

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

**FOR**

**Information:**

**Decision: X**

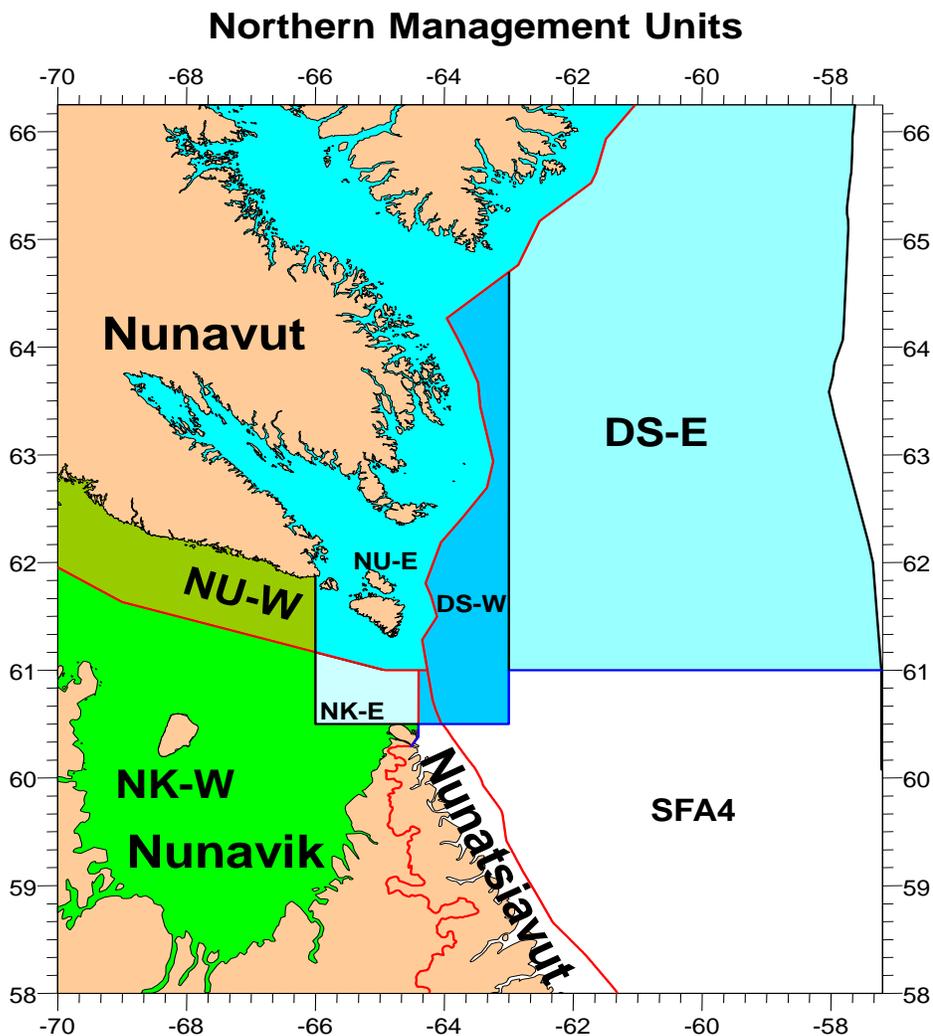
**Recommendation: X**

**Issue: Revisiting Total Allowable Catch levels for Northern (*Pandalus borealis*) and Striped (*Pandalus montagui*) Shrimp for the 2016/17 season**

**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.

The Nunavut Wildlife Management Board and the Nunavik Marine Region Wildlife Board (i.e. the Boards) made a decision to slightly increase *montagui* in the Western Assessment Zone and roll over the remaining TACs for the 2015/16 fishery, and roll over all for the 2016/17 fishing season based on an exploitation rate (ER) of 15% in the Eastern Assessment Zone (EAZ) and 10% ER in the Western Assessment Zone (WAZ). The Boards also indicated that, should any of the stocks experience a precipitous change (i.e. greater than 25% up or down) in biomass, both Boards would reconsider their TAC decisions and recommendations. The science advice used as the basis for these TAC recommendations is based on the 2014 and 2015 surveys. The 2015 survey data indicates precipitous changes in fishable biomass for *borealis* and *montagui* in both Zones. Therefore the Boards can reconsider the TAC levels for each species in the EAZ and WAZ for the 2016/17 season. While *borealis* has increased in the EAZ and WAZ by 56% and 31% respectively, *montagui* has decreased in these areas by 63% and 28% 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 10% ER was applied in the WAZ in 2013, 2014 and 2015 given the newness of the fishery and the limited data available from the current time series surveys. Additionally, implicit in quota and Total Allowable Take (TAT) / Total Allowable Catch (TAC) 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.

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, as well as the time of year the survey was conducted, changed. Consequently, the time series for this assessment zone is 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, *borealis* has increased by 31% and *montagui* has decreased by 28% in the past year. The 2015 survey is the second point in the time series and at minimum another year's survey results are suggested before any consideration of modifying the TACs could reasonably occur.

