



NUNAVUT WILDLIFE MANAGEMENT BOARD

Meeting Week 3
October 21, 2026
Pangnirtung, Nunavut



	No:	Item:	Tab:	Presenter:	Maximum Time
9:00 - 9:02 AM	1	Open Meeting		Chairperson	1 minute
9:02 - 9:04 AM	2	Approval of Meeting Week 3 Agenda		Chairperson	2 minutes
9:04 - 9:05 AM	3	Review and approval of Meeting Week 3 Agenda	1	Chairperson	2 minutes
	4	Precautionary Approach Framework for Northern Shrimp (<i>Pandalus borealis</i>) [For NWMB Decision and Advice]	2	Fisheries and Oceans	
	5	To Seek NWMB Approval of the Tallurutiup Imanga National Marine Conservation Area Interim Management Plan and Non-quota Limitations on Harvesting by Non-Inuit within Specific Zones of Tallurutiup Imanga National Marine Conservation Area (For Decision)	3	Parks Canada	
	6	Update on a Proposed Adaptive Narwhal Management System for Northern and Eastern Baffin Island (For Information)	4	Fisheries and Oceans	
	7	Policy on Agreements and Permits Under Section 73 and 74 of the <i>Species at Risk Act</i> (For Information)	5	Environment and Climate Change Canada	
		Lunch			
	8	Proposed Critical Habitat Protection Regulations under Section 59 of the <i>Species at Risk Act</i> (For Information)	6	Environment and Climate Change Canada	

	9	Targeted Amendment of the Definition of "Federal Land" in the <i>Species at Risk Act</i> (For Information)	7	Environment and Climate Change Canada	
	10	Meeting adjournment of Meeting Week 3		Chairperson	

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

FOR

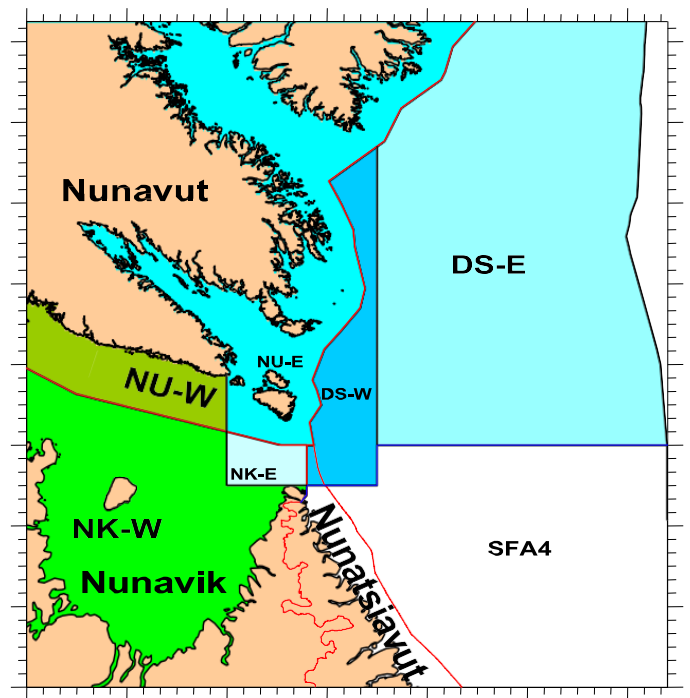
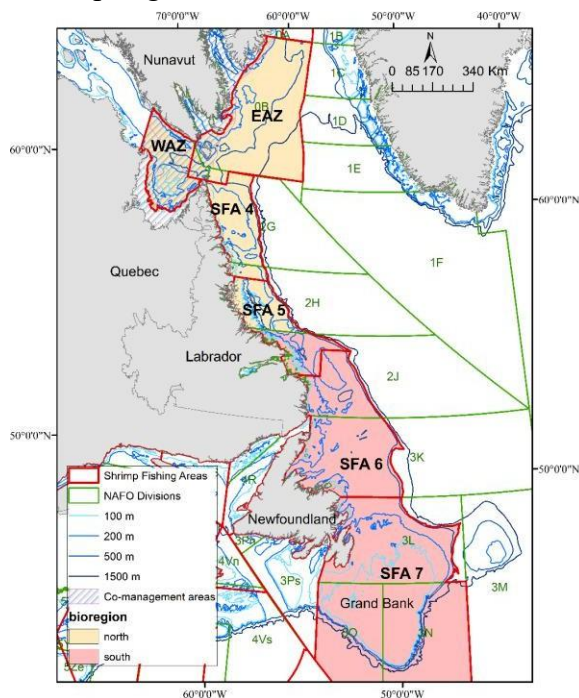
Information:

Decision: X

Recommendation: X

Issue: Precautionary Approach Framework for Northern shrimp (*Pandalus borealis*)

Map Left: Yellow – North Stock Assessment Region; Red – South Stock Assessment Region
Map Right: Blue – Eastern Assessment Zone; Green – Western Assessment Zone



Northern shrimp (*Pandalus borealis*)

Background

The Nunavut Wildlife Management Board and Nunavik Marine Region Wildlife Board (the Boards) previously approved Precautionary Approach Frameworks for Northern shrimp (*Pandalus borealis*) in the Western Assessment Zone and Eastern Assessment Zone in 2024. Since then, the Department of Fisheries and Oceans (DFO) has developed a new understanding of how Northern shrimp populations are structured. Rather than assessing Northern shrimp in the Eastern and Western Assessment Zones separately, since 2025 DFO considers them part of a larger biological population, namely the North Stock Assessment Region (map at Appendix 1), which also includes shrimp fishing area 4 and the northern portion of shrimp fishing area 5.

DFO has adopted a new scientific model that uses information from a wide variety of sources to provide an estimate of stock biomass, population growth, natural mortality and harvest rates in the North Stock Assessment Region (Appendix 2). Separate from the population model, a biomass index value is produced using the annual survey data for use in setting harvest levels. Together this information supports more robust and risk-based fisheries management, and is the basis of the proposed Precautionary Approach Framework.

The primary components of the Precautionary Approach Framework are: **Reference points** to define stock status zones (Healthy, Cautious and Critical) and **Harvest Decision Rules**.

The Limit Reference Point, which delineates the Cautious and Critical zones, as well as the proposed Upper Stock Reference point, delineating the Cautious and Healthy zones, are based on the new scientific model and were developed through a Canadian Science Advisory Secretariat peer review process led by DFO Science in 2024 (Appendix 2). The model will be updated every three years during a full stock assessment, which will update the stock status (whether the stock is placed in the Healthy, Cautious, or Critical Zone), Limit Reference Point, and proposed Upper Stock Reference point. The biomass index value, which is produced using survey data, will be updated every year and is used to determine total allowable catch based on the Harvest Decision Rule.

Since 2024, DFO, industry, Indigenous organizations, provincial governments, co-management partners, and technical experts worked together to develop a Management Strategy Evaluation process for Northern shrimp. This Management Strategy Evaluation tested different management options (Harvest Decision Rules) using computer simulations to identify approaches that best balance conservation of the stock and stable fishing opportunities for industry in the North Stock Assessment Region. The Management Strategy Evaluation framework and supporting science were peer-reviewed through the Canadian Science Advisory Secretariat in December 2025 (Appendix 3).

A new Harvest Decision Rule, to determine the harvest limit for the North Stock Assessment Region shrimp population, was endorsed by the Northern Shrimp Advisory Committee and

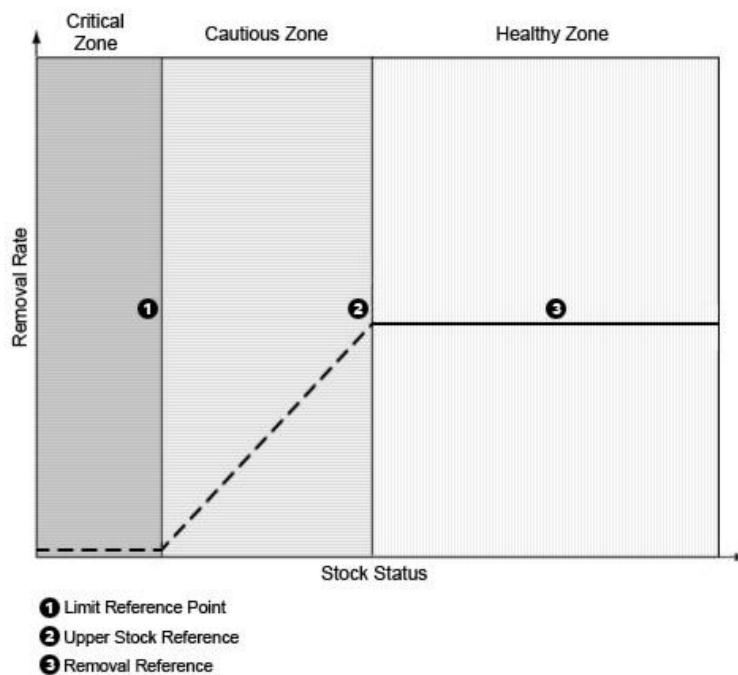
used to inform the 2026-27 total allowable catch levels for the other management areas in the North Stock Assessment Region, as well as DFO's recommendations to the Boards for decisions and recommendations on 2026-27 total allowable catch levels for the Eastern and Western Assessment Zones. The new Harvest Decision Rule will be formally reviewed in 2028 as part of the next full stock assessment.

The Boards' joint decisions and recommendations for the 2026-27 total allowable catches in the Eastern and Western Assessment Zones followed the Harvest Decision Rules previously approved in 2024, but encouraged DFO to submit a separate proposal for the approval of a new Precautionary Approach Framework. The purpose of this briefing note is to seek Board decisions and recommendations, as appropriate, to adopt a new Precautionary Approach Framework for Northern shrimp in the North Stock Assessment Region to guide fisheries management decision making, beginning in the 2027-28 fishing season.

Reference Points

The Limit Reference Point, which defines the boundary between the Cautious and Critical Zones, was established through the scientific peer-review process. The Upper Stock Reference, which defines the boundary between the Healthy and Cautious Zones, is a proposed reference point that is ultimately a management decision. A graphical depiction of the Precautionary Approach framework is shown in Figure 1.

Figure 1. Illustrative example of reference points and stock status zones of the Precautionary Approach framework.



The previous stock assessment frameworks for Northern Shrimp in the Eastern and Western Assessment Zone management areas were based on a biomass index for each management area, which represented only a portion of the absolute biomass of each stock at a single point in time. Under the new stock assessment framework, the scientific model provides an estimate (not an index) of the shrimp population size that scientists believe can support the largest long-term sustainable fishery (see Appendix 2 for more details). This estimated value, referred to as the “biomass target”, is based on biological factors including shrimp growth, reproduction, and natural mortality, and is used to calculate the reference points.

Shrimp biomass in the North Stock Assessment Region has never been observed at levels as low as the newly established Limit Reference Point. As a result, there is uncertainty about how the stock would respond if it declined into the Critical Zone or how quickly it could recover. To account for this uncertainty, and because shrimp are an important food source for many marine species, the Limit Reference Point was set at 50% of the biomass target. Setting the Limit Reference Point at the 50% level provides an additional conservation buffer than the commonly used default of 40% of the biomass target (Table 1). The proposed USR at 80% of the biomass target (Table 1) is intended to trigger management action earlier if the stock begins to decline. Unlike fixed biomass numbers that were part of the previous Precautionary Approach Frameworks for the Eastern and Western Assessment Zones, the reference points for the North Stock Assessment Region may change following each full stock assessment because they are recalculated using the newest scientific information and a new estimate of the biomass target. Additional details on reference points are provide in the peer reviewed Science Advisory Report in Appendix 2.

Table 1. Reference points for *Pandalus borealis* in the North Stock Assessment Region.

Reference Point	Description
Limit Reference Point	50% of the biomass target
Upper Stock Reference	<i>Proposed</i> at 80% of the biomass target

Harvest Decision Rules

The Harvest Decision Rule uses the biomass index produced from the annual survey data and control points (upper and lower) to determine how much shrimp can be harvested in the North Stock Assessment Region each year. Reference points (and stock status) can only be compared to the full stock biomass from the scientific model, while control points can be compared to the annual biomass index. Control points are linked to the reference points and are estimated during the full assessment every three years. Being above the upper control point functions similar to being in the Healthy Zone, between the upper and lower control points is similar to the Cautious Zone, and below the lower control point is similar to the Critical Zone. The biomass index and placement relative to the control points is calculated every year.

Between 2024 and 2026, DFO, industry, Indigenous organizations, co-management partners, provincial governments, and technical experts tested various Harvest Decision Rules for the

North Stock Assessment Region through a Management Strategy Evaluation process. The objective was to identify an approach that balances conservation with stable fishing opportunities.

The recommended Harvest Decision Rule is based on the previously used 2-step Harvest Decision Rule, previously approved by the Boards in 2024, with some additional elements. The recommended HDR uses:

- a target harvest rate of 20% when the stock is above the upper control point;
- lower harvest rates if stock conditions decline;
- a maximum annual change of 25% to the total allowable catch; and
- a four-year phase-in period (from 2026-27 to 2029-30).

The maximum annual change of 25% of the total allowable catch is a limit of 25% that prevents sudden changes in total allowable catches. It provides greater stability for industry while still allowing management to respond to changes in stock conditions given that the stock can fluctuate from year to year. Without limits in place, year-to-year total allowable catches could increase or decrease sharply, creating uncertainty for harvesters, processors, and communities.

The four-year phase-in period is intended to gradually transition the fishery from the old approach to the new one given that the new harvest decision rule uses a different stock assessment model. This avoids abrupt changes in total allowable catches that could occur when moving to a new management system and allows participants time to adjust. The phase-in does not change the long-term outcome, but provides a more gradual and predictable transition, which would result in full implementation of the proposed harvest decision rule starting in 2030.

The four year phase-in and 25% limit on changes to total allowable catches are additional safeguards that were not included in the previous Harvest Decision Rule. A detailed explanation and example of how the Harvest Decision Rule works is provided in Appendix 4.

Consultation

The proposed Precautionary Approach framework was developed through extensive collaboration with representatives from DFO, industry, Indigenous organizations, provincial governments, co-management boards, and technical experts from 2024 to 2026. Staff from both Boards attended key discussions. Nunavut and Nunavik industry (and/or representatives thereof) participated in both consultation opportunities.

