Baffinland

Baffinland Mary River Project Report Working Group Comment Form

Reviewer Agency/Organization:	*Parks Canada Agency*
Reviewers:	*Allison Stoddart, Jordan Hoffman, Chantal Vis*
Document(s) Reviewed:	*2021 Bruce Head Shore Based Monitoring Program, 2021 MEEMP and AIS Monitoring Program, 2021 Marine Mammal Aerial Survey, 2021 Ringed Seal Aerial Survey, 2021 Underwater Acoustic Monitoring Program (Open-water Season), Year 2 Freight Dock Offset Habitat Monitoring Program*
Date Review Completed	*2022-05-17*

Comment No.:	PCA-01
Section Reference:	2021 Bruce Head Report, Page viii, 'Future Recommendations', first bullet point
Comment:	

The UAV surveys have lacked enough data to conduct a meaningful analysis of behavioural responses relative to 'distance from vessel' for the Bruce Head monitoring program in 2020 and 2021.

1. How will this aspect of the monitoring program be adapted to ensure there is a sufficient sample size moving forward?
2. Will more drones/locations be added?

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-02
Section Reference:	2021 Bruce Head Report, Page 165, Section 8.2 'Summary of Key Findings: Group Composition and Behaviour, Proportion of Immatures'
Comment:	

Results from the Bruce Head Monitoring Program report indicate a 24% decrease in the proportion of immatures from 2020 and the lowest observed proportion across all sampling years. The monitoring

report indicated that the lack of a significant difference in the 2021 calf proportion relative to other years may have been due to the low sample size and high variability in 2021. Golder has indicated that additional analysis of aerial survey data will be presented in the near future to confirm whether the observed decline is significant.

1. Given that there is uncertainty in the results, will a precautionary approach be taken with adaptive management measures applied given that proportion of immatures is an Early Warning Indicator if results from the aerial survey have not been reviewed by the MEWG prior to the start of shipping or potential ice-breaking activities?
2. How will monitoring be adapted moving forward to ensure there is appropriate statistical power to determine the significance of change in the Early Warning Indicator of proportion of immatures?

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-03
Section Reference:	Marine Mammal Aerial Survey, page 79, Section 3.6.1, 'Discussion: Narwhal Abundance and Distribution', first bullet point Bruce Head Monitoring Report, page 155, Section 7.1, 'Discussion: Relative Abundance and Distribution'
Comment:	

One of the conclusions made in the Marine Mammal Aerial Survey report is that underwater noise from open-water shipping was not considered to be a likely cause of narwhal displacement from the Regional Study Area based on the available monitoring results to date. Instead, other factors lacking area-specific data in Admiralty Inlet and Eclipse Sound such as prey availability or predation pressure (i.e., more favourable ecological conditions) are suggested to be causing the observed large-scale distribution shift to Admiralty Inlet. These conclusions are based on the past tagging data, open-water acoustic monitoring, and the Bruce Head study area. There are multiple lines of evidence, including Inuit Qaujimajatuqangit, which suggest shipping has an impact on narwhal. Monitoring studies to date have been spatially restricted (e.g., Bruce Head shore-based monitoring and UAV studies) or temporally restricted (e.g., aerial surveys, UAV studies, and marine mammal tagging) to fully consider that shipping is not a contributing factor to any potential long-term movements and displacement of narwhal. Further, in the Bruce Head monitoring report (page 155) Golder States that, "While **underwater noise from open-water shipping cannot be ruled out as a potential cause of narwhal displacement from the RSA**, monitoring results collected to date demonstrate that there are likely other factors contributing to the observed change."

1. How does Baffinland plan to follow up with studies to determine the influence of other ecological factors that are suggested in the 2021 monitoring reports or to further investigate the impacts of shipping on movement in less spatially restricted areas of Eclipse Sound (i.e., outside of inlets such as Tremblay Sound and Milne Inlet)?
2. Will a precautionary approach be taken which considers the impacts of shipping in the absence of evidence that other factor(s) are contributing to the observed decline in narwhal?

