of NPAWG will be prepared and submitted to the Boards upon conclusion of working group sessions.

Prepared by: Courtney D'Aoust, Fisheries Resource Management, Fisheries and Oceans Canada

Date: March 5, 2021

Appendices

APPENDIX 1 – Northern Precautionary Approach Working Group: Status Report (February 2021)

Northern Precautionary Approach Working Group: Status Report

February 2021

Disclaimer: This report is intended to be a status report only and is not intended for use in decision making. A final NPAWG report will be prepared upon conclusion of working group sessions.

Composition & Structure

The Northern Precautionary Approach Working Group (NPAWG) was established in November 2020. The working group is composed of co-management partners, relevant industry stakeholders, provincial governments and officials from Fisheries and Oceans Canada (DFO). A complete list of NPAWG members is at Appendix 1.

Discussions of NPAWG have proceeded through a series of virtual meeting from November 2020 to February 2021. A consultation schedule is at Appendix 2.

Purpose & Objectives

The purpose of NPAWG is to provide advice on the primary components of a Precautionary Approach (PA) Framework for Northern shrimp (*Pandalus borealis*) and Striped shrimp (*P. montagui*) stocks in the Western Assessment Zone (WAZ), and an updated PA Framework for these stocks in the Eastern Assessment Zone (EAZ).

Consistent with the [Fishery Decision-Making Framework Incorporating the Precautionary Approach](#) (DFO, 2009) (referred to herein as DFO's PA Policy), the primary components of the PA Framework will include reference points to define three stock status zones (Healthy, Cautious and Critical Zones (Figure 1)) as well as a harvest strategy that may include Harvest Decision Rules (HDRs).

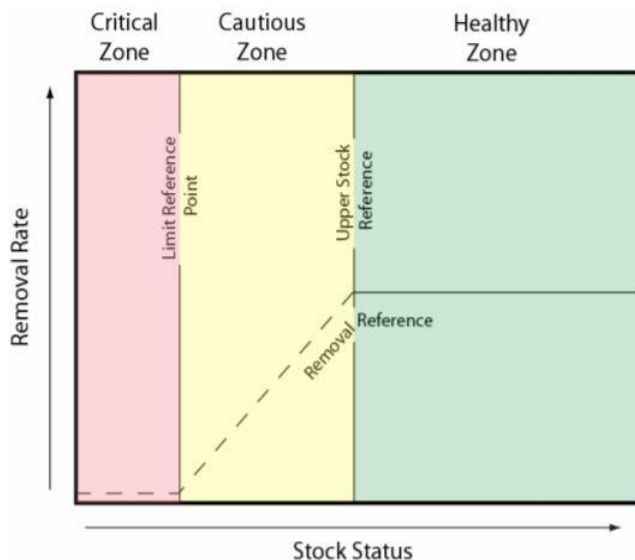


Figure 1. Fisheries management framework consistent with a precautionary approach.

A PA Framework for these stocks will serve to guide fisheries management decisions and contribute to sustainable management of the resource in these areas. In addition, efforts to develop a PA Framework for *P. montagui* in the WAZ, specifically developing a Limit Reference Point (LRP) and a Target Reference Point (TRP)), are directly related to conditions for Marine Stewardship Council (MSC) certification of this fishery.

Limit Reference Points (LRP)

Consistent with DFO’s PA Policy, LRPs are established by DFO Science as the point below which serious harm is occurring to the stock. In May 2020, a Canadian Science Advisory Secretariat (CSAS) peer review process was convened to establish LRPs for *P. borealis* and *P. montagui* stocks in the WAZ, and update existing LRPs for these stocks in the EAZ. Publications from this peer-review process were released in November 2020 and distributed to NPAWG members. A copy of the Science Advisory Report (2020/053) was provided to the NWMB and NMRWB for December 2020 and March 2021 Board meetings.