In January and March 2026, the Northern Shrimp Advisory Committee reviewed the proposed Upper Stock Reference point and the Harvest Decision Rule for the North Stock Assessment Region, endorsing the following:

- the proposed Upper Stock Reference at 80% of the biomass target;
- the harvest decision rule with a 20% harvest rate 25% maximum annual TAC change, and a four-year phase-in period.

A summary of discussion is at Appendix 5

The Harvest Decision Rule for the North Stock Assessment Region that was endorsed by the Northern Shrimp Advisory Committee uses a harvest rate above maximum sustainable yield. Science advice indicated that a lower harvest rate would be consistent with maximum sustainable yield and would reduce the risk of the stock entering the Cautious or Critical Zones. However, participants concluded that the selected approach represented an acceptable balance between conservation objectives, harvesting opportunities, and economic stability.

As part of Management Strategy Evaluation implementation, DFO will develop a protocol to define conditions under which the Management Strategy Evaluation approach may no longer be appropriate. In addition, the performance of the selected Harvest Decision Rule will be formally reviewed in 2028 to evaluate how well the Harvest Decision Rule is meeting conservation, yield, and stability considerations.

Recommendation

DFO recommends that the Boards adopt the Precautionary Approach Framework presented herein for Northern shrimp in the North Stock Assessment Region. Adoption of this Precautionary Approach Framework constitutes an amendment to the Integrated Fisheries Management Plan, and would include adoption of the reference points and the Harvest Decision Rule for Northern shrimp in the North Stock Assessment Region:

- Limit Reference Point at 50% of the biomass target;
- proposed Upper Stock Reference at 80% of the biomass target; and,
- Harvest Decision Rule with a 20% harvest rate, 25% maximum annual change in total allowable catch, and a four-year phase-in period.

Summary of the Request

DFO is seeking from the Boards:

1. Decisions to adopt the proposed Precautionary Approach Framework for Northern shrimp in the Nunavut/Nunavik East and Nunavut/Nunavik West management units within the Nunavut Settlement Area and Nunavik Marine Region, respectively.
2. Recommendations to adopt the proposed Precautionary Approach Framework for Northern shrimp in waters adjacent to the Nunavut Settlement Area and Nunavik Marine Region.

DFO recognizes that the Precautionary Approach Framework(s) serves to guide fisheries management decision making using a precautionary approach, and that Minister and co-management partner discretion would remain in annual decision making (e.g. setting of Total Allowable Catch levels).

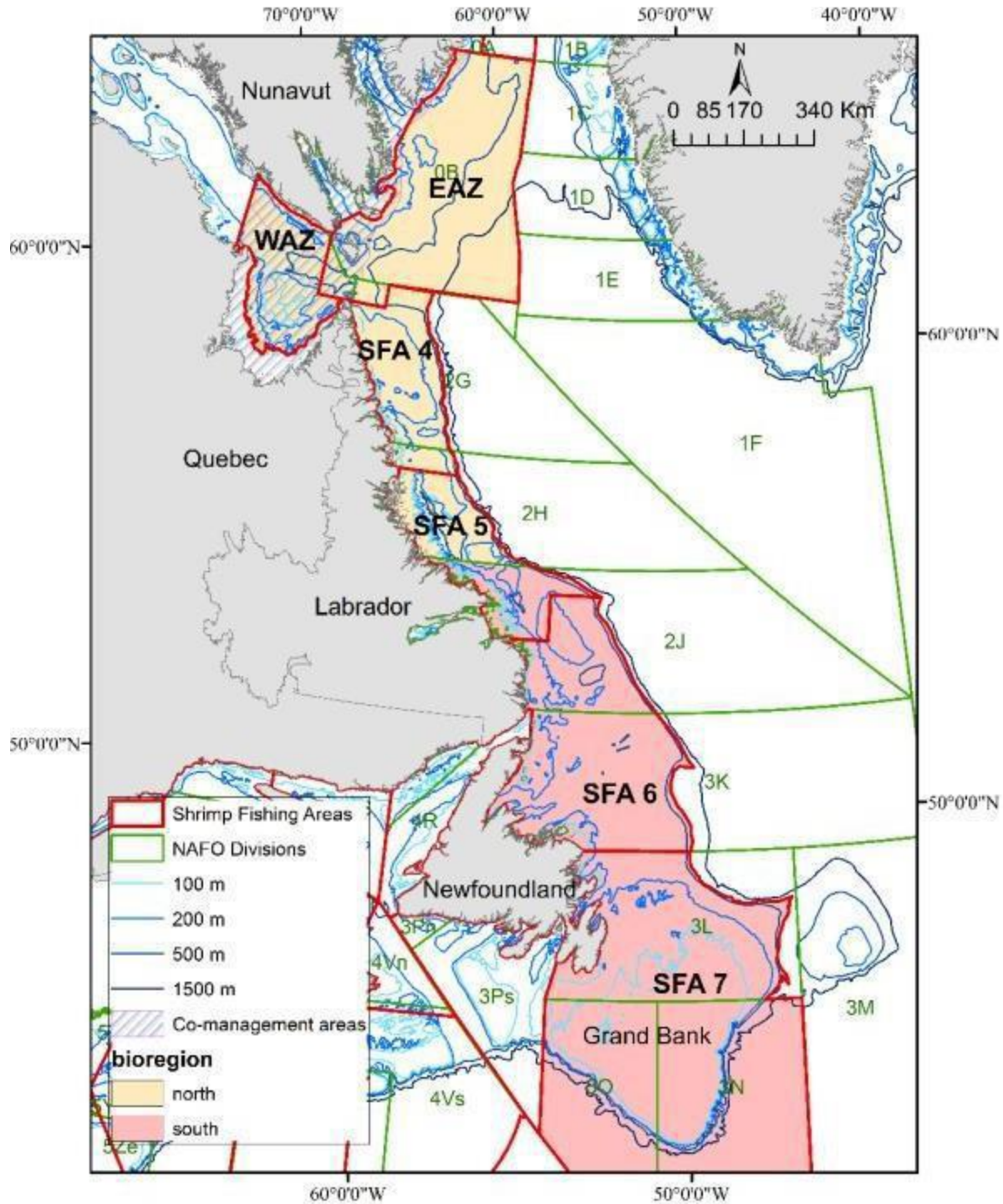
Prepared by: Liliya Baranova, Fisheries Resource Management, Fisheries and Oceans Canada

Date: September 16, 2026

Appendix 1

Map of the North and South Stock Assessment Regions

Yellow – North Stock Assessment Region; Red – South Stock Assessment Region





Fisheries and Oceans
Canada

Pêches et Océans
Canada

Ecosystems and
Oceans Science

Sciences des écosystèmes
et des océans

Newfoundland and Labrador Region
Arctic Region

Canadian Science Advisory Secretariat
Science Advisory Report 2026/033

DEVELOPMENT OF A PRECAUTIONARY APPROACH FRAMEWORK FOR NORTHERN SHRIMP (*PANDALUS BOREALIS*) IN SHRIMP FISHING AREAS 4–7, EASTERN ASSESSMENT ZONE, AND WESTERN ASSESSMENT ZONE



Northern Shrimp (*Pandalus borealis*; Fisheries and Oceans Canada [DFO]).

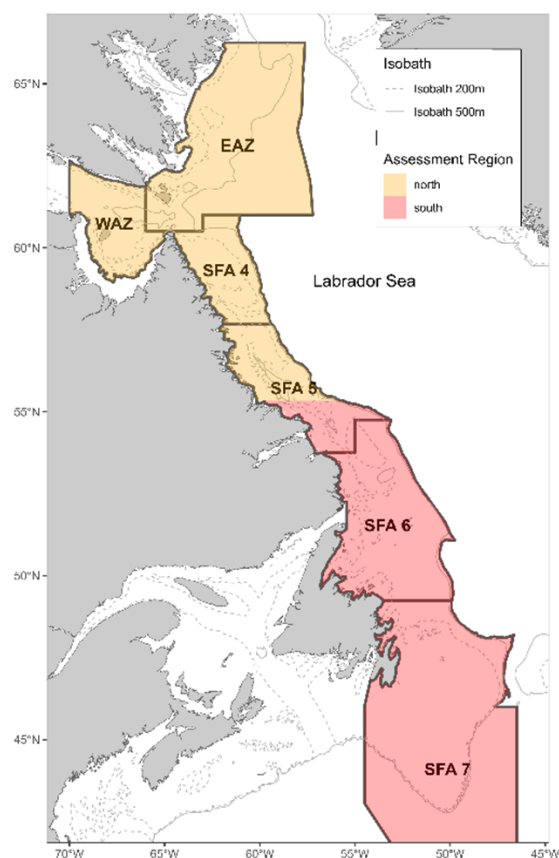


Figure 1. Map showing six current shrimp fishing areas (SFAs) (Eastern Assessment Zone [EAZ], Western Assessment Zone [WAZ], SFAs 4–7) and two new stock assessment regions (north and south) used in the assessment framework.

CONTEXT

It is recognized that Northern Shrimp (*Pandalus borealis*) are distributed broadly over the Northwest Atlantic Ocean, including Shrimp Fishing Areas (SFAs) 4–7, Eastern Assessment

Zone (EAZ) and Western Assessment Zone (WAZ), and that these areas are connected through larval dispersal. For each SFA and assessment zone, stock advice has been based on qualitative evaluations of biomass indices in relation to historical levels and provided in the context of the Precautionary Approach (PA) Framework. However, the biological population is recognized to be distributed over a larger region than the management scale. A population model is needed to align the assessment with the biological population and incorporate environmental and ecosystem understanding into the assessment. Development of a population assessment model for Northern Shrimp facilitates quantitative risk-based science advice, allowing fisheries managers to consider projected changes in stock abundance and yield under alternative management measures considered in the decision-making process. A population assessment model and revised limit reference points (LRPs) also inform future work to update the PA Frameworks in place for Northern Shrimp in SFAs 4–7, EAZ, and WAZ, including harvest decision rules and upper stock reference points (USRs).

For this reason, a multi-regional (Arctic and Newfoundland & Labrador regions) PA Framework meeting was required to peer-review a population model for Northern Shrimp, incorporating information from the species' broader geographic range within current management areas of the EAZ, WAZ, and SFAs 4–7.

This Science Advisory Report is from the multi-regional peer review of December 9–13, 2024, on the Development of a Precautionary Approach Framework for Northern Shrimp (*Pandalus borealis*) in Shrimp Fishing Areas 4–7, Eastern Assessment Zone, and Western Assessment Zone. Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada \(DFO\) Science Advisory Schedule](#) as they become available.

SUMMARY

- A new understanding of Northern Shrimp population structure, based upon their distribution, dispersal, and life history traits, was adopted. Therefore, the spatial scale of assessment for Northern Shrimp has changed from six to two stock assessment regions (SAR) - North (NSAR) and South (SSAR) - divided by the boundary between Northwest Atlantic Fisheries Organization (NAFO) Divisions 2H and 2J.
- A Bayesian size-structured stock assessment modeling framework was adopted that incorporates fishery and biomass indices from spatiotemporal modeling and size composition to estimate trends in Northern Shrimp biomass, recruitment, natural mortality rates, and exploitation rates for each stock assessment region.
- Model results highlight groundfish predation as an important driver of Northern Shrimp natural mortality in the SSAR, but the role of predation as a driver of population dynamics in the NSAR is unclear. Predation effects are currently represented in the model via time-varying natural mortality.
- A biomass at maximum sustainable yield (B_{msy}) proxy value for each stock assessment region was calculated as 40% of unfished biomass (i.e., $B_{msy-proxy} = B_0 \times 0.4$).
- A Limit Reference Point (LRP) for each stock assessment region was adopted as $0.5 \times B_{msy-proxy}$.
- An Upper Stock Reference point (USR) of 80% of the $B_{msy-proxy}$ was recommended for each stock assessment region.
- Reference point calculations reflect estimated natural mortality and sex-transition rates from the most recent eight years (i.e., approximately one Northern Shrimp generation).

INTRODUCTION

Northern Shrimp (*Pandalus borealis*) are distributed broadly over the Northwest Atlantic Ocean, including Shrimp Fishing Areas (SFAs; Figure 1) 4–7, the Eastern Assessment Zone (EAZ) and the Western Assessment Zone (WAZ), and these areas are connected through larval dispersal. For each SFA and assessment zone, stock advice has historically been based on qualitative evaluations of biomass indices in relation to historic levels and provided in the context of the Precautionary Approach (PA) Framework (DFO 2024a, 2024b, 2024c, NAFO 2024). However, the biological population is recognized to be larger than the management scale (Baker et al. 2025). To align the assessment with the biological population and facilitate incorporation of environmental and ecosystem variables into the assessment, a population model is needed. Development of a stock assessment model for Northern Shrimp will facilitate provision of risk-based science advice, allowing fisheries managers to consider projected changes in stock abundance and the potential impacts of various management measures in the decision-making process.

For this reason, a multi-regional (DFO's Arctic and Newfoundland & Labrador Regions) PA Framework meeting was held to peer-review a population model for Northern Shrimp that encompasses the current management areas of the EAZ, WAZ, and SFAs 4–7, and incorporates information from the species' broader geographic range.

ANALYSIS

New stock structure

Northern Shrimp has been managed as a series of separate stocks with the general assumption that each stock is supported by local recruitment with an unknown level of connectivity between areas. The magnitude of movement or connectivity between areas was unquantified, but recognized as a significant source of uncertainty in stock assessments (e.g., DFO 2024a). Misalignment between the biological population and assessment and management processes creates unquantified uncertainty which increases the risk associated with management decisions.

To address this ongoing source of uncertainty, spatiotemporal models were used to identify patterns in stock structure, specifically patterns in population density, sex ratio, and female length (Baker et al. 2025). These results were combined with recent genomic and larval dispersal data to quantify Northern Shrimp population structure across SFAs 4–7, the EAZ and the WAZ. Two data clusters were identified throughout the time series, which separated Northern Shrimp into North and South stock assessment areas (NSAR and SSAR). The results were presented as a foundation for developing a new Northern Shrimp stock assessment framework for two stock assessment regions (NSAR and SSAR) to replace the current matrix of six assessment areas (SFAs 4–7, the EAZ and the WAZ). The two regions are divided by the line located at the boundary between Northwest Atlantic Fisheries Organization (NAFO) Divisions 2H and 2J.

