

SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD AND NUNAVIK MARINE
REGION WILDLIFE BOARD

FOR

Information:

Decision: X

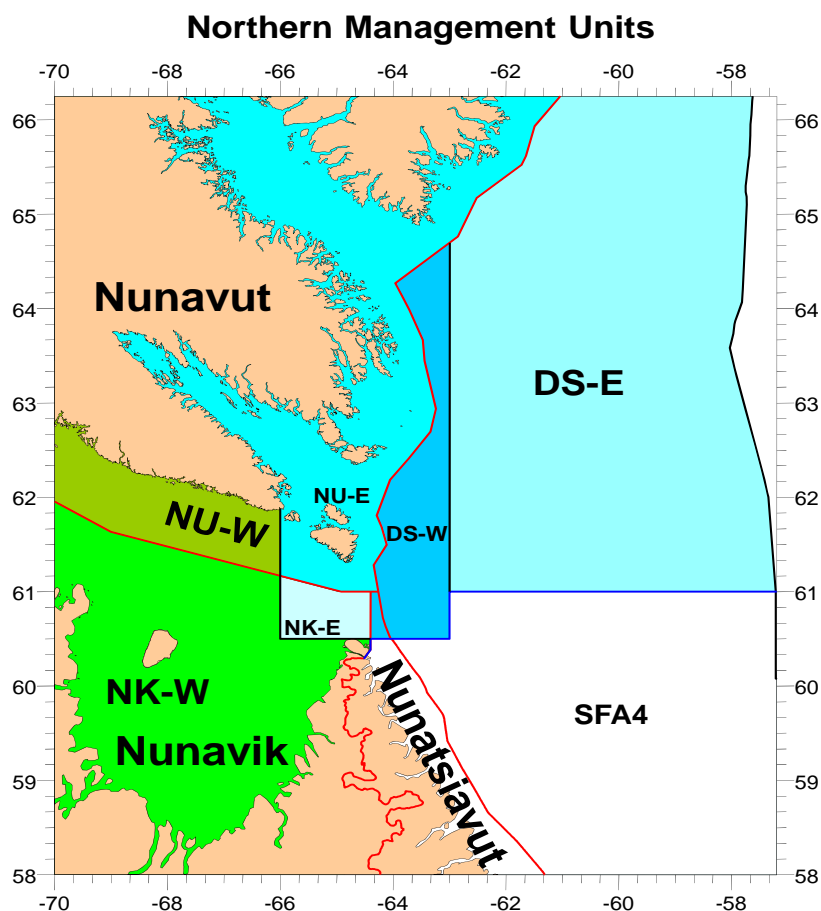
Recommendation: X

Issue: Total Allowable Catch levels for Northern (*Pandalus borealis*) and Striped (*Pandalus montagui*) Shrimp for the 2017/18 and 2018/19 seasons

Map:

Blue areas – Eastern Assessment Zone

Green areas – Western Assessment Zone



Background

Two shrimp species (*Pandalus montagui* and *Pandalus borealis*) occur in the Northern shrimp fishery that takes place in the Davis Strait and eastern Hudson Strait which

includes parts of the Nunavut Settlement Area (NSA) and the Nunavik Marine Region (NMR). Total Allowable Catch (TAC) for each species is set for two distinct science assessment zones (East and West), then distributed into management units as per defined sharing arrangements.

In March, 2015, the Nunavut Wildlife Management Board and the Nunavik Marine Region Wildlife Board (i.e. the Boards) made recommendations and decisions for a two year period (2015/16 and 2016/17) for Total Allowable Catches (TACs) for both species in the Eastern and Western Assessment Zone, respectively. The Boards further agreed that the Department would return to the Boards to reconsider TAC decisions and / or recommendations should there be a precipitous change in fishable biomass for either species in either Zone. The Boards agreed that a ‘precipitous change in biomass’ is defined as any change, up or down, greater than 25%.

For the 2016/17 fishery, the Minister’s decisions were to maintain TACs for both species in the WAZ and the montagui TAC in the EAZ. For borealis in the EAZ, the decision was to increase the TAC by 15%, resulting in an exploitation rate of 12%. 100% of the increase went to Nunavut (90%) and Nunavik (10%), both inside settlements areas and in the Davis Strait East management unit. The science used as a basis for considering these TACs incorporated the 2015 survey data as well as the decisions and recommendations of the NWMB and the NMRWB.

Considering full stock assessments, which support the management of the fishery, are conducted on a two-year cycle, the Department requests Board decisions and recommendations for a two-year period. Thus, the TAC levels for each species of shrimp need to be established for the 2017/18 and 2018/19 seasons. Consistent with past practice, the Department will return to the Boards for the opportunity for reconsideration should the Science assessment (2017 survey) or update (2018 survey) indicate a precipitous change in fishable biomass for either species in either Zone during this time.

The 2016/17 exploitation rates (ER) in the EAZ for borealis and montagui were 12% and 13.7% respectively. The WAZ has been managed at an ER of 10%, considering the newness of the fishery and the limited data available from the current time series surveys. The EAZ has been managed at an ER in the order of 15%. The 2016/17 TAC levels for borealis and montagui in the WAZ were 7.3% and 11.1% respectively. The science used as a basis for considering these TACs incorporated the 2016 survey data.