- [Terms of Reference](#)
- [Science Advisory Report 2020/053](#)
- [Research Document 2020/072](#)
- [Proceedings 2020/024](#)

LRPs developed through the May 2020 peer review process were established at 40% of the geometric mean of the Spawning Stock Biomass (SSB) index for the available time series (Table 1).

Table 1. Limit Reference Points and proposed Upper Stock Reference points¹ for *P. borealis* and *P. montagui* in the Western and Eastern Assessment Zones.

| Species | Western Assessment Zone (WAZ) | | Eastern Assessment Zone (EAZ) | |
|--|-------------------------------|------------------------|--|--|
| | LRP (40%) | USR ¹ (80%) | LRP (40%) | USR ¹ (80%) |
| Northern Shrimp (<i>Pandalus borealis</i>) | 4,100t *New | 8,200t | 15,800t *Updated (increase from 6,800t implemented in 2009) | 31,600 *Updated (increase from 18,200 implemented in 2009) |
| Striped Shrimp (<i>Pandalus montagui</i>) | 12,300t *New | 24,600t | 3,100t *Updated (increase from 2,300t implemented in 2009) | 6,100t *Updated (no change from 6,100t implemented in 2009) |

¹ USRs indicated in Table 1 were proposed by DFO Science. USRs require Board decisions and recommendations (as appropriate) prior to being established.

NPAWG Discussion

Although the development of LRPs for shrimp stocks in the WAZ and EAZ does not fall within the scope of NPAWG purpose and objectives, the working group did discuss general concerns toward the established reference points. In a submission from the Canadian Association of Prawn Producers (CAPP) and a joint submission from the Nunavut Fisheries Association (NFA) and Northern Coalition (NC), industry maintained that environmental and population dynamics of Northern shrimp stocks had not been adequately examined in setting the LRPs. Further, members expressed concern for the level of precaution taken in setting LRPs and that these reference points should be implemented on a temporary basis only.

Officials from DFO discussed the level of available information (limited data time series) and degree of uncertainty as to the point below which serious harm may be occurring to these stocks, noting the consensus of the May 2020 CSAS participants to exercise greater precaution in setting the LRPs. Representatives from the Government of Quebec and Government of Nunavut expressed concern for lack of an established plan or committed funds that could provide additional data (specifically, environmental and ecosystem data) for the WAZ and EAZ that could mitigate uncertainty and potentially lead to revised reference points in the near term.

Outcome

LRPs are considered implemented and remain in effect until such a time as they are revised by DFO Science. Accordingly, no decisions or recommendations are to be sought from the NWMB or NMRWB, nor the Northern Shrimp Advisory Committee (NSAC) on these biological points.

Upper Stock Reference Points (USR)

Consistent with DFO's PA Policy, the USR is the stock level threshold below which removals must be progressively reduced in order to avoid reaching the LRP. The establishment of the USR is a management decision, driven by productivity objectives for the stock, broader biological considerations and social and economic objectives for the fishery. This decision is, therefore, informed by consultations with fishery and other interests, with advice and input from Science. NPAWG served as the body for this consultative process. USRs require Board decisions and recommendations (as appropriate) prior to being established by the Minister of Fisheries and Oceans Canada.

As part of the May 2020 CSAS peer review process, DFO Science also proposed USRs for stocks in the WAZ and proposed updated USRs for stocks in the EAZ. USRs were proposed at 80% of the geometric mean of the SSB index for the available time series (Table 1).

NPAWG Discussion

To a great extent, the working group discussed year-to-year variability in stock status indicators (fishable and SSB) for *P. borealis* and *P. montagui* in the WAZ and EAZ, recalling that no discernable trend has been observed for either species. Given influences beyond fishing mortality and the lack of trends that can be derived from a relatively limited time series, some NPAWG members felt that measures should be taken to mitigate the effects of this variability.