Ecosystem Information

Northern Shrimp is a forage species that is consumed by Atlantic Cod (*Gadus morhua*), Greenland Halibut (*Reinhardtius hippoglossoides*), redfish (*Sebastes* spp.), and other fishes, birds, and marine mammals. Dramatic changes (regime shifts) in marine ecosystems and communities (Koen-Alonso and Cuff 2018) have altered predator-prey dynamics, with the Newfoundland and Labrador marine community changing from a groundfish-dominated

community to a shellfish-dominated community in the 1990s. Ecosystem productivity has also changed over time; the Northern Shrimp population, particularly in the SSAR, has recently been transitioning to having lower recruitment and/or higher mortality in response to changes in the ecosystem.

To incorporate the effects of predation into Northern Shrimp stock assessments, diet data from predators caught during DFO research vessel surveys, including Atlantic Cod and Greenland Halibut, were examined. Atlantic Cod and Greenland Halibut diet appeared to reliably track Northern Shrimp biomass, with Atlantic Cod showing a better fit.

New model

A new population model for Northern Shrimp was reviewed. The new population model incorporated information from the species' broader geographic range, adopting the NSAR and SSAR identified through recent spatiotemporal and genomic analyses (Baker et al. 2025) in place of the six current assessment areas (SFAs 4–7, EAZ, and WAZ). A size-structured population model was developed using the Spatially Integrated Statistical Catch at Length/Size (SISCALS) model. SISCALS computes growth, survival, and sex transition and other characteristics on a quarterly time step (i.e., four times per year). The effect of incorporating quarterly or annual sex transitions was explored but there was little difference in results between the two model configurations; therefore, sex transition only occurred once each year in the 4th quarter in the final model. Recruitment also occurred in a single quarter each year. Considering diet analysis results, predation effects were incorporated into the model by adding time-varying natural mortality.

The stock assessment model was designed to:

1. Estimate biomass, fishing mortality, natural mortality, growth, and recruitment for NSAR and SSAR, subject to the assumed structure for population dynamics and observation models;
2. Derive model-based reference points from alternative spawning potential ratio (SPR) options;
3. Establish Bayesian posterior probability distributions of current stock status with respect to SPR reference points;
4. Explore possible ecosystem drivers (e.g., predation, growth) of changes in productivity;
5. Establish a framework for testing harvest strategies and decision rules.

The model review included discussions of the relationship between model estimated biomass and biomass indices from surveys, shrimp growth, natural mortality, recruitment, larval dispersal, fishery-derived catch-per-unit-effort, and the male to female sex transition. Examining the model goodness of fit results, SISCALS successfully captured large-scale variations in stock biomass, particularly in the SSAR. Posterior plots of model parameters showed good model performance. The Atlantic Cod diet index was compared to model outcomes; the results overlapped fairly well, with evidence of a time lag in the trend residuals.

The SISCALS model estimated a high survey catchability in the NSAR, meaning that the spatiotemporal model survey index is potentially a positively biased estimate of shrimp abundance. This raised some concerns, as biased survey catchability could affect Science advice regarding harvest levels. After discussion, the conclusion was that the model interprets the trend in biomass in response to the catch and that catchability just scales the survey index to the underlying model biomass in order to compute the likelihood. The catch and survey trend, therefore, determine the productivity of the stock, not catchability. Therefore, overestimating

catchability would not affect the estimate of productivity. Nevertheless, there was also consensus to investigate the cause of the high catchability estimates as part of future research.

The model results were used to assess stock trends in each stock assessment region. Northern Shrimp biomass in the NSAR has been declining, the exploitation rate has been increasing, and fewer shrimp have been surviving to transition into females, which has reduced the spawning stock biomass. Biomass has also declined in the SSAR with a higher exploitation rate, low recent recruitment, and an increasing trend in natural mortality (although stable recently). In the SSAR, natural mortality was highly correlated with Atlantic Cod and redfish separately modelled biomass.

Reference points

Spawning Potential Ratio (SPR) was used to establish a B_{msy} -proxy and PA Framework reference points. Spawning Potential Ratio (SPR) represents the fraction of unfished spawning stock biomass (SSB) that is assumed to coincide with B_{msy} . A B_{msy} -proxy value for each SAR was calculated as 40% of unfished biomass (i.e., $B_{msy}\text{-proxy} = 0.4B_0$). A LRP for each stock assessment region was adopted as $0.5B_{msy}\text{-proxy}$; in determining an appropriate level for the LRP there was notable consideration of the biological capacity for Northern Shrimp population growth, tempered by the importance of Northern Shrimp as a forage species that directly supports key predators (i.e., Atlantic Cod, Greenland Halibut, redfish, marine mammals, seabirds) and is important for overall ecosystem health. An USR point of 80% of the B_{msy} -proxy was recommended for each SAR. Reference point calculations reflect estimated natural mortality and sex-transition rates from the most recent eight years (Expected to be approximately one Northern Shrimp generation).

Sources of Uncertainty

- Immigration of recruits from areas adjacent to the NSAR (e.g., SFAs 0 and 1, inshore waters within the Nunavut Settlement Area, West Greenland). Inclusion of “drift” in the model considers movement of shrimp from the NSAR to the SSAR but presently there is no direct inclusion of external inputs to the NSAR.
- Length frequencies are not standardized via the same spatiotemporal model as survey biomass indices.
- Predation by Atlantic Cod, Greenland Halibut, and redfish was considered during model development but ultimately there was concern that inclusion of predation requires a better understanding of the form of the relationship between predation and mortality (i.e., linear or functional response). The effect of predation on mortality needs to be further examined and should expand to include consideration of predation by marine mammals, seabirds and other fish species (e.g., grenadiers).
- Shrimp growth and mortality rates in the NSAR.
- Need to determine at what population level serious harm occurs to the stock. Data at present do not allow an analytical determination. This information is needed to develop a more informed LRP.

CONCLUSION

- A new understanding of Northern Shrimp population structure, based upon their distribution, dispersal, and life history traits, was adopted. Therefore, the spatial scale of assessment for

Northern Shrimp has changed from six to two stock assessment regions – NSAR and SSAR - divided by the boundary between NAFO Divisions 2H and 2J.

- A Bayesian size-structured stock assessment modeling framework was adopted that incorporates fishery and biomass indices from spatiotemporal modeling and size composition to estimate trends in Northern Shrimp biomass, recruitment, natural mortality rates, and exploitation rates for each SAR.
- Model results highlight groundfish predation as an important driver of Northern Shrimp natural mortality in the SSAR, but the role of predation as a driver of population dynamics in the NSAR is unclear. Predation effects are currently represented in the model via time-varying natural mortality.
- A B_{msy} -proxy value for each stock assessment region was calculated as 40% of unfished biomass (i.e., $B_{msy}\text{-proxy} = 0.4B_0$).
- A Limit Reference Point (LRP) for each stock assessment region was adopted as $0.5B_{msy}\text{-proxy}$.
- An Upper Stock Reference point (USR) of 80% of the $B_{msy}\text{-proxy}$ was recommended for each stock assessment region.
- Reference point calculations reflect estimated natural mortality and sex-transition rates from the most recent eight years (i.e., approximately one Northern Shrimp generation).

Research Recommendations

- Standardize survey length-composition data using a spatiotemporal model to reduce potential for natural mortality and catchability bias.
- Further analysis should be done to understand the potential bias caused by partial survey coverage and explore potential “fixes” to address any historical periods with low survey coverage. This includes impacts of partial survey coverage on estimated catchability and sex-transition and growth model bias due to morphological differences for EAZ shrimp.
- Explore alternative sampling design for biomass and length composition data from both fisheries and surveys to optimize information content while minimizing bias.
- Investigate relationships between shrimp population dynamics (e.g., mortality, growth, productivity, density dependence) and environmental and ecological factors, including sea ice cover, ocean currents, predation, and larval transport with consideration given to differences between the two stock assessment regions.
- Improve understanding of the effect of predation on shrimp population dynamics and the integration of predation into future versions of SISCALS, both in terms of natural mortality to inform the model, but also on predators’ dependence on shrimp to inform LRP revisions. Analyses may include the integration of additional data using predator stomach contents and consideration of predation by marine mammals, seabirds and other fish species (e.g., grenadiers).

LIST OF MEETING PARTICIPANTS

Name	Affiliation
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Derek Butler	Nunavut Fisheries Association
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Divya Varkey	DFO, Science, Newfoundland and Labrador Region
Elaine Hynick	DFO, Science, Newfoundland and Labrador Region
Erika Parrill	DFO, Science, Newfoundland and Labrador Region
Erin Carruthers	Fish, Food, and Allied Workers Union
Gemma Rayner	Oceans North
Hannah Munro	DFO, Science, Newfoundland and Labrador Region
Joclyn Paulic	DFO, Science, Arctic Region
Jon Fisher	Marine Institute
Jorge Negrin Dastis	DFO, Resource Management, National Capital Region
Julia Pantin	DFO, Science, Newfoundland and Labrador Region
Kaitlyn Charmley	DFO, Science, Newfoundland and Labrador Region
Karen Dwyer	DFO, Science, Newfoundland and Labrador Region
Kathleen Ryan	DFO, Science, Newfoundland and Labrador Region
Kevin Hedges (Co-Chair)	DFO, Science, Arctic Region
Krista Baker	DFO, Science, Newfoundland and Labrador Region
Krista Kenyon (Rapporteur)	DFO, Science, Arctic Region
Mariano Koen-Alonso	DFO, Science, Newfoundland and Labrador Region
Mark Simpson	DFO, Science, Newfoundland and Labrador Region
Nicholas Duprey	DFO, Science, National Capital Region
Nicolas Le Corre	DFO, Science, Newfoundland and Labrador Region
Olga Kiseliova	DFO, Resource Management, National Capital Region
Robert Deering	DFO, Science, Newfoundland and Labrador Region
Sam Johnson	Landmark Fisheries Research
Samantha Coombs	Government of Newfoundland and Labrador
Sean Cox	Landmark Fisheries Research
Susan Thompson	DFO, Science, National Capital Region
Todd Broomfield	Nunatsiavut Government
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Wojciech Walkusz	DFO, Science, Arctic Region
Xinhua Zhu	DFO, Science, Arctic Region

Name	Affiliation
Zoya Martin	Government of Nunavut

SOURCES OF INFORMATION

- Baker, K.D., Le Corre, N., Bourret, A., Parent, G., Fulton, S., Duprey, N.M.T., and Cox, S. 2025. [Spatial stock structure of northern shrimp, *Pandalus borealis* Krøyer, 1838 \(Decapoda: Caridea: Pandalidae\) in Canada's Northwest Atlantic](#). J. Crustac. Biol. 45(2).
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NORTHERN SHRIMP (*PANDALUS BOREALIS*) IN THE NORTH AND SOUTH STOCK ASSESSMENT REGIONS - REVIEW OF MANAGEMENT STRATEGY EVALUATION (MSE) OPERATING MODEL AND CANDIDATE MANAGEMENT PROCEDURES



Northern Shrimp (*Pandalus borealis*) Photo: Fisheries and Oceans Canada.

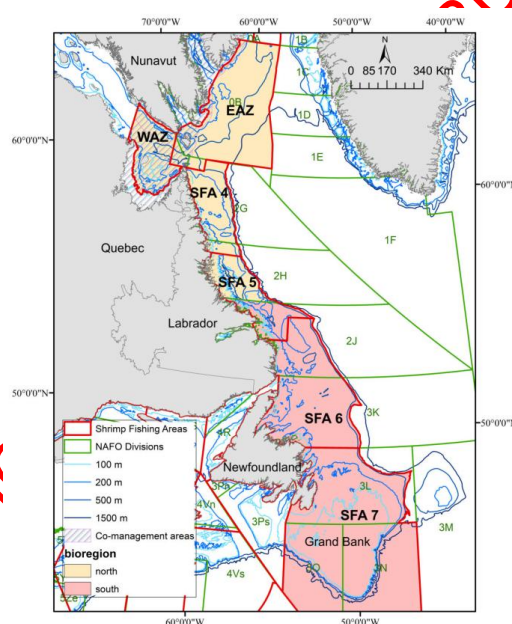


Figure 1. The spatial management areas for Canadian Northern Shrimp, including North (yellow) and South (red) Stock Assessment Regions.

CONTEXT

This Science Advisory Report is from the national peer review of December 2-5, 2025 on the Northern Shrimp - Review of Management Strategy Evaluation (MSE) Operating Model and Candidate Management Procedures. Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada \(DFO\) Science Advisory Schedule](#) as they become available.

SUMMARY

- The spatially integrated statistical catch-at-length / size (SISCALS) assessment model, developed as part of the [December 2024 Northern Shrimp assessment framework](#), was adopted as the foundation for the operating models used in the Management Strategy Evaluation (MSE).

- For the North Stock Assessment Region, length composition data used in the operating models only includes years 2007-2024. Years prior to 2007 were removed to address the lack of Eastern Assessment Zone survey coverage in these early years.
- Operating models were developed to represent plausible stock dynamics and incorporate uncertainty in recruitment, growth, natural mortality, maturity, and survey indices.
- Two distinct recruitment regimes were identified during the 1996-2019 period and were used to form the two operating model recruitment scenarios used in this MSE:
 - A short time-series of recent low recruitments (the same period used in the [March 2025 assessment projections](#)); and,
 - The full time-series that had higher average recruitment with greater variability.
- MSE performance statistics were calculated using a weighted combination of results from each of the two operating models. In the North Stock Assessment Region, operating models were similar and therefore equally weighted (50% each). In the South Stock Assessment Region, the recent low recruitment regime was considered more plausible in the near-term and received a higher weighting (90%) than the full time-series (10%).
- Validation tests confirmed that the 28 harvest decision rules (HDRs) specified based on combinations of harvest control rule types, exploitation rate values, HDR phase-in periods, and maximum allowable Total Allowable Catch changes produced outputs as intended.
- All HDRs are constructed to be run annually using the previous year's Total Allowable Catch, fishable biomass index and spawning stock biomass index. At these annual time-steps, exceptional circumstances (to be developed) would also be examined.
- Twelve (12) performance metrics were used that fall into 3 categories (conservation, yield and stability). Metrics were calculated and applied across all HDRs; trade-off plots demonstrate conservation–yield–stability relationships, indicating that performance metrics are appropriate indicators of performance in relation to objectives.
- Operating model structure and performance metrics were reviewed to support the MSE process; the performance of HDRs for meeting management objectives was not reviewed. Nevertheless, the example HDRs displayed a wide range of performance across conservation, yield and stability metrics as well as stock assessment regions.
- Other uncertainties were identified that should be explored in the future for incorporation in the operating models. It is recommended that the expected performance of any adopted HDR be reviewed periodically (e.g., 3-4 years) as new operating models and performance measures arise unless a formal review is otherwise triggered by exceptional circumstances.