### Recommendation:

Given the time series restarted in 2014 and several survey data points are required to provide sound science advice on TAC modifications, the most reasonable and precautionary way forward to ensure that shrimp harvesting inside the settlement areas remain within sustainable catch levels is to maintain current TACs in the WAZ.

Maintaining existing TACs for the 2016/17 season is unlikely to raise any conservation concerns despite the exploitation rate for montagui being slightly greater than 10% (11.1%) at the TAC of 6,138t. A rollover of the 2,080t borealis TAC is an exploitation rate of 7.3% (table of recommendations below). A reduction in fishing pressure on the montagui resource may be a necessary outcome following the collection of additional survey points. Respecting that the Boards have a decision making capacity with regard to setting TACs in the WAZ, the Department strongly recommends a rollover of TACs for both species for 2016/17.

### **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%. Due to reductions in biomass in 2013, the TAC was reduced to a 15% exploitation rate for the 2014/15 season and the TAC was maintained in 2015/16. Based on the 2015 survey results, the fishable biomass of borealis has increased by 56% while montagui decreased by 63%. Of note, montagui has returned to the Cautious Zone, where the maximum ER is 15% and as such, the montagui TAC should be maintained at 840t. A rollover of these TACs would result in ERs in the EAZ of 10.4% and 13.7% respectively. Increasing the borealis TAC of 8,250t by 15% would provide a TAC of (9,488t) which results in an ER of 12%.

Additionally, implicit through the two year quota and TAT / TAC 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 Boards and the offshore fleet, which the Minister accepted.

The Northern Shrimp Advisory Committee met on March 3, 2016 and was attended by the offshore fleet, which has allocations in Davis Strait in the EAZ. The Department sought recommendations from the Committee on TACs for both species in the EAZ, and indicated the need to return to the Boards for additional consideration, as triggered by precipitous changes in biomass. There was support from the offshore fleet for a rollover of TACs for both species in the EAZ.

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 offshore fleet in 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 will be closed and vice versa.

#### TACs:

Option 1: Increase the borealis TAC of 8,250t by 15% (9,488t) which results in an ER of 12%. Maintain the montagui TAC at 840t (13.7% ER).

Option 2: **Recommended** (table below): Maintain the TAC at the current levels, recognizing that the exploitation rates for both species are below 15%, which for montagui is the maximum considering it's positioning in the Cautious Zone.

#### Request

The Department is seeking recommendations for TACs for both species in the EAZ, and decisions from the Board for TACs for both species in the WAZ as follows:

- 1) A recommendation on setting 2016/17 TACs for both species in the EAZ, considering the precipitous changes in fishable biomass and the positioning of the montagui resource in the Cautious Zone. The Department recommends a rollover for both species; and
- 2) A decision on TACs for both species in the WAZ, considering the precipitous changes in biomass and the need to have additional survey points in the time series before responsibility taking any decision to modify the TAC.

Summary of Recommendations:

<b>RECOMMENDED</b>	<i>Pandalus montagui</i>	<i>Pandalus borealis</i>
Western Assessment Zone	6,138t (11.1%)	2,080t (7.3%)
Eastern Assessment Zone	840t (13.7%)	8,250t (10.4%)

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

**Date:** March, 2016

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

The Department of Fisheries and Oceans recently submitted a request to the Nunavut Wildlife Management Board (NWMB) and the Nunavik Marine Region Wildlife Board (NMRWB) to reconsider the Boards' recommendations and decisions for Total Allowable Catches / Takes (TAC / TAT) in the Eastern and Western Assessment Zones respectively, for both *P borealis* and *P montagui*.

Recognizing that final decisions on TACs for both species in both Zones will not be taken by the opening of the April 1 fishery, and recognizing that an external review of the Last In, First Out policy is being undertaken which may further delay the decision making process for final 2016/17 TACs, the Department is seeking the Boards' concurrence to release interim quotas to Nunavut and Nunavik allocation holders at 50% of 2015 levels. The offshore fleet was allocated 50% of its 2015/16 borealis and montagui bycatch quotas in Davis Strait West (i.e. 2,406t and 205t respectively).

**Request**

Considering this, the Department is seeking from the Boards:

- 1) Concurrence to release interim quotas to Nunavut and Nunavik allocation holders at 50% of 2015/16 levels as follows:

<b>AREA</b>	<b>FLEET / INTEREST</b>	<b>TAC (t)</b>
Nunavut East	<i>Pandalus montagui</i>	150
	<i>Pandalus borealis</i> (bycatch)	92
Nunavik East	<i>Pandalus montagui</i>	65
	<i>Pandalus borealis</i> (bycatch)	23
Nunavut West	<i>Pandalus montagui</i>	1,535
	<i>Pandalus borealis</i>	520
Nunavik West	<i>Pandalus montagui</i>	1,535
	<i>Pandalus borealis</i>	520

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

**Date:** March 30, 2016