As has occurred in the past, the timing of consultative and co-management processes and the availability of new science information to inform decision making will be a consideration again this season. Science results for the most recent 2016 survey are expected by mid to late February. Consultation with NSAC is planned for early March. The NWMB and NMRWB regular meetings are typically held mid-March (earlier for the NMRWB in 2017) and the opening of the shrimp fisheries is April 1.

Therefore, to better position the fishery for the 2017/18 season and avoid delays to best degree possible, the Department is seeking decision and advice from the Boards on pre-agreed methodology on TACs for the 2017/18 and 2018/19 fishing seasons in the WAZ and the EAZ, respectively.

Western Assessment Zone – For Decision

The WAZ falls entirely within the NSA/NMR. As agreed by the Boards and supported by affected stakeholders, a maximum 10% ER was applied in the WAZ from 2013 – 2015, given the newness of the fishery and the limited data available from the current time series surveys. In 2016 the TACs were rolled over which resulted in a slightly higher ER for montagui at 11.1%, which was considered to be acceptable by the Boards and supported by the Minister. Maintaining the borealis TAC of 2,080t resulted in an ER of 7.3%.

Beginning in 2014, the science survey in the WAZ was undertaken by the Northern Shrimp Research Foundation (NSRF) and the Department. As such, the vessel and gear used to complete the survey changed, as well as the time of year the survey is conducted. Consequently, the time series for this assessment zone is reset with 2014 as year one. In the WAZ, the 2015 survey indicated precipitous changes in fishable biomass for both borealis (31% increase) and montagui (28% decrease). Science advises that at least 3 – 5 reliable points on the time series are required to responsibly make any decisions to modify the TAC.

Additionally, implicit in quota and Total Allowable Take (TAT) decisions, the Boards recommended the continuation of the 50/50 split of the TAT between Nunavut and Nunavik in the two year decision for 2015/16 and 2016/17, which the Minister accepted.

Recommendation:

Given that the 2016 survey is the third data point in the time series for the WAZ, representing the minimum number suggested to provide sound science advice on TAC modifications, and given the precipitous change in fishable biomass for both species from the 2015 survey, the most precautionary way forward to ensure that shrimp harvesting inside the settlement areas remains within sustainable catch levels is to maintain current TACs in the WAZ and acquire additional data points on the time series. Maintaining existing TACs for a two-year period is unlikely to raise any conservation concerns despite the current exploitation rate for montagui being slightly greater than 10%. The 2018 survey will represent year 5 of the time series, providing more confidence that any changes in TAC will not affect the sustainability of the stocks.

The Eastern Assessment Zone – For Recommendation

The EAZ falls both within and outside the NSA/NMR. This stock has been managed at an ER in the order of 15%. Accordingly, the borealis TAC, which was estimated to be in the Healthy Zone of the Department's Precautionary Approach Framework, was increased by a maximum of 15% for 2016/17 (9,488t) resulting in an ER of 12%. The montagui TAC was rolled over at 840t for an ER of 13.7%, which is in keeping with the 15% maximum ER for a stock in the Cautious Zone.

Additionally, implicit through the two-year quota and TAT decisions for the 2015/16 and 2016/17 fisheries, the Boards recommended the continuation of the sharing arrangements between Nunavut and Nunavik, as well as between the NU /NK East and Davis Strait management units, which the Minister accepted.

In the EAZ, *montagui* is the directed fishery and *borealis* is taken as a bycatch species in the Nunavut and Nunavik East management units, while the reverse is true for the Davis Strait management units. Any consideration of increasing the *borealis* TAC should take into account the need to ensure there is sufficient availability of *montagui*; should the full *montagui* TAC be taken the *borealis* fishery would be closed and vice versa.

TACs:

Option 1: (**Recommended**) Maintain both TACs at current levels, provided that the ER remains in the order of 15% (16% or less). Should the *montagui* stock fall within the Critical Zone, a 10% ER will be applied to that TAC.

Option 2: Set the TACs at 15% if the stock is in the Healthy Zone or Cautious Zones (noting a maximum TAC change of 15%), or at 10% if in the Critical Zone.

RECOMMENDED	<i>Pandalus montagui</i>	<i>Pandalus borealis</i>
Western Assessment Zone	6,138t (11.1% in 2016)	2,080t (7.3% in 2016)
Eastern Assessment Zone	840t (13.7% in 2016)	9,488t (12% in 2016)

Should the science assessment identify a ‘precipitous change in biomass’ (up or down, greater than 25%) for either specie in the WAZ or EAZ, DFO will seek a modification of the Board’s relevant decisions and recommendations.

Request

Considering this, the Department is seeking from the Board, for a two-year period:

- 1) A recommendation on setting TACs for both species in the EAZ, considering the current positioning of the *montagui* resource in the Cautious Zone and the 56% increase of *borealis* fishable biomass from the 2015 survey. The Department recommends Option 1; and
- 2) Concurrence to roll over the TACs in the WAZ, considering the precipitous changes in biomass as per the 2015 survey, and the need to have additional survey points in the time series before considering any changes to the TACs.
- 3) Decision on sharing arrangements between Nunavut and Nunavik within the settlement areas, and a decision on sharing between the NU / NK East and Davis Strait management units.

Prepared by: Ecosystems and Fisheries Management, Fisheries and Oceans Canada

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