INTRODUCTION (OR BACKGROUND)

The provision of science advice for Northern Shrimp (*Pandalus borealis*) changed fundamentally following the adoption of a statistical model-based assessment framework for the species in December 2024 and a revised population structure from six stock assessment areas (Western Assessment Zone (WAZ), Eastern Assessment Zone (EAZ), Shrimp Fishing Areas (SFAs) 4-6, NAFO Divisions 3LNO) to two stock assessment regions (North Stock Assessment Region (NSAR) and South Stock Assessment Regions (SSAR)). Historically, science advice was provided at the same spatial scale as the management of the fishery; however, with the revised population structure, science advice is now provided for two stocks (NSAR and SSAR) that span six management areas.

Earlier in 2024, a two-step harvest decision rule (2SHDR) using survey data specific to each management area was adopted to calculate the total allowable catch (TAC) in the WAZ, EAZ and SFAs 4-6. The potential effectiveness of the 2SHDR was not tested in simulations because a model-based assessment framework did not yet exist for Northern Shrimp.

The new framework adopted in December 2024 uses a specially designed model for Northern Shrimp called the spatially integrated statistical catch-at-length / size (SISCALS) model. The framework provides model-based estimates of biomass, productivity and stock status with respect to biological reference points for the NSAR and SSAR. Further, alternative formulations of SISCALS are the basis of the operating model(s) used in simulation testing the potential effectiveness of candidate harvest decision rules (HDRs) within the management strategy evaluation (MSE) process for Northern Shrimp.

A Northern Shrimp Advisory Committee MSE Working Group comprised of DFO fishery managers, Northern Shrimp harvesters, provincial and co-management partner representatives, and scientists developed the context, preliminary objectives, and candidate HDRs of the MSE. The science advice herein supports this work by:

1. Ensuring that the operating model(s) used in the MSE align(s) with the modeling framework for Northern Shrimp that was adopted in December 2024 and used in the March 2025 assessment (i.e. the spatially integrated statistical catch-at-length / size (SISCALS) model);
2. Reviewing any changes or deviations in the framework adopted in December 2024 and providing a rationale for these changes;
3. Reviewing all candidate management procedures to ensure their code/design aligns with their intended function in the real world; and,
4. Reviewing the performance metrics calculations to ensure they are the most appropriate calculations to align with the MSE's objectives.

MSE Objectives

Seven (7) preliminary MSE objectives (3 primary and 4 secondary) are under consideration by the MSE Working Group.

ANALYSIS

Operating models

The statistical model used in the Northern Shrimp stock assessment framework (i.e., SISCALS, adopted in December 2024 and used in the March 2025 assessment) was incorporated as the basis for developing the operating model(s) for closed-loop simulations related to the MSE process.

Changes in data or structure from March 2025 assessment

The operating model(s)'s historical period (conditioning) was developed using an updated dataset compared to that used in the March 2025 assessment (Le Corre et al. *in prep.*¹). This updated dataset excludes NSAR shrimp length composition data before 2007, whereas the dataset used in March 2025 covered 1996-1999 and 2005-2024. This change is viewed as an improvement to the model and was made to address a lack of sampling across the full range of Northern Shrimp size classes before 2007 in the NSAR. In particular, before 2007 there were no usable survey data available in the EAZ (Figure 2), which created a potential bias in shrimp size and mortality because Northern Shrimp in the EAZ are larger than shrimp in the WAZ and SFA 4. This bias (*i.e.*, using the pre-2007 data, without EAZ representation) could skew the model(s)'s estimates of shrimp growth and mortality. While the data from 2007 onwards also has spatial gaps, those gaps were viewed as less problematic (*e.g.*, there is some missing survey coverage in the WAZ, but Northern Shrimp sizes in the WAZ span those observed in SFA 4 and the EAZ, thus this gap is unlikely to introduce bias). In the future, it may be possible to re-incorporate pre-2007 data for the NSAR within a standardization model to address incomplete spatial and temporal coverage across years. However, a standardization model for length composition data was not available at the time of this meeting.

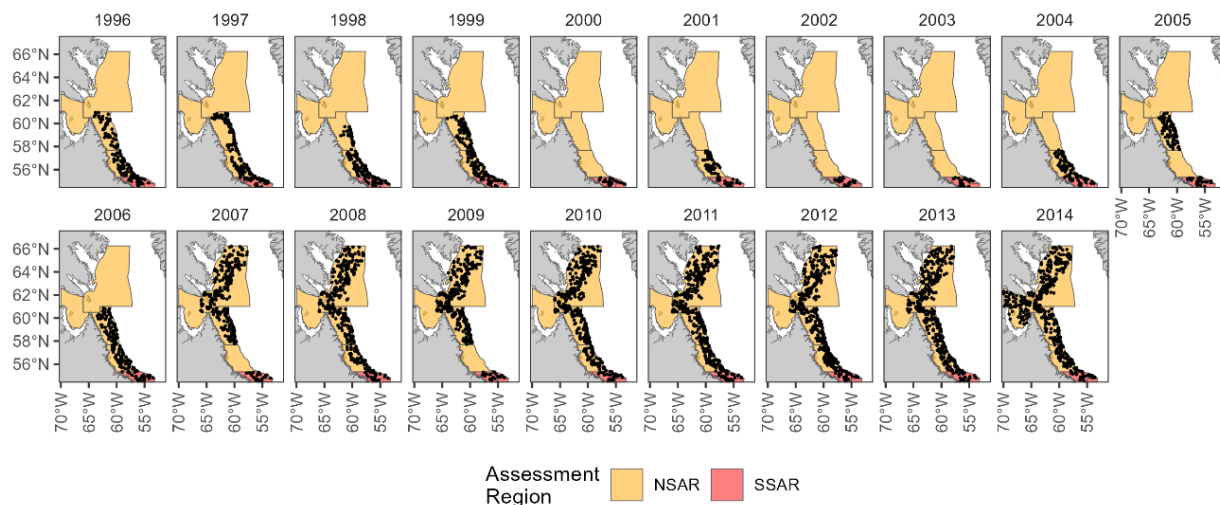


Figure 2. Survey coverage in the NSAR from 1996 to 2014, combining DFO and Northern Shrimp Research Foundation (NSRF) surveys, with each survey set represented by a black dot. In later years (2015 to 2024), survey coverage was complete, similar to 2014.

Operating Model Scenarios

Operating model (OM) scenarios in an MSE context represent plausible hypotheses about fishery and stock dynamics used to test HDRs. In general, OM's are designed to represent both

¹ Le Corre N., Baker K.D., Coffey W., Enright D., Walkusz W., Munro H., Belanger D., Coyne J., Koen-Alonso M., Malainy C., Sullivan D., and Atchison S. (*in preparation*). Assessment of Northern Shrimp (*Pandalus borealis*) in North and South Stock Assessment Regions in 2024. DFO Can. Sci. Advis. Sec. Res. Doc. 2026/nnn. iv + 81 p.

parameter uncertainty and structural uncertainty within stock assessments and management procedure simulations. Parameter uncertainty arises because the true values of model parameters are not known exactly and may include uncertainty in growth rates, natural mortality, maturity schedules, survey catchability, and stock–recruitment parameters such as unfished spawning biomass or spawner productivity in the stock–recruitment relationships. Structural uncertainty, by contrast, arises from uncertainty about the underlying processes and model assumptions used to represent the system. This may include uncertainty in stock–recruitment functional form (e.g., Beverton–Holt versus Ricker), spatial structure of the stock and connectivity between different components of the stock, time-varying productivity, or conflicting data sources.

For Northern Shrimp, future recruitment dynamics currently represent the primary structural uncertainty. Two alternative operating models are therefore used to represent plausible future productivity scenarios. Both are based on Beverton–Holt stock–recruitment relationships fitted to different periods of estimated recruitment:

1. A short time series (2009-2019), consistent with the recruitment regime underlying the March 2025 assessment projections; and,
2. The full estimated recruitment time series (1996-2019).

These alternative OMs are defined as follows:

1. BH-Long (long time-series; 1996-2019): SRR estimated from spawning biomass and recruitment estimates over the full assessment period (excluding 2020-2024). Captures the average productivity over multiple ecosystem states (*i.e.*, higher and lower productivity periods).
2. BH-Short (short time-series; 2009-2019): SRR estimated over the most recent 10-year period (excluding 2020-2024). Captures recent lower productivity, particularly for the SSAR.

The BH-Long and BH-Short scenarios bracket the range of productivity observed during the assessment period, but both include overly precise steepness estimates because the post-fitting approach ignores uncertainty in spawning biomass and recruitment estimates. This issue may be addressed in future assessments and OMs.

Note that recruitment estimates for 2020-2024 are not estimable from the data, so these are simulated from the BH-Short model (DFO 2025, *Le Corre et al., in prep.*).

Operating model weighting

The two operating model recruitment scenarios defined above aimed to represent possible future productivity states for Northern Shrimp. In the SSAR, the BH-Long and BH-Short scenarios implied very different recruitment regimes, mostly due to the change in productivity regime observed within the BH-Long period. The environment for shrimp is ever changing, however predation and the ecosystem are continuing to change and have clear directional movements that are thought to be continuing. Both operating models were retained but were assigned plausibility weights based on expert knowledge. In the SSAR, results from the two operating model scenarios were weighted at 90% for BH-Short and 10% for BH-Long when combining operating model results to generate the set of performance metrics for each HDR.

In the NSAR, recruitment productivity was mostly comparable under the BH-Long and BH-Short scenarios, therefore the contributions of the two operating models were given equal weighting (50%/50% weighting).

Performance Metrics

Performance metrics are statistics that summarize the expected behaviour of a candidate HDR over a specified period of time. They allow different candidate HDRs to be compared and to ascertain how well a candidate HDR aligns with the MSE's objectives. Performance metrics are particularly important in understanding the trade-offs between different dimensions of performance such as the trade-off between higher potential yield and lower probability of avoiding the limit reference point (LRP). Table 1 lists the performance metrics reviewed during the meeting along with their definition and how each metric is calculated.

Table 1. Performance metrics used in the Northern Shrimp MSE with definitions and more detailed information on how the statistics are calculated.

Performance Metrics	Objective Category	Definition	How it is Calculated
pLRP30	Conservation	Probability that spawning biomass remains above limit reference point over 30-year projection period.	- Count the number of years the spawning biomass is above the LRP over each 30-year projection. - Sum these counts across the 200 replicates. - pLRP30 is the sum from (b) divided by 6,000 (the total number of years across the 200 replicates; 30 years multiplied by 200 replicates = 6,000).
pLRP10	Conservation	Probability that spawning biomass remains above limit reference point over first 10 projection years.	- Count the number of years the spawning biomass is above the LRP over the first 10 years of each projection. - Sum these counts across the 200 replicates. - pLRP10 is the sum from (b) divided by 2,000 (the total number of years across the 200 replicates; 10 years multiplied by 200 replicates = 2,000).
pUSR30	Conservation	Probability that spawning biomass remains above upper stock reference over 30-year projection period.	- Count the number of years the spawning biomass is above the USR over each 30-year projection. - Sum these counts across the 200 replicates.

Performance Metrics	Objective Category	Definition	How it is Calculated
			c. pUSR30 is the sum from (b) divided by 6,000 (the total number of years across the 200 replicates; 30 years multiplied by 200 replicates = 6,000).
pUSR10	Conservation	Probability that spawning biomass remains above upper stock reference over first 10 projection years.	a. Count the number of years the spawning biomass is above the USR over the first 10 years of each projection. b. Sum these counts across the 200 replicates. c. pUSR10 is the sum from (b) divided by 2,000 (the total number of years across the 200 replicates; 10 years multiplied by 200 replicates = 2,000).
MAC10	Fishery Yield	Median of the average annual catch over first 10 projection years (short-term yield, kt).	a. Calculate the average annual catch over the first 10 years of the projection for each of the 200 replicates. b. List the 200 values from lowest to highest. c. MAC10 is the median, or number in the middle of the list.
MAC30	Fishery Yield	Median of the average annual catch over final 10 projection years (2045-2054; long-term yield, kt).	a. Calculate the average annual catch over the final 10 years of the projection for each of the 200 replicates. b. List the 200 values from lowest to highest. c. MAC30 is the median, or number in the middle of the list.
AAV10	Catch Stability	Median average annual variation in catch over first 10 projection years.	a. Calculate the absolute annual percentage change in catch for each of the first 10 projection years in a

Performance Metrics	Objective Category	Definition	How it is Calculated
			replicate (<i>i.e.</i>, the percent increase or decrease in catch compared to the previous year). b. Calculate the average of (a). c. List the 200 replicate averages from (b) lowest to highest. d. AAV10 is the median, or number in the middle of the list.
AAV95th	Catch Stability	95th percentile of average annual variation in the first 10 years or 95% of all values are smaller than this. Represents a relatively rare outcome, but indicates the range of possible average annual variations.	a. Calculate the absolute annual percentage change in catch for each of the first 10 projection years in a replicate (<i>i.e.</i>, the percent increase or decrease in catch compared to the previous year). b. Calculate the average of (a). c. List the 200 replicate averages from (b) lowest to highest. d. AAV95th is the 95th percentile of the list from (c) (<i>i.e.</i>, the 190th value).
C5th	Risk of low Catch	5th percentile of annual catches in first 10 projection years (lower bound of short-term yield, kt).	a. List the annual catch (lowest to highest) for all 200 replicates over first 10 projection years (2,000 values). b. C5th is the 5th percentile of the list from (a) (<i>i.e.</i>, the 100th value).

Candidate Management Procedures

Stock Status and Control Points

The assessment framework in December 2024 adopted limit reference points (LRPs) for both the NSAR and SSAR, and upper stock reference points (USR) were also recommended for both regions (DFO 2025). These LRPs and proposed USRs are based on the unfished spawning

biomass (SB) calculated within the stock assessment model (Figure 3A). These biological reference points are specifically used in the Performance Metrics calculations described above (e.g., pLRP and pUSR), and therefore play a role in comparing candidate HDRs. These are also the only reference points used to determine and report on stock status.

Biological reference points (LRPs and USRs) should not be confused with the control points used in candidate HDRs even though they share some similarities. The LRP and USRs are operating model biological reference points derived from SISCALS estimates of unfished spawning biomass and stock productivity. Because these quantities depend on estimated model states and parameters, they are not directly observable. Control points, by contrast, are specified values of the survey spawning biomass index (SB^* ; read “SB-star”), where the “*” denotes that these are actual observable indices used operationally within the HDR.

