

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

**FOR**

**Information:**

**Decision: X**

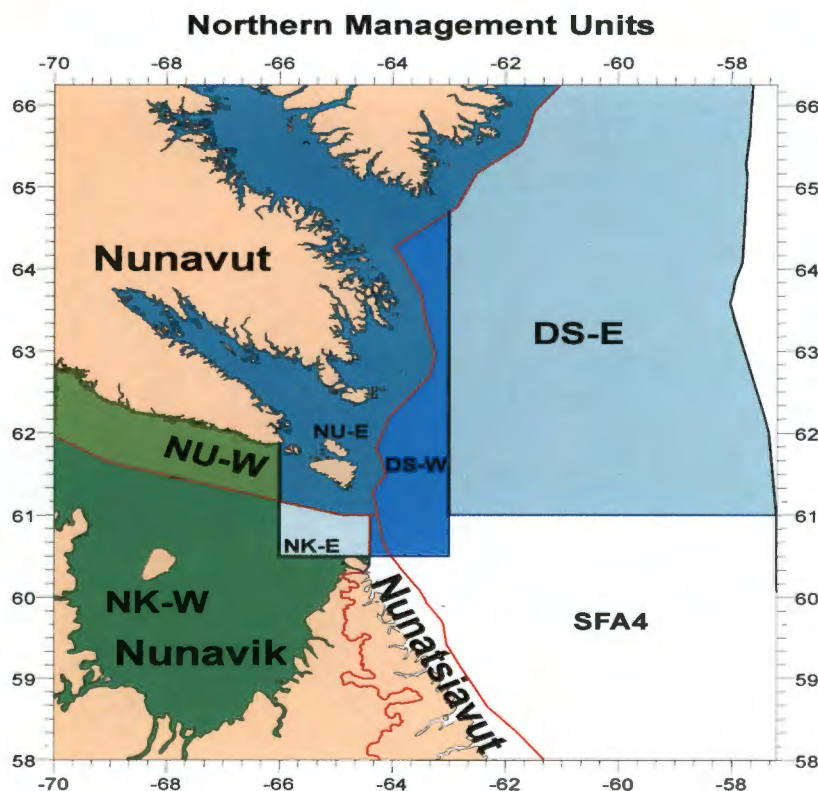
**Recommendation: X**

**Issue: Total Allowable Catch levels for Northern (*Pandalus Borealis*) and Striped (*Pandalus Montagu*) Shrimp for the 2018/19 season**

**Map:**

Blue areas – Eastern Assessment Zone

Green areas – Western Assessment Zone



**Total Allowable Catch levels for Northern (*Pandalus Borealis*) and Striped (*Pandalus Montagu*) Shrimp for the 2018/19 season**

**Background**

Two shrimp species (*Pandalus Montagu* 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.

The Minister's decisions for the 2017/18 TACs incorporated science advice, which in turn considered the 2016 and 2015 survey data, the decisions and recommendations of the NWMB and the NMRWB, and consultations with the Northern Shrimp Advisory Committee in the EAZ. For the 2017/18 fishery, the TACs and allocations for both species in the WAZ and the EAZ were maintained.

Full stock assessments are conducted on a two-year cycle, with the next full assessment anticipated in 2019. Science is providing a stock status update to inform the TAC decisions for the coming season.

Decisions and recommendations on TAC levels in the Western Assessment Zone (WAZ) and Eastern Assessment Zone (EAZ) respectively for each species of shrimp for the 2018/19 season are required from both Boards.

However, 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 updates for the most recent 2017 survey are expected by mid to late February, 2018. Consultation with NSAC is planned for early March. The NWMB and NMRWB regular meetings are typically held mid-March and the opening of the shrimp fisheries is April 1.

Therefore, to better position the fishery for the 2018/19 season and avoid delays insofar as possible, the Department is seeking decisions and advice from the Boards on pre-agreed methodology on TACs for 2018/19 fishing season in the WAZ and the EAZ.

#### **Western Assessment Zone – For Decision**

The WAZ falls entirely within the NSA/NMR. 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 was reset with 2014 as year one. Science advises that at least 3 – 5 reliable points on the time series are required to responsibly make any decisions to modify the TAC. In the WAZ, changes in fishable biomass greater than 25% (considered precipitous) has occurred for both species each year since the new survey began, with the exception of Borealis in the 2013 and 2014 surveys. The 2016 survey last year indicated biomass declines for Borealis (54%) and Montagu (42.5%). The rollover of the TACs (2,080t and 6,138t) resulted in ERs of 15.9% for Borealis and 19.3% for Montagu. Prior to the 2016 fishing season, the ERs were below 10% in most cases.