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-04
Section Reference:	Marine Mammal Aerial Survey, page 94, Section 5.0, 'Summary'
Comment:	

We recommend clarifying in the Discussion section that although both western science and Inuit Qaujimajatuqangit have identified that there is a natural exchange of narwhal between putative summer stocks for the Baffin Bay narwhal population, the current **magnitude of exchange** on an annual basis and resulting large-scale distribution shift has not been observed to date with satellite tag data or aerial survey abundance estimates and to our knowledge has not been identified by Inuit Qaujimajatuqangit. For example, science evidence from Fisheries and Oceans Canada identified 16% of narwhal tagged in 2012, and from 2016-2018 visited other summer management areas during July 25-August 24 (i.e., the period corresponding to when aerial surveys typically take place) and 33% of narwhal travelled to one or more summer management areas during the typical open water season (DFO, 2020). Based on point estimates of abundance in Eclipse Sound from 2019 to 2021 (page 77, Table 20) the approximate decline on an annual basis from 2019-2021 ranges from 50-52% during the typical aerial survey period compared to 16% of narwhal tagged in 2012, and from 2016-2018.

Reference:

DFO (2020). Information Related to the Delineation of the Eclipse Sound and Admiralty Inlet Narwhal Stocks. Canadian Science Advisory Secretariat, Sciency Advisory Report 2020/048.

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-05

Section Reference:	2021 Underwater Acoustic Monitoring Program (Open-Water Season), Page 30, Section 3.5 'Results: Listening Range Reduction'
Comment:	

We recommend that inter-annual comparisons of Listening Range Reduction for ambient and vessel noise be presented in future acoustic monitoring reports.

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-06
Section Reference:	2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program, Section 2.0 Water quality, pages 1-12
Comment:	

The stated objectives are to "Assess potential changes in marine water quality parameters" (p.1), however, the report does not provide any statistically-based inter-annual comparisons of water quality parameters through time at all sites. Figures 2.2- and 2-3 summarize trends through time for iron concentrations, however for only select sites. In general, results presented are descriptive and selective, and it is hard to discern if any significant changes in any of the parameters monitored have occurred through time. We suggest a statistical analysis of change through time of the key water quality parameters (e.g iron, etc) of all sites combined would be required to assess the significance of changes in water quality parameters through time.

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-07
Section Reference:	2021 Marine Environmental Effects Monitoring Program (MEEMP) and Aquatic Invasive Species (AIS) Monitoring Program, Section 8.0 Non-Indigenous and Aquatic Invasive Species monitoring, page 4

Comment:

The NIS/AIS program is designed as a surveillance survey, and does not have traditional indicators or thresholds, and as a result – it is unclear what adaptive management actions or responses would be implemented should a species on the Trigger list be detected. The report presents an overview of the response protocol aimed at assessing the risk and determining the appropriate course of action, however, the course of action leads to many steps (validation of identification, heightened monitoring, etc) which could take months or years to complete, prior to initiating an actual response plan. Does Baffinland have an early response/action plan ready for species on the trigger list? Or would this only be developed once the species is found and confirmed related to project. We suggest that an Early Response Plan (containment, eradication) and an Incident Command approach to responding to the species on the Trigger list could be prepared as part of the surveillance program to help reduce probability of species establishment.

Baffinland Response:

Baffinland's response goes here.

Comment No.:	PCA-08
Section Reference:	General Comment regarding Early Warning Indicators (EWI)

Comment:

Given the current issues obtaining a sufficient sample size to detect significant change in the calf proportion EWI and potential future issues if the local abundance of narwhal in Eclipse Sound remains low Parks Canada recommend the following:

- To implement additional EWIs proposed by the MEWG in 2019.
- To implement EWIs such as significant changes in narwhal or ringed seal local abundance that have data that is collected regularly and can be assessed before each operational season.
- Reengage the MEWG to develop additional mitigations and adaptive management practices to be triggered by reaching EWI thresholds.

Baffinland Response:

Baffinland's response goes here.