Within the operating model simulations, TACs in each year are determined by the HDR using simulated spawning biomass indices (SB^*) relative to predefined operational control points. The resulting catches influence future stock dynamics and subsequent SB^* levels, thereby creating the feedback mechanism used to evaluate HDR performance over time. Control points therefore define the SB^* thresholds where changes occur in the harvest control rule slope (Figure 3B).

Biomass indices for the fishable (FB^*) and spawning (SB^*) stocks are derived from the spatio-temporal model of annual survey data (DFO 2025) and are the main inputs to candidate HDRs.

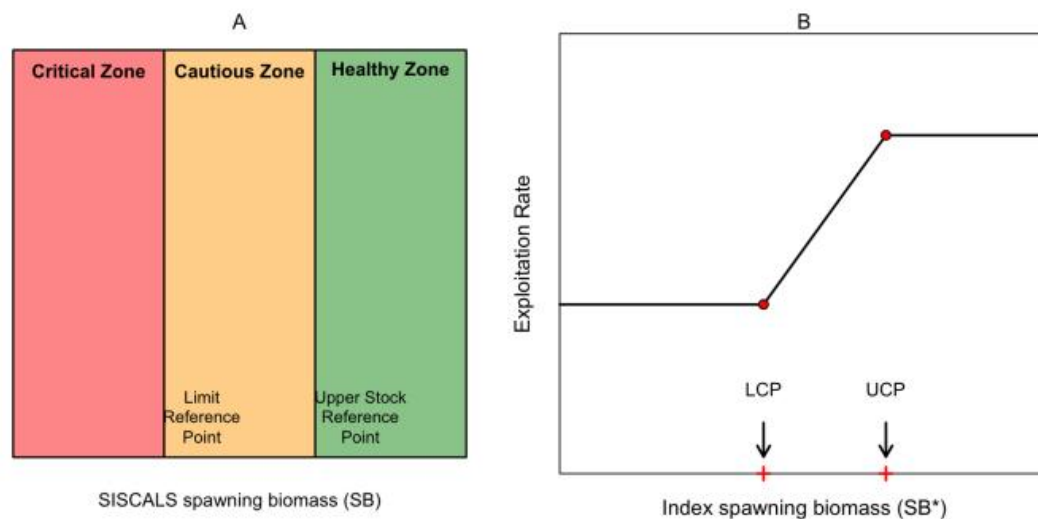


Figure 3. (A) Stock status zones (Critical, Cautious, and Healthy Zones) defined by the Limit Reference Point (LRP) and Upper Stock Reference (USR). These status zones are determined using the spawning biomass (SB) derived by the SISCALS assessment model (referred to as absolute values). (B) An example management procedure (HDR) showing the lower control point (LCP) and upper control point (UCP), which define thresholds where the HDR slope changes. The LCP and UCP are calculated based on the spawning biomass index (SB^*) derived from survey indices (referred to as relative indices).

Candidate Management Procedures

Three general forms of HDR were tested based on variations in control points and exploitation rates (Figure 3B). All three forms include two initial stages:

1. The HDR determines the exploitation rate based on SB^* (reminder: SB^* and FB^* are indices derived from the spatio-temporal modeling of survey data) relative to the lower and upper control points; and,

2. The resulting exploitation rate is multiplied by the fishable biomass index derived from survey indices (FB^*) to produce an initial catch limit or total allowable catch (TAC).

The “default DFO HDR” (also labelled defHDR in tables and figures) has a constant exploitation rate when above the upper control point. Below the upper control point, the exploitation rate linearly decreases with SB^* until reaching the lower control point, at which the exploitation rate is 0%. No exploitation occurs when SB^* is below the lower control point (Figure 4: top row).

The “base HDR” (labelled baseHDR in tables and figures) has a constant exploitation rate when above the upper control point. Below the upper control point, the exploitation rate linearly decreases with SB^* until reaching the lower control point, at which exploitation rate is 50% of the initial exploitation rate used when above the upper control point. Below the lower control point, the exploitation rate is 50% of the initial exploitation rate (Figure 4: middle row).

The “Half Leaf HDR” (labelled halfLeafLRP in tables and figures), which looks similar to half of a leaf torn in two along its midline, implements the half leaf design below the lower control point (Figure 4: bottom row). This HDR is implemented the same way as the baseHDR when SB^* is above the lower control point. When the SB^* is below the lower control point, and trending downwards, exploitation rates decline rapidly to zero by following the curve of the leaf. When the SB^* is trending upwards exploitation rates increase linearly until the lower control point is reached (Figure 4: bottom row).

Several adjustment mechanisms were layered on top of the baseHDR to control variability in TACs produced by the HDRs. The “2-stage HDR” (2SHDR) mimics the currently adopted HDR used in EAZ, WAZ, and SFAs 4-6. After generating an initial catch limit using the baseHDR the 2SHDR component smooths inter-annual TAC variation based on the direction of the fishable biomass index trend. When fishable biomass is increasing, the TAC is the maximum of (a) the average of the previous TAC and current initial catch limit (50% rule) or (b) the previous year’s initial catch limit (finish rule). When biomass is decreasing, the TAC is the minimum of these values. This provides balance between the TAC responding to short-term survey index trends and stable TACs.

Another adjustment to the HDRs, added to reduce the extent of inter-annual changes to the TACs, applies a flat 25% maximum inter-annual change in the TAC. This constrains year-to-year variation. This “25% maximum change in TAC” was an added option to the 2SHDR procedure.

A third type of adjustment included “phase-in periods” to provide gradual transitions from the current TAC to TACs determined solely by the HDR. Both three-year (3YrPhz) and four-year phase-in (4YrPhz) periods were tested. These are implemented by computing the final TAC as a weighted average of the 2024 TAC and the one derived from the HDR in that year. By the third year (or fourth year) the TAC is solely based on that calculated by the HDR. These phase-ins were added options to the 2SHDR procedure. The following are the weightings used for each phase-in length:

- 3YrPhz
 - Year 1 TAC = 66.7% 2024 TAC + 33.3% HDR TAC calculation
 - Year 2 TAC = 33.3% 2024 TAC + 66.7% HDR TAC calculation
 - Year 3 TAC = 0% 2024 TAC + 100% HDR TAC calculation
- 4YrPhz
 - Year 1 TAC = 75% 2024 TAC + 25% HDR TAC calculation
 - Year 2 TAC = 50% 2024 TAC + 50% HDR TAC calculation

- Year 3 TAC = 25% 2024 TAC + 75% HDR TAC calculation
- Year 4 TAC = 0% 2024 TAC + 100% HDR TAC calculation

All of these HDRs were reviewed and tested within the MS3 simulation package and via an independent MSE Excel spreadsheet to ensure that they were coded correctly, their mathematical formulae aligned with how they were being described, and that they were behaving as expected and described. A review of their particular performance with respect to fishery objectives was not within the terms of reference for this process.

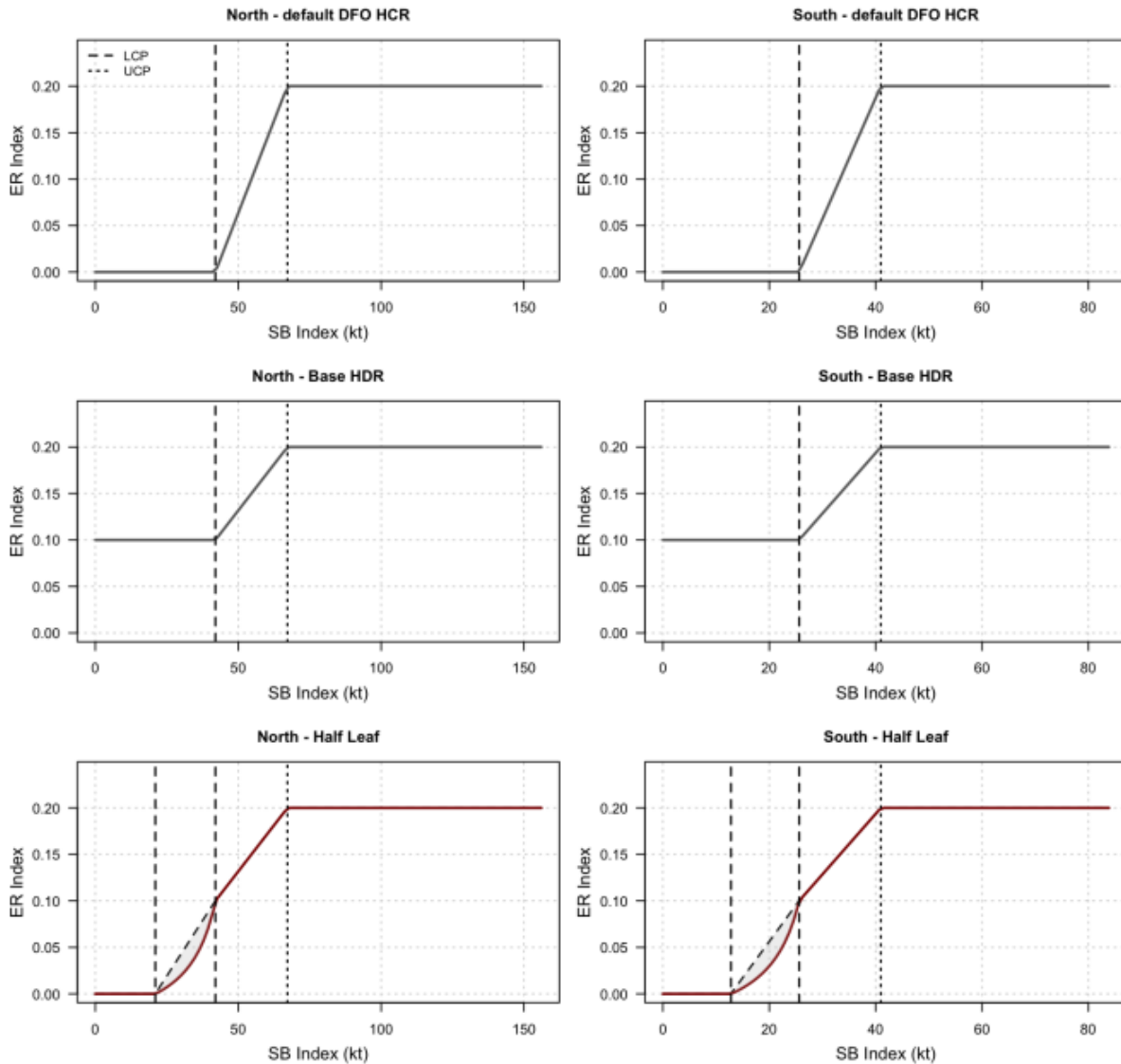


Figure 4. Harvest decision rules (HDRs) for Northern Shrimp management procedures showing the relationship between spawning biomass index (SB^* , x-axis) and exploitation rates (y-axis; above the upper control point exploitation rates between 10% and 25% were tested; 20% is shown for illustrative purposes only). Columns show North SAR (left) and South SAR (right). Rows show three HDR types: Default DFO HDR (top), Base HDR (middle), and Half-Leaf HDR (bottom). Vertical reference lines indicate control points: dashed line for the lower control point ($LCP = 0.5 \times SB^*_{Maximum Sustainable Yield (MSY)}$), dotted line for the upper control point ($UCP = 0.8 \times SB^*_{MSY}$), and lowest dashed line in half-leaf HDR as $0.25 \times SB^*_{MSY}$.

TAC Utilization in the Operating Models versus in Reality

The HDR simulations assume that the full TAC calculated by an HDR is removed each fishing season. This is no different from stock assessment projections where a fixed catch scenario is projected into the future, with each year removing the entire fixed value. It is clear from historical catch records that not all the Northern Shrimp management areas have their full TAC removed each year. While the entire TAC is regularly caught and removed each year in some areas, TACs are underutilized in other areas. Under-utilization arises for various reasons including for example, adverse weather, less favourable catch rates, targeting for quality and/or size, or logistical issues related to trip length and location.

The 5-year average utilization (i.e., proportion of TAC actually caught) rates calculated for each region using reported catch in 2017, 2018, 2019, 2022 and 2023 fishing years (2020 and 2021 were not used due to impacts from COVID-19) were 91% for the NSAR and 95% for the SSAR.

Sources of Uncertainty

Data Inputs in SISCALS

This section outlines key uncertainties associated with the data inputs used in SISCALS, which may in turn affect the operating models (OMs) derived from it. These uncertainties are not directly transferred in MSE outcomes, but may influence some of the inputs used within the MSE framework (e.g., catchability).

- **Survey Length Composition Data:** Survey biomass index data are standardized using spatiotemporal models to account for variability across space and time, but survey length composition data are not. Without standardization, regions not covered by surveys may be underrepresented, which can bias length-based indicators (e.g., size at 50% transition to female, growth estimates). Standardizing survey length composition data could also allow inclusion of pre-2007 observations in the North SAR time series for SISCALS and OM conditioning.
- **Commercial Length Composition Data:** Commercial length data can be biased by differences in fleet behavior, gear type (catchability), and uneven seasonal or spatial coverage, making them less representative of the true population structure. Spatiotemporal standardization of commercial length data would help correct these biases and improve the robustness of length-based indicators used in the stock assessment framework and OMs.
- **Additional Survey Data:**
 - Incorporating other survey data (e.g. European Union survey data covering NAFO Divisions 3LNO outside Canadian waters), which use slightly different protocols and provide limited coverage of the assessment region, could be beneficial. Testing robustness with and without these data would help clarify their potential benefit for improving survey index estimates.
 - The NSAR currently lacks key ecosystem and environmental data, including predation mortality indices, oceanographic information, and pelagic production metrics. These gaps limit the ability to include ecological drivers in assessments and hinder progress toward ecosystem-based fisheries management.

Catchability Parameter for Projections

Uncertainty in survey catchability is taken into account in the HDR projection by sampling from the joint posterior distribution of all estimated parameters from SISCALS. Therefore, although the survey catchability in each region is assumed known and constant for the lower control

point, upper control point, and FB calculations, the operating models simulate a very wide range of alternative values over the 200 simulation replicates. This range of catchability in the posterior samples provides some protection against mis-scaled TACs if true catchability differs from the median estimate. It is possible that survey catchability could vary over time via protocol adjustments or environmental factors but these were not considered in this work. Violation of catchability assumptions primarily affect the absolute scale of operating model biomass and catch projections, which should not affect the relative performance of HDRs against one another – the more important problem would be that performance of all HDRs would be biased with actual risk being more or less than projected depending on the direction of bias. Future MSE iterations could examine catchability in more detail via retrospective analysis and other techniques aimed at evaluating persistent bias in stock assessment model estimates.