Implicit in quota and Total Allowable Take (TAT) decisions by the Boards for 2017/18, which the Minister accepted, was the continuation of the 50/50 split of the overall TAC between Nunavut and Nunavik.

The Department is seeking the respective Board decisions on harvest levels for NU/NK West (i.e. overall TAC), and confirmation of the split of the overall TAC between Nunavut and Nunavik Inuit.

### Recommendation for the WAZ:

Given that Science has four data points in the time series, and given the often precipitous changes in fishable biomass for both species in recent years, a reasonable approach to ensure that shrimp harvesting inside the settlement areas remains within sustainable catch levels is to maintain current TACs in the WAZ and acquire one additional data point on the time series before making modifications to the TACs. Maintaining existing TACs for 2018/19 is reasonable from a Science perspective given the newness of the survey. However, it is possible that this approach could result in the ER for one or both species increasing greater than the current 15.9% for Borealis and 19.3% for Montagu. The Boards could consider, as a precautionary measure, establishing TACs based on a 15% ER, which could result in either an increase or reduction for one or both species. The 2018 survey next year will represent year five of the time series, providing increased confidence that any changes in TAC are based on a more fulsome understanding of the stock.

#### TACs:

##### Option 1:

Rollover both TACs for both species until the fifth data point is available from next year's survey, at which time a full stock assessment will be undertaken.

##### Option 2:

Rollover the TACs for both species provided that current ERs (15.9% for borealis and 19.3% for Montagu) are not exceeded should the 2018 survey indicate fishable biomass declines.

##### Option 3: **(Recommended)**

Establish the overall TACs based on a 15% ER for both species as a precautionary measure.

### **The Eastern Assessment Zone – For Recommendation and Decision**

The EAZ falls both within and outside the NSA/NMR. This stock has been managed at an ER in the order of 15%. While the Borealis stock is in the Healthy Zone of the Department's PA Framework, there is continued uncertainty associated with the Montagu stock.

In the EAZ, TACs for the 2017/18 fishing season were rolled over for Borealis (9,488t) and Montagu (840t), resulting in ERs of 14.47% (Borealis) and 6.1% (Montagu), which is consistent with the management of this area in the order of a 15% ER. Additionally, implied through the quota and TAT decisions by the Boards for each of the 2015/16 – 2017/18 fisheries, which the Minister accepted, was the continuation of the split between Nunavut and Nunavik Inuit in NU/NK East, as well as the distribution between the NU/NK East and Davis Strait management units.

In the EAZ, Montagu 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 offshore 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 bycatch allocation be taken, the Borealis fishery would be closed and vice versa.

The Department is seeking the recommendations of the Boards on the TAC for both species in the EAZ. The Boards' advice on TAC will imply confirmation the distribution between the offshore area (Davis Strait) and the NSA/NMR (NU/NK East management Units). In addition, the Department is seeking the decisions of the Boards on the harvest level for the NU/NK East management Units.

#### TACs:

Option 1: **(Recommended)** Maintain both TACs at current levels, recognizing that the stock has traditionally been managed at a 15% ER, with precedence in the southern areas for a maximum ER of 20%, 15% and 10% in the Healthy, Cautious and Critical Zones respectively.

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

#### Summary of Request

Considering this, the Department is seeking from the Board, for the 2018/19 fishery:

- 1) Concurrence to establish the overall TACs based on a 15% ER for both species in the WAZ (Option 3), considering fluctuations in fishable biomass in recent years and that one more survey point in the time series will better inform the TACs.
- 2) A recommendation on TACs for both species in the EAZ, considering the extreme fluctuations and resulting uncertainty associated with the Montagui stock, and the current positioning of the Borealis resource in the Healthy Zone. The Department recommends Option 1; and
- 3) Sharing decisions, which can be implied through TAC and harvest levels:
  - a. Decision on sharing arrangements for Nunavut and Nunavik in the WAZ
  - b. Decision on sharing arrangements for NU/NK East management units
  - c. Recommendations on distribution of EAZ TAC between the NU/NK East and offshore Davis Strait management units

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

**Date:** February, 2018