Measures discussed by the working group included the suggestion of a USR established at 70% of the geometric mean of the SSB index for the available time series. Some members proposed that averaging of multiple (2 or 3) SSB indices would be used to determine stock status relative to PA reference points. DFO Science maintained that the clearest and most recent expression of stock status is represented as a single data point, rather than an average. In reaction to this position, some working group members then proposed that a USR not be developed and instead NPAWG focus on a Target Reference Point (TRP) to satisfy MSC conditions. These measures would effectively reduce, or eliminate, the potential for stocks to enter a defined Cautious Zone. Industry members pointed to significant prospective harm to product marketability where stocks enter a Cautious Zone.

From DFO's perspective, stock status is exclusively within the Science sector's area of responsibility and a single-year value is the clearest expression of that status for a given point in time. Additionally, it was noted that USRs are an integral part of DFO's PA policy, primarily serving as a point sufficiently above the LRP "to provide an opportunity for the management system to recognize a declining stock status and sufficient time for management actions to have effect". In keeping with DFO's PA policy, the USR is critical in defining the boundary between the Healthy and Cautious Zones and DFO continues to report in this context through the annual [Sustainability Survey for Fisheries](#).

It remains a policy priority for the Department to establish complete PA Frameworks for Canada's fisheries that include a USR. The establishment of a TRP without an accompanying (or dual purpose) USR would represent a departure from this priority. This would be particularly pertinent in the EAZ where a USR has been in place for a number of years.

Outcome

NPAWG members have shown significant support for a USR established at 70% of the geometric mean of the SSB index for the available time series, for stocks in the WAZ and EAZ. Ongoing work to develop HDRs has considered the USR at this prospective level. Members continue to see the establishment of a USR as coupled with the development of HDRs given their combined effect on potential fishing opportunities and stock conservation.

Harvest Decision Rules (HDRs)

Consistent with DFO's PA Policy, pre-agreed Harvest Decision Rules (HDRs) and management actions for each zone within the PA Framework are essential components of a harvest strategy. HDRs prescribe harvest rates and possibly other management procedures for each zone or steps within a zone. HDRs have not been established for stocks in the WAZ. HDRs are established within the [Integrated Fisheries Management Plan \(Annex I\)](#) for stocks in the EAZ and remain in effect until these have been revised.

NPAWG Discussion

Through initial discussions had to date, NPAWG has explored ways in which HDRs could accommodate significant variability in biomass indices for *P. borealis* and *P. montagui* stocks in the WAZ and EAZ. Industry noted the objective to promote catch stability in the short term ahead of a desired review of PA reference points, and the general need for predictability in annual Total Allowable Catch (TAC) levels. A number of proposals were prepared by industry representatives and presented to the working group for consideration.

One proposed HDR approach looked to establish a baseline TAC that could remain constant, with a trigger to respond to an unusual change in biomass patterns observed over the time series. The proposed trigger would consider the three-year average of the SSB index relative to the half-way point of Cautious Zone, and if below, would result in significant reduction in the TAC.

A second proposal presented the option to consider biomass indices for each species as a combined total for the WAZ and EAZ as a means to reduce year-to-year variability. Exploitation rates (e.g. 20% exploitation rate in the Healthy Zone) could be applied to a three-year average of combined fishable biomass estimates to generate TAC levels for each species across a combined area. It was proposed that these TAC levels then be proportionally divided between the WAZ and EAZ.

The working group continues to consider industry proposed measures with possibility to suggest modifications or new approaches for consideration in future discussions.

Outcome

The development of HDRs for WAZ stocks and any possible revisions to existing HDRs for EAZ stocks is ongoing. Where a number of industry proposals have been brought forward to date, DFO is expected to present its response and/or additional option(s) for consideration by the working group in future sessions.

Other Areas of Discussion: Review Provision

Given the limited time series and uncertainty surrounding the stocks in the EAZ and WAZ, many group members stated a strong preference for a PA to be reviewed in the near-term (i.e., 2-5 years). Members suggested the benefit of doing so with the aid of additional survey results and, preferably, incremental science work that could provide some information related to environmental and ecological influences on these stocks.