Biological and Model Assumptions

Uncertainty also arises from assumptions about biological processes and how they are represented in the model. These include recruitment, growth, sex transition, and natural mortality, all of which are influenced by environmental conditions and biological complexity. Because these factors are difficult to estimate precisely, they introduce variability into HDR projections.

- **Recruitment:**

- **Trans-boundary Larval Connectivity:** Current assessments do not directly account for larval imports from West Greenland stocks, which may affect recruitment. Expanding the SISCALS framework to include Greenland spawning indices or developing a trans-boundary meta-population model would better reflect potential connectivity via larval dispersal patterns. SISCALS estimates annual deviations from the expected recruitment based on SB, which means that imports from West Greenland stocks could already be accounted for in the recruitment estimates; however, the future role of West Greenland stocks is treated as random around a constant average in projections.
- **Stock-Recruitment Relationships:** The SISCALS model used to estimate stock dynamics, catchability, recruitment, natural mortality and other parameters assumes constant average recruitment with annual deviations that are independent over years but correlated between NSAR and SSAR shrimp. This assumption helped make the original estimation more tractable as SISCALS was being developed. However, constant average recruitment is inappropriate for projecting stock dynamics for risk assessment. The stock-recruitment models BH-Long and BH-Short were estimated from SISCALS SB and recruitment estimates to better reflect potential future over-fishing risk. While these recruitment scenarios are sufficient for initial MSE screening, a revised SISCALS model should incorporate a Beverton–Holt stock–recruitment relationship within the model structure to better integrate uncertainty in model parameter estimates, recruitment dynamics, and associated biological reference points.

- **Growth and Transition:** Projected spawning biomass dynamics were sensitive to growth and the length at 50% transition (L50), particularly the latter as it directly affects SB. These are modelled independently in SISCALS, so future research could develop biologically plausible scenarios for projections of size-at-transition and growth parameters that would help explore a broader range of uncertainties and strengthen the science advice derived from HDR simulations.
- **Mortality:** Future natural mortality was simulated using a zero-trend random walk, maintaining the recent average and variability without persistent increases or decreases. This approach reflects the absence of reliable information on future ecosystem-driven

mortality shifts, as well as lack of a direct mechanistic link between ecosystem factors and mortality. Future research could develop methods to link mortality to predation, in particular, since there is a relatively high correlation between some predators on Northern Shrimp mortality in the SSAR.

CONCLUSIONS

Operating models

Two operating models were endorsed for use in this initial phase of the Northern Shrimp MSE; one based on the estimated stock recruitment relationship using the whole data-series (1996-2019) and the other using a shorter time period to estimate the stock recruitment relationship (2009-2019). Based on expert opinion the two operating models in the NSAR are equally weighted when calculating performance metrics because the two scenarios imply similar productivity over time. In the SSAR the operating model using the short time-series was given 90% weighting and the operating model using the whole time-series was given 10% weighting, because of the perception that the more recent recruitment levels were more likely to be persistent in the near term. Performance metrics calculated for each HDR represent the weighted combination of outputs from these two scenarios.

Performance Metrics

All performance metrics computations were reviewed and determined to be 100% accurate and consistent with their descriptions and intended use. A full list of these performance metrics including clear descriptions of what they represent can be found in Table 1.

Management Procedures

The reviews of the HDRs were conducted to ensure that they had been coded correctly, their mathematical formulae aligned with how they were being described, and that they were behaving as expected and described. They were not reviewed to consider how they performed compared to any MSE objectives for conservation, yield nor variability in catch.

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SOURCES OF INFORMATION

DFO. 2025. [Northern Shrimp \(*Pandalus borealis*\) in North and South Stock Assessment Regions in 2024](#). DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2025/042.

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Appendix 4

To apply the harvest decision rule, control points (Lower Control Point and Upper Control Point) are used as proxies for Limit Reference and Upper Stock Reference points (and therefore the Healthy, Cautious and Critical zones). These control points are needed because the full stock assessment that estimates full stock size and status is only conducted every 3 years. Indices of abundance are updated every year and can be compared to the Lower and Upper Control Points. The harvest decision rule's harvest rate, which is used to calculate the initial harvest limit for the North Stock Assessment Region, is reduced linearly as the abundance indices decline below the Upper Control Point until reaching the Lower Control Point. Added to this are rules that reduce the variability in the calculated harvest limits year-to-year. Reduced variability is achieved through three steps: (1) only applying half of the increase/decrease in the harvest limit resulting from an increase/decrease in the index; (2) imposing a maximum 25% year-to-year change in harvest limit; (3) phasing in the harvest limit calculated by the harvest decision rule during the first 4 years of its implementation.

Table 2. Summary of the Harvest Decision Rule for *P. borealis* in the North Stock Assessment Region

Spawning Stock Biomass index	Harvest Decision Rule	
Above the Upper Control Point	The target harvest rate will be 20% of fishable biomass index.	- Pursue 50% of the change between the initial total allowable catch calculation (i.e. applying the target harvest rate) and the previous year total allowable catch. - In subsequent years, either finish the remainder of the total allowable catch change to the previous year's initial total allowable catch calculation, or pursue 50% of the change to the current year's initial total allowable catch calculation. - Consider whether fishable biomass is increasing (select higher total allowable catch) or decreasing (select lower total allowable catch) to guide management action. - Apply the 25% maximum change in Total Allowable Catch - Apply phase-in when setting the Total Allowable Catch for 2026-27, 2027-28, 2028-29, or 2029-30
Between the Upper Control Point and Lower Control Point	- The target harvest rate will be scaled linearly (slope) from 20% of fishable biomass index at the Upper Control Point, to 10% of fishable biomass index at the Lower Control Point. - The maximum harvest rate will be 1.5x target (slope) harvest rate.	
At or below the Lower Control Point	- The maximum harvest rate will be 10% of fishable biomass index. - Apply the 25% maximum change in total allowable catch - Apply phase-in when setting the total allowable catch for 2026-27,	

Spawning Stock Biomass index	Harvest Decision Rule
	2027-28, 2028-29, or 2029-30

Detailed Explanation of Proposed Harvest Decision Rule for the North Stock Assessment Region

The Harvest Decision Rule adopted by the Northern Shrimp Advisory Committee was a variation of the Harvest Decision Rule previously in place used to calculate the 2025-26 total allowable catches for the Eastern and Western Assessment Zones. This new Harvest Decision Rule adds a 25 per cent maximum change in harvest limit year-to-year and a 4-year phase-in period (2026-27, 2027-28, 2028-29, 2029-30).

Detailed explanation of how the Harvest Decision Rule works:

Part 1: Exploitation rate (ER) is determined using updated Spawning Stock Biomass (SSB) index

- Compare SSB-index to the Lower control point (LCP) and upper control point (UCP)
- If above UCP, then ER = 20%
- If below LCP, then ER = maximum 10%
- If between LCP and UCP, then ER = $((\text{SSB-index} - \text{LCP}) / (\text{UCP} - \text{LCP})) * 10\% + 10\%$

-- If SSB-index < LCP then proceed to Part 6 otherwise continue to Part 2 --

Part 2: Calculate initial catch limit (ICL)

- The initial catch limit = NSAR Fishable Biomass (FB) index * ER (from part 1)

Part 3: Determine halfway point between ICL and previous year's TAC

- Previous year's TAC = TAC_{y-1}
- Halfway point = $((\text{ICL} - \text{TAC}_{y-1}) / 2) + \text{TAC}_{y-1}$

Part 4: Select between this year halfway point or last year's ICL

- If the FB-index increased from y-2 to y-1, then select the larger of the two TACs.
- If the FB-index decreased from y-2 to y-1, then select the smaller of the two TACs.

Part 5: check that the selected TAC from Part 4 does not result in a ER over 150% of the ER determined in Part 1.

- Calculate ER of selected TAC from Part 4 = TAC (from Part 4) / FB-index
- If ER is less than 150% of Part 1 ER, move to Part 6
- If ER is more than 150% of Part 1 ER, reduce TAC to 150% of Part 1 ER

Part 6: determine TAC to apply the "max change in TAC" and "phase-in" rules

- If SSB-index < LCP, then TAC = FB-index * 10%
- If SSB-index > LCP, then TAC = TAC determined in Part 5

Part 7: Apply the 25% maximum change in TAC rule

- If TAC in part 6 is great than 125% of TAC_{y-1}, then TAC_y = TAC_{y-1} * 1.25
- If TAC in part 6 is less than 75% of TAC_{y-1}, then TAC_y = TAC_{y-1} * 0.75

Part 8: Apply phase-in when setting the TAC for 2026-27, 2027-28, 2028-29, or 2029-30

- In 2026-27:
 - 75% of 2026-27 TAC based on 2025-26 TAC (41,128 t) = 30,846 t, plus
 - 25% of 2026-27 TAC based on TACy determined in Part 7 = $\text{TACy} * 0.25$
- In 2027-28:
 - 50% of 2027-28 TAC based on 2025-26 TAC (41,128 t) = 20,564 t, plus
 - 50% of 2027-28 TAC based on TACy determined in Part 7 = $\text{TACy} * 0.50$
- In 2028-29:
 - 25% of 2028-29 TAC based on 2025-26 TAC (41,128 t) = 10,282 t, plus
 - 75% of 2028-29 TAC based on TACy determined in Part 7 = $\text{TACy} * 0.75$
- In 2029-30:
 - 0% of 2029-30 TAC based on 2025-26 TAC (41,128 t) = 0 t, plus
 - 100% of 2029-30 TAC based on TACy determined in Part 7 = TACy

Appendix 5

Northern Shrimp Advisory Committee (NSAC)

March 25, 2026.

Welcome and Opening Remarks

Todd Williams, DFO Resource Management (RM), Ottawa, Chair, Northern Shrimp Advisory Committee (NSAC), outlined the Agenda for the meeting.

- Members did not voice any comments or concerns on the Agenda items

Science – Stock Updates

Stock updates were provided for Northern shrimp (*Pandalus borealis*) in the North and South Stock Assessment Regions (NSAR and SSAR) and Striped shrimp (*P. montagui*) in Shrimp Fishing Area (SFA) 4 and the Eastern and Western Assessment Zones (EAZ and WAZ).

Northern shrimp (*P. borealis*)

Nicolas Le Corre, DFO Science, Newfoundland and Labrador Region, presented an overview of the survey coverage, environmental and ecosystem conditions, and survey biomass indices that provided the basis for the March 2026 *P. borealis* stock update.

- The stock status for the NSAR and SSAR is only updated during full assessments; it is not possible to estimate stock status during interim-year updates.
- Fishable Biomass (FB) and Spawning Stock Biomass (SSB) survey indices, estimated using spatiotemporal models, are updated for use in the harvest decision rules that are being tested via Management Strategy Evaluation (MSE).
- Proportional breakdown of each assessment region's FB survey index into management areas is provided.
- The ocean climate in the NL Bioregion has shown decadal-scale cold and warm phases. The warm phase that started around 2020 continued in 2025.
- The biomass of key predatory fishes (Greenland Halibut, Atlantic Cod, and redfish) have increased in both assessment regions in the 2020s and remains high in 2025.
- Clearwater FNC requested the rationale for the warm water observed on the Labrador Shelf (3O), which is noteworthy because there are colder temperatures evident on the Eastern Scotian Shelf.
 - DFO Science suggested that it may be due to increased mixing of warm water from deeper off the ocean shelf.
- Ocean Choice International (OCI) indicated that warmer bottom ocean temperatures are occurring in other nearby areas (3N) and affecting other fisheries (i.e., yellowtail).
- Nunavut Fisheries Association (NFA) raised that comparing pre- (recent past) and post-collapse (current) biomass in the system is not a fair comparison; it is currently a shellfish dominant regime and it doesn't make sense to compare this to a groundfish dominated regime.
- Northern Coalition (NC) asked if the ecosystem is stabilizing at pre-collapse levels and if pre-collapse is referring to the early 1980s timeframe?
 - DFO Science indicated that pre-collapse refers to pre-1990s and there is uncertainty if the system will return to pre-collapse levels because of warming waters, etc.
- OCI noted that a more groundfish dominant ecosystem is returning, yet shrimp SSB and FB is increasing – what could be a rationale for this?
 - DFO Science indicated that it is difficult to decipher the effect of predation – there are multiple aspects at play.
 - Potential predator-prey index is reported and this doesn't mean that predators are present in the same location as the shrimp.
 - There's an abundance of small redfish in the North and it is challenging to determine how much shrimp they are consuming.

- Depends on fishing pressure.
- The Canadian Association of Prawn Producers (CAPP) noted that the biomass of shrimp in the deeper strata does not appear to be included in the ecosystem survey.
 - DFO Science responded that the survey covers 100m to 750m depth.

NSAR Indices and Trends

- The stock status was not updated in March 2026. The stock was estimated to be in the Healthy Zone when last fully assessed in March 2025.
- The SSB survey index in 2025 (150,000 t) increased from 2024 (142,900 t), and remains above the time-series average.
- The FB survey index in 2025 (231,000 t) increased from 2024 (186,300 t), but remains below the time-series average.
- In the context of the overall trajectory of the stock, these interannual changes in the indices are consistent with the stock biomass remaining near their respective time-series averages.

SSAR Indices and Trends

- The stock status was not updated in March 2026. The stock was estimated to be in the Healthy Zone when last fully assessed in March 2025.
- The SSB survey index in 2025 (73,400 t) increased from 2024 (55,500 t), but remains below the time-series average and is around the lowest level in the survey time series.
- The FB survey index in 2025 (114,500 t) increased from 2024 (90,900 t), but remains below the time-series average and is around the lowest level in the survey time series.
- In the context of the overall trajectory of the stock, these interannual changes in the indices are consistent with the stock biomass remaining near their respective time-series low levels.

FB Spatial Distribution

- The spatial distribution (proportion) of the FB survey index within each stock assessment region was provided to inform the relative distribution of the stock assessment region harvest level into the management areas (i.e., the SFAs).
- CAPP, NFA, and OCI requested clarification on the methodology used to calculate the FB proportions and for DFO to provide calculations (including amounts) of FB in each management area under the old methodology (OGMAP and STRAP) and the new methodology (spatiotemporal modeling) dating back to 2016.
 - DFO Science indicated that the entire survey timeseries data (1996-2025) was input into the spatio-temporal model to calculate the FB and proportions over the entire survey timeseries, but only the most recent years were shown. The FB proportions were requested by DFO RM.
 - DFO RM indicated that tables illustrating these calculations will be provided.

Striped shrimp (*P. montagui*)

Samantha Fulton, DFO Science, Arctic Region, presented an overview of the survey coverage and survey biomass indices that provided the basis for the March 2026 *P. montagui* stock update.

SFA 4

- Stock status is in the Healthy Zone.
- SSB index increased by 20% (to 30,000 t) from 2024.
- FB index increased by 19% (to 33,900 t) from 2024.

EAZ

- Stock status is in the Critical Zone.
- SSB decreased by 77% (to 3,045 t) from 2024.

- FB decreased by 79% (to 3,298 t) from 2024.

WAZ

- Stock status is in the Healthy Zone.
- SSB decreased by 16% (to 55,465 t) from 2024.
- FB index increased by 14% (to 82,646 t) from 2024.

Discussions on TAC and Management Measures

- NC remarked that the increase in the WAZ biomass is orders of magnitude higher than the biomass in EAZ, and these stock areas are likely not truly discrete; we are likely observing the biomass distribution at the moment it is surveyed, and the combined stock status as a whole may be relatively unchanged.
 - Noted that the relative shifts in stock biomass pose a challenge to developing management measures for these management areas and there was interest expressed in previous years to examine the stock in more holistic way.
 - From a science perspective, how significant should the EAZ stock assessment findings be as we approach management of the resource?
 - DFO Science responded that this year's survey catches of striped shrimp near Resolution Island were much lower relative to adjacent areas. Survey maps show that a concentration of biomass has moved from the EAZ to just over the WAZ management line.
 - Further, the SSB in EAZ is a relatively smaller value, so drops in percentage appear much worse than they actually are in absolute terms (tonnage amounts).
 - A one-year biomass decrease in the EAZ may not be of high concern from a science perspective in context of increases in adjacent regions, but is something to keep an eye on.
- NFA noted that there are several decreases in biomass followed by increases evident in the EAZ time series.
- NRL raised that the dividing line between EAZ and WAZ has been problematic for many years. The changes in stock status are largely driven by migrations in distribution between EAZ and WAZ which yield mathematical effects (artifacts) due to the dividing line.
 - Requested that a Working Group be struck to address this issue.

2026-27 Total Allowable Catches (TACs)

DFO RM presented TAC recommendation options for *P. borealis* and *P. montagui*.

Striped shrimp (*P. montagui*)

TAC recommendations for the Striped shrimp stocks followed application of the 2-step Harvest Decision Rule (HDR) accepted by NSAC in previous years. TAC discussions for the WAZ were reserved for the Indigenous meeting.

SFA 4

- Applying the 2-step = 5,828t (ER of 17.2%).
- Maintaining the 2025 = 4,033t (ER of 11.9%).
- CAPP supported maintaining the TAC at 4,033 t. No objections were raised.

EAZ

- A 10% exploitation rate (ER), as per following the HDRs, results in a TAC of 330t.
- NRL, NC, and CAPP noted that 330 t would pose challenges to the directed *P. borealis* stock in the EAZ and re-iterated their request for a Working Group to examine the EAZ-WAZ management area border.
 - There was general agreement among NSAC members that 330 t is not sufficient for cover *P. montagui* bycatch in the *P. borealis* fishery.

- CAPP proposed applying an adaptation of the 2-step function of the HDR, resulting in a TAC of 1,578t.
 - No objections by industry were raised. The Chair noted the preference for a variation in the application of the HDR for a TAC of 1,578t.
- DFO Science clarified that a 20% maximum ER would not be a major concern for them at this time, however, they could not support removals beyond this level.
 - The Precautionary Approach framework should be used in managing the stocks, and as such, registering the adjustments as an overallocation may be preferable in this regard (as opposed to the overallocation integrated within the TAC).
 -

Northern shrimp (*P. borealis*)

TAC recommendations for Northern shrimp were based on MSE-tested HDRs, applying a 4-year moving average of the FB spatial distribution, and a catch utilization adjustment.

NSAR Harvest Level

- Stock status was in the Healthy Zone when last fully assessed (March 2025).
- Harvest levels for variations of the shortlisted 2-Step HDRs with an ER of 20% and 17% were presented.
- NSAC members (NC, OCI, CAPP) supported retaining NSAC's previous recommendation (from January 20, 2026 meeting) for the HDR with a 20% ER, a maximum harvest level change of 25%, and a 4-year phase-in period (Max25_4-year_20%).
- Max25_4-year_20% results in a NSAR harvest level of 41,760 t.

SSAR Harvest Level

- Stock status was in the Healthy Zone when last fully assessed (March 2025).
- Harvest levels for variations of the shortlisted 2-Step HDRs with an ER of 10%, 12.5%, and 15% were presented.
- NSAC members (FFAW, CAPP) supported retaining NSAC's previous recommendation (from January 20, 2026 meeting) for the HDR with a 15% ER and a maximum harvest level change of 25% (Max25_15%).
- Max25_15% results in a SSAR harvest level of 15,780 t.

Management Area TACs

TACs were presented with the various shortlisted HDRs for the NSAR and SSAR. TACs with the NSAC-recommended HDR for the NSAR and SSAR noted above were as follows:

- WAZ: 4-year average of biomass (19.3%) of the NSAR harvest level = 8,060t.
- EAZ: 4-year average of biomass (23.1%) of the NSAR harvest level = 9,636t.
- SFA 4: 4-year average of biomass (35.3%) of the NSAR harvest level = 14,752t.
- SFA 5-North: 4-year average of biomass (22.3%) of the NSAR harvest level = 9,302t.
- SFA 5-South: 4-year average of biomass (7.2%) of the SSAR harvest level = 1,132t.
- SFA 5 (North and South combined): 10,434t
- SFA 6: 4-year average of biomass (82.3%) of the SSAR harvest level = 12,991t.
- 3L: 4-year average of biomass (10.4%) of the SSAR harvest level = 1,641t; Canadian domestic TAC for SFA 7 = 1,367t.
- 3NO: 4-year average of biomass (0.1%) of the SSAR harvest level = 16t.

Catch Utilization Adjustment

The industry proposal, tabled at the January 20, 2026 NSAC meeting, to add 5% of TAC to each management area in the NSAR was discussed.

- Since the January 20 meeting, views provided to the Department indicated limited benefits of the proposed 5% catch adjustment to Nunavut and Nunavik (NU and NK) entities. Land Claimants submitted a proposal for underutilized quota in the WAZ to benefit NU/NK entities in NU/NK-East and Davis Strait West (DSW), subject to co-management Board decisions.

Discussions on TAC and Management Measures

- NC asked why the new survey data was not integrated into the TAC_1 to TAC_5 projections? When will it be?
 - DFO Science responded that this data was not included in the MSE diagnostic performance statistics because the full MSE will not be run again until it is reviewed (i.e., 2028). However, the survey data was included in updating the biomass indices and determining the NSAR and SSAR harvest levels.
- OCI questioned why additional HDRs were tested after the past NSAC meeting, suggesting that it was not worth expending capital to add this calculation given that the improvements in LRP are minimal yet would have a significant impact on economics.
 - DFO RM responded that RM wanted to see the full profile of options for risk assessment purposes.
- CAPP indicated that the tests with the additional ERs have not changed their recommendation, noting that the 2025-26 ERI would be 17.8% if that TAC was fully caught, and that we're on track to be within the range for ER this year.
- FFAW re-iterated that their previous HDR recommendation with 15% ER still stands. The 0.2% difference in pLRP is an improvement, but has significant implications for inshore fleet amounting to ~\$3 million in reduced TAC.
 - Questioned if the HDR numbers for 12.5% ER will be included in the advice to the Minister as an option?
 - DFO Science responded that they recognize the socio-economics implications and that the choice is a management decision, but recommended exploring additional HDRs with lower ERs from a conservation perspective because those lower ERs would be more closely aligned with Umsy values; 15% ERI is almost 2x Umsy numbers. Further, the LRP is much lower than in the past, presenting increased uncertainty with how the stock would respond should it enter the Critical Zone.
- CAPP suggested that with an HDR selected, SFA-specific TAC recommendations are simply arithmetic. Indicated that they are comfortable with the TACs, though their support is conditional on having a method of catching the full harvest level.
 - NC and NFA supported this argument.
- Regarding the catch utilization adjustment, CAPP indicated that it should be included in the TAC (i.e., SFA harvest level + utilization adjustment), rather than an over-allocation which may raise concerns from an MSC perspective.
 - The catch utilization adjustment could be viewed as a way to help the actual removals be more akin to what the model assumes was removed.
 - NFA questioned if this approach would have any impacts to MSE or the model?
 - DFO Science noted that the MSE assumes that 100% of the HDR amount is removed.
- St. Anthony Basin Resources Inc. requested clarification on why the catch utilization adjustment is only for the NSAR and not the SSAR?
 - DFO RM responded that greater utilization is realized in the SSAR, but views regarding a proposal for the SSAR are welcomed.
 - Clearwater FNC noted that SSAR underutilization would likely occur in the future once SFA 7 is re-opened.
- DFO Science indicated concerns that the catch utilization adjustment could result in increased localized fishing pressure and that this adjustment should be recorded separately from the TAC for tracking purposes.

- CAPP re-iterated that the industry proposal continues to be that each SFA in the NSAR receives a 5% increase to the TAC from the MSE HDR output, and that every quota holder within each NSAR SFA receives a 5% increase, which should also apply to Davis Straight West.
 - NFA supported including the 5% adjustment in the TAC, but recognized the need to document how the resulting TACs were determined.
 - DFO RM suggested that TAC can be articulated as inclusive of the HDR output and catch utilization adjustment.

Other Updates

Electronic Video Monitoring (EVM) and Shore-based Reporting

DFO provided an update on the EVM and shore based reporting initiatives.

- EVM in the offshore fleet, which is voluntary, cannot be used while fishing inside the Nunavut and Nunavik Settlement Area waters. Using EVM would be subject to Board decisions to be used in the future.
- Similarly, EVM and the shore-based reporting do not apply for offloading in Greenland.
- The shore-based program will have mandatory and voluntary components:
 - Dockside carton counting (and weighing for industrial shrimp only) by independent service providers will be mandatory.
 - Package inspection to determine the “net frozen weight” of all product types will also be mandatory.
 - Further inspection to determine the net drained (or thawed) weight is optional.
- There will be a 1-year pilot phase for the shore-based program and the fleet will be given a 60-day notice prior to this program coming into effect.
- NRL supported that some aspects of the shore-based component are voluntary.
 - Clarified that industrial shrimp, which is a raw material sold as a raw material and at actual weight, wouldn't require sampling.
 - Noted that it is important that the requirement to provide a complete and accurate hail on a daily basis remains the licence conditions.
- NC expressed concern at the pace that the initiative is being implemented, given and outstanding questions and concerns.
 - Operational considerations as to how this is going to work and additional costs that may be incurred. Will there be incremental effort and time constraints?
 - Next steps are unclear – is further dialog with inspection companies planned?
 - Supports EVM, as long as there's no intent to make it mandatory.
 - Unclear when the specific implementation date will be. Does the term "pilot" extend to EVM? Requested that draft protocols and forms be distributed to NSAC so members can have opportunity to review.
- The Chair indicated that the pilot is for the shore based component, to indicate that there could be changes to the sampling requirements etc., and that “pilot” does not imply mandatory EVM in the future.
 - Further, the Chair committed to:
 - Focus on the implementation questions and ground truthing operational requirements with the service providers.
 - Send protocol documents to NSAC members for their review, and outline next steps in terms of engagement with service providers. Provide 60 days notice to NSAC once operational elements are developed.

Licence Conditions

DFO provided an update on the key changes in the 2026 conditions of licence.

- Added a requirement for licence holders with access to multiple quota types in Davis Straight West to record the allocation type being fished in the Comments section of the logbook.

- Added a requirement to report catches in SFA 5 to SFA 5 North or SFA 5 South in the Comments section of the logbook.
- Added requirement to report tows in SFA 5 that cross the line between SFA 5 North and SFA 5 South in the Comments section of the logbook.
- Added a new Schedule which outlines technical specification and conditions about the functioning and operation of the EVM system, noting that more specific requirements would be in the EVM protocol, which is being finalized and would be distributed.
- Added a new Schedule requiring those using EVM to hail out.

SFA 7

DFO provided an update on the potential re-opening of SFA 7.

- Regarding the 9.4% allocation to Prince Edward Island Atlantic Shrimp Company (PEIASC), the Minister was considering the potential for using that allocation for Section 10 purposes, and had requested PEIASC to provide information with respect to that.
- PEIASC chose not to submit an application, nor provide additional information related to the projects which had been funded through their allocation over the years, which DFO had offered to share with the NSAC memberships.
- The Minister is further contemplating what she would like to do with their allocation.
- The TAC for SFA 7 will be established along with SFAs 4-6, informed by the MSE-tested HDR. However, any decision to re-open SFA 7, and associated TAC, will be announced together with allocation decisions.
- The PEIASC clarified the position of the PEIASC and PEI Government on this matter.
 - While their allocation supported science research, it was never tied to scientific research, there have been all sorts of other projects supported over the years.
 - The PEIASC could mount a credible proposal, but they do believe their access to Northern shrimp in SFA 7 should not be subject to NSAC members support. It should be guaranteed by the Government of Canada, as re-iterated by PEI Minister Bell and Minister Hudson, who personally met with Minister Thompson.
 - PEIASC's and PEI Government's position is that if there is an allocation in SFA 7, PEI should continue to receive their 9.4% allocation.
 - Indicated they would be happy to share the PEIASC letter with the committee.

Section 10 for NSRF in SFA 4

- The Minister decided to allocate 1,500t for 2026-27 from the SFA 4 TAC, and that, from now on, the 1,500t will be distributed proportionately to all allocation holders in SFA 4 according to the sharing key.

Conservation and Protection (C&P)

- C&P provided an update on enforcement activities over the past year.

Safety at Sea

- Transport Canada presented information pertaining to safety at sea.