NPAWG Discussion

DFO raised concern that a defined expiry date on a PA Framework is unlikely to be supported by DFO decision-makers and acknowledged that there could be implications for MSC certification for these fisheries in the event a PA Framework (including reference points) is not in place. The notion of a review after a certain time period was discussed.

DFO Science noted that the knowledge of these stocks is not likely to increase to an extent that could result in a different outcome in the development of a PA Framework to that being undertaken now. DFO proposed that the working group recommend a review of reference points (and any additional components of a PA Framework) in 4 or 5 years (i.e., 2025 or 2026), principally through the establishment of a committee to commence an initial review and to ultimately consider the merit of modifying the PA Framework at that time. Associated with the notion of available data for the WAZ and EAZ, NPAWG has noted the need for additional science to improve environmental knowledge.

Next Steps

NPAWG should reconvene to discuss on HDRs in mid-to-late March. Pending the outcomes of these sessions, DFO will seek decisions and recommendations from the NWMB and NMRWB on USRs and HDRs at the next opportunity.

Fisheries and Oceans Canada (DFO) Members

Derek Mahoney (Resource Management Operations (RMO), Ottawa) (*Chair*)
Courtney D'Aoust (RMO, Ottawa)
Leigh Edgar (RMO, Ottawa)
Christi Friesen (RM, Arctic)
Jeff Adam (RM, Arctic)
Sheri Friesen (RM, Arctic)
Felix Dionne (RM, Quebec)
Jérôme Beaulieu (RM, Quebec)
Martin Henri (RM, Newfoundland and Labrador)
Wojciech Walkusz (Science, Ontario & Prairie)
Krista Baker (Science, Newfoundland and Labrador)
Katherine Skanes (Science, Newfoundland and Labrador)
Brittany Beauchamp (Science, Ottawa)

Non-DFO Members

Frankie Jean-Gagnon (Nunavik Marine Region Wildlife Board)
Amber Giles (Nunavut Wildlife Management Board)
Aaron Dale (Torngat Joint Fisheries Board)
Zoya Martin (Government of Nunavut)
Omar Sarr (Government of Quebec)
Todd Broomfield (Nunatsiavut Government)
Alastair O'Reilly (Northern Coalition)
Bruce Chapman (Canadian Association of Prawn Producers)
Tony Wright (Makivik Corporation)
Brian Burke (Nunavut Fisheries Association)

APPENDIX 2

| Session Title | Objectives | Sub-group(s) to attend | Date & Time |
|------------------------------------|---|-------------------------------|--|
| USR 4: EAZ & WAZ stocks | Discuss reference points and harvest decision rules (Borealis + Montagui) | WAZ & EAZ | Thursday February 18 1 PM – 3 PM EST (2 hours) |
| USR 3: EAZ & WAZ stocks | Discuss reference points (Borealis + Montagui) | WAZ & EAZ | Friday February 5 9 AM – 11 AM EST (2 hours) |
| USR 2: EAZ & WAZ stocks | Discuss options for USRs (Borealis + Montagui) | WAZ & EAZ | Friday January 15 10 AM – 12PM EST (2 hours) |
| USR 1: EAZ stocks | Discuss options for USRs (Borealis + Montagui) | EAZ | Monday January 11 10 AM – 12PM EST (2 hours) |
| USR General | Discussion: Outcomes of CSAS peer-review Discuss key considerations for USRs | WAZ & EAZ | Thursday December 17 10 AM – 12PM EST (2 hours) |
| NPAWG Introductory Session | Welcome to NPAWG: Terms of Reference Introduction to the Precautionary Approach Framework Overview: CSAS peer-review outcomes (LRPs and USRs) | WAZ & EAZ | Monday November 30 10 AM – 12PM EST (2 hours) |