Participants

Sherry Glynn – Fish Food Allied Workers Union (FFAW)

Julian Ryan – 3K North, FFAW

Catherine Boyd, Dany Jabbour, and Jim Gibbons – Clearwater Seafoods

Bruce Chapman – Canadian Association of Prawn Producers

Carey Bonnell – Ocean Choice International

Michelle Moffat – MV Osprey

Brian McNamara, Brent McNamara, and Mark Quinlan – Newfound Resources Ltd.

Tony Wright – Makivvik Corporation

Alastair O'Reilly – Northern Coalition

Brynne Divine – Oceans North
Patrick Martin and Jerry Ward – Qikiqtaaluk Corporation / Qikiqtaaluk Fisheries Corporation
Derek Butler – Nunavut Fisheries Association
Christopher Mitchelmore – St. Anthony Basin Resources Inc.
Ron Johnson – Torngat Fish Producers Co-operative Society Ltd.
Emma-Rose Murphy – Nunatsiavut Government
Paul Loder and Peter Adams – Baffin Fisheries Cooperative
Ann-Julie Cote – Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec
Shawn Frank – Pikalujak Fisheries
Dave MacEwan – Government of Prince Edward Island
Lewis Creed – Prince Edward Island Atlantic Shrimp Company
Cyril Boudreau – Government of Nova Scotia Department of Fisheries and Aquaculture
Leigh Gustafson – Nunavut Wildlife Management Board (NWMB)
Keith Coady – Arctic Fishery Alliance
Ben Davis – Torngat Wildlife Plants and Fisheries Secretariat

Todd Williams – DFO Resource Management (RM) National Capital Region (NCR), Chair
Leigh Edgar – DFO RM NCR
Liliya Baranova – DFO RM NCR
Dirk Algera – DFO RM NCR
Brian Lester – DFO RM NCR
Nicholas Duprey – DFO Science NCR
Nicolas Rolland – DFO Science NCR
Nicolas Le Corre – DFO Science NL Region
Krista Baker – DFO Science NL Region
William Coffey – DFO Science NL Region
Martin Henri – DFO RM NL Region
Wojciech Walkusz – DFO Science Arctic Region
Samantha Fulton – DFO Science Arctic Region
Matt Martens – DFO FM Arctic Region
Sandra Moore – DFO FM Arctic Region
Danielle Roy – DFO RM Gulf Region
Andrew Humber – DFO Conservation and Protection NL Region
Paul Glavine – Transport Canada

Northern Shrimp Advisory Committee - Indigenous Meeting – March 26, 2026

A virtual meeting of the Northern Shrimp Advisory Committee (NSAC) took place on March 25, 2026. The Department held a virtual post-meeting with Indigenous participants on March 26, 2026, which included representatives from:

- Nunavut Fisheries Association (NFA)
- Torngat Fish Producers Co-Op
- Qikiqtaaluk Corporation (QC) / Qikiqtaaluk Fisheries Corporation (QFC)
- Northern Coalition (NC)
- Canadian Association of Prawn Producers (CAPP)
- NunatuKavut Community Council (NCC)
- Ueushuk Fisheries
- Torngat Joint Fisheries Board
- Nunatsiavut Government (NG)
- Baffin Fisheries Coalition (BFC)
- Makivvik Corporation
- Newfoundland Resources Ltd (NRL)

The perspectives on science and management of *P. borealis* and *P. montagui* in the EAZ and WAZ in this document encompass views expressed at the Indigenous meeting; views at the broader NSAC meeting on March 25, 2026 are provided in a separate document.

Science – Stock Updates

DFO Science recapped the *P. borealis* and *P. montagui* stock updates presented at the NSAC main table.

- NFA asked if biomass trends for *P. montagui* in WAZ and EAZ could be assessed and reported similarly to SFA 4 *P. montagui* (i.e., a model-based assessment method)?
- DFO Science indicated that it is not possible to parse out the trends for *P. montagui* in WAZ and EAZ because they are encompassed within SFA 4, which uses the entire region to determine the spawning stock biomass trends.
 - The most effective way to address this would be to emulate what has been done for Northern shrimp – treat it as one biological stock.

2026-27 Total Allowable Catches (TACs)

DFO RM presented TAC recommendation options for *P. borealis* in the EAZ and WAZ, and for *P. montagui* in SFA 4, EAZ, and WAZ.

Striped shrimp (*P. montagui*)

TAC recommendations for the Striped shrimp stocks followed application of the 2-step Harvest Decision Rule (HDR) accepted by NSAC.

EAZ

- Stock status is in the Critical Zone.
- A 10% exploitation rate (ER), as per following the HDRs, results in a TAC of 330t.
- There was recognition of the movement of the stock across the EAZ and WAZ dividing line, which creates uncertainty and potential for fluctuations in the stock dynamics.
- NSAC recommended applying a modified 2-step HDR = 1,578t (ER of 47.8%) instead.
- Indigenous meeting participants supported the NSAC recommendation to apply the modified 2-step HDR, resulting in a TAC of 1,578t.

SFA 4

- Stock status is in the Healthy Zone.
- Applying the 2-step HDR = 5,828t (ER of 17.2%).
- Maintaining the 2025 TAC = 4,033t (ER of 11.9%) (recommended at NSAC).
- No objections were raised against the NSAC recommendation.

WAZ

- Stock status is in the Healthy Zone.
- Applying the 2-step HDR = 15,743t (ER of 19.0%)
- QC/QFC, Makivvik, NFA, BFC, and NC indicated their support for an ER of 20% or higher given the current Healthy status and the stock's past biomass trends that illustrate the stock is able to easily tolerate a 20%+ ER with no conservation risks.
 - Should take advantage of the stock being in the Healthy Zone while the opportunity exists.
- NRL raised that larger, older shrimp are increasingly accounting for more of the catches, which is very desirable from a marketing perspective.
 - It is possible that by setting conservative TACs, we're seeing the sizes of shrimp increase because they are surviving longer.
 - To maximize sustaining catching older, larger shrimp, it would be advantageous to know what the mortality-at-age rates are.
 - NC noted that the science update supports NRL's conclusions: fishable biomass has increased while spawning stock biomass has decreased, suggesting that there's more in the fishable biomass reaching the end of the life cycle.

Northern shrimp (*P. borealis*)

TAC recommendations for Northern shrimp in the EAZ and WAZ were consistent with the approach presented at NSAC.

EAZ

- Stock status was in the Healthy Zone when last fully assessed (March 2025).
- NSAC recommended applying the MSE-tested HDR selected for the NSAR and the 4-year average of biomass in EAZ = 9,636t .
- No objections were raised against the NSAC recommendation.

WAZ

- Stock status was in the Healthy Zone when last fully assessed (March 2025).
- NSAC recommended applying the MSE-tested HDR for the NSAR and the 4-year average of biomass in WAZ = 8,060t.
- No objections were raised against the NSAC recommendation.

Management MeasuresCatch Utilization Adjustment Proposals

- In response to the catch utilization adjustment proposed by CAPP at NSAC on January 20, Nunavut (NU) and Nunavik (NK) entities (Makivvik/NRL and NFA) requested an alternative catch utilization proposal for NU/NK to allow an additional 800t to be fished in EAZ (NU/NK E and DSW). This alternative proposal from NU/NK was discussed.
 - Department suggested that this 800t could be split by adding 200t to NU/NK-E and 600t to NU/NK-DSW, to be shared 50/50 between NU and NK.
- DFO Science requested clarification on when in the season the adjustment would be applied and whether the amount of removals already registered would be considered before the adjustment is

applied.

- DFO RM indicated that the proposed adjustments would be considered as part of the TAC for each management area, applied at the beginning of the season.
 - NFA raised that the NU/NK proposal would be a one-year trial, with potential adjustments made the following year.
- CAPP expressed support for the flexibilities and the NU/NK proposal in principle, but concern with allowing additional quota to be fished in EAZ without any transfer of the quota out of the WAZ, essentially resulting in overallocation in the EAZ.
- DFO Science asked whether the increased QC/QFC fishing capacity would mean that the TACs in WAZ and EAZ will become more fully utilized, and what that may mean regarding these catch utilization proposals.
 - NRL noted that even with the increased fishing capacity, the risk of fully utilizing the catch in these areas is very low.
- CAPP raised that the *P. borealis* and *P. montagu* biomass distributions may be shifting between EAZ and WAZ such that the decrease/increase in biomass in one area could be resulting in a corresponding decrease/increase in the other, highlighting the importance of accounting for adjustments between the two areas.
- DFO RM noted for awareness that applying the increases equally within the settlement areas would change the traditionally held 80:20 NU-NK sharing arrangement to 73:27.
 - NRL acknowledged that the minor change to 73:27 sharing was known among NU and NK interests when developing their catch utilization proposal.
- NFA raised that the NU/NK proposal is conceptually similar to the 5% proposal discussed at the NSAC table. The key difference is the amount of quota made available and potentially caught in the EAZ and WAZ.
- CAPP highlighted that allowing quota from one management area to be fished in another (i.e., WAZ quota fished in EAZ) conceptually departs from the 5% proposal and how the management of the fishery has operated to date, and could be considered precedential. Would others be allowed the flexibility to fish quota from one area in another area? Is the NU/NK proposal to be treated as an exception (i.e., one-off)?
 - DFO RM indicated the NU/NK proposal is similar in objective to the CAPP proposal.
 - Striving to provide flexibility without changing allocation keys, sharing arrangements, or opening up new access for entities that didn't have access previously.
- CAPP expressed that ad hoc operationalization and precedent-setting potential of the NU/NK proposal should be avoided. Further, a rationale for the amount in the NU/NK should be developed, so it is not arbitrarily selected. A unifying proposal that meets the flexibility objectives and melds consistency in the 5% and NU/NK proposals regarding rationale and approach should be developed.
 - NFA noted that the 5% proposal is also based on allowing uncaught quota in one area to be fished in another (i.e., Davis Strait East quota to be caught in SFA 4 and SFA 5).
 - NRL noted that the two proposals are the same in concept and complementary in terms of amounts. However, there needs to be consideration regarding the source of the underutilization and adjustments should equally benefit those entities from where it is occurring. To the extent it is sourced from land claims areas, land claimants should benefit accordingly.
- BFC indicated that land claim agreements are a critical component towards evaluating the catch adjustment proposals, and supported NRL's position regarding land claims beneficiaries.
 - The desire for flexibility stems from minimizing environmental (sea ice affecting northern companies to a greater extent) and operational (fleet availability) constraints.
 - Seeking flexibility not to be able to catch more quota necessarily, rather to be able to catch quota in more appropriate areas depending upon the time of year.
- CAPP noted that the 800t adjustment amounts to ~10% of the potential WAZ TAC, which is twice the percentage increase of the 5% proposal, and raises potential equity and conservation

concerns. Further, the EAZ contains commercial and land claims areas, so adjustment decisions in this area affects all harvesters.

- Reiterated that limits should be set on adjustment amounts for the NU/NK proposal.
- BFC indicated that the 5% proposal results in similar tonnage amounts being allocated to industry stakeholders in SFA 4 and 5-North relative to the NU/NK proposal.
- NC raised that the stocks are not biologically divided, this is only for management purposes to retain the existing allocation structures. In situations where there is no risk to the resource, maximum flexibility should be implemented to improve operational efficiencies without prejudice to the risk to people's respective shares.
- DFO Science noted concerns with both the 5% proposal and NU/NK proposal regarding uncertainty with resultant concentration of effort and increased fishing pressure in the NSAR management areas, especially in light of the other proposed flexibilities (e.g. carry forward) that may be operationalized, which will also result in increased pressure.
- The Chair noted the the committee's agreement on the desire to have a catch utilization adjustment included in the TAC. The Department will follow up in the coming days with further information and invite participants to submit views and potential alternative proposals that reconcile the two existing proposals.

Other Updates

Nunavut Fisheries Regulations (NFRs)

DFO provided an update on the NFRs, which are being co-developed with Indigenous partners.

- The Atlantic Fishery Regulations will no longer apply within the Nunavut Settlement Area and Nunavik Marine Region; key provisions will be “ported over” to avoid disruption. No anticipated changes to commercial shrimp fishing or licensing; existing licenses will continue to be valid.
- QC/QCF sought confirmation that NFRS would not affect existing commercial operations outside Nunavut (e.g., Ungava Bay) and whether communal fish plans could be used outside settlement areas.
- DFO clarified that communal plans apply only within settlement areas and that commercial fishing outside of settlement areas remains unchanged.

Electronic Video Monitoring (EVM) and Shore-based Reporting

DFO provided an update on the EVM and shore based reporting initiatives.

- EVM in the offshore fleet, which is voluntary, cannot be used while fishing inside the Nunavut and Nunavik Settlement Area waters. Using EVM would be subject to Board decisions to be used in the future.
- Similarly, EVM and the shore-based reporting do not apply for offloading in Greenland.
- The shore-based program will have mandatory and voluntary components:
 - Dockside carton counting (and weighing for industrial shrimp only) by independent service providers will be mandatory.
 - Package inspection to determine the “net frozen weight” of all product types will also be mandatory.
 - Further inspection to determine the net drained (or thawed) weight is optional.
- There will be a 1-year pilot phase for the shore-based program and the fleet will be given a 60-day notice prior to this program coming into effect.
- NRL noted that the term service providers need to be expanded beyond what been used in recent years to include offloading companies, independent contractors.

Licence Conditions

DFO provided an update on the key changes in the 2026 conditions of licence.

- Added a requirement for licence holders with access to multiple quota types in Davis Strait West to record the allocation type being fished in the Comments section of the logbook.
- Added a requirement to report catches in SFA 5 to SFA 5 North or SFA 5 South in the Comments section of the logbook.
- Added requirement to report tows in SFA 5 that cross the line between SFA 5 North and SFA 5

South in the Comments section of the logbook.

- Added a new Schedule which outlines technical specification and conditions about the functioning and operation of the EVM system, noting that more specific requirements would be in the EVM protocol, which is being finalized and would be distributed.
- Added a new Schedule requiring those using EVM to hail out.

SFA 7

DFO provided an update on the potential re-opening of SFA 7.

- Regarding the 9.4% allocation to Prince Edward Island Atlantic Shrimp Company (PEIASC), the Minister was considering the potential for using that allocation for Section 10 purposes, and had requested PEIASC to provide information with respect to that.
- PEIASC chose not to submit an application, nor provide additional information related to the projects which had been funded through their allocation over the years, which DFO had offered to share with the NSAC memberships.
- The Minister is further contemplating what she would like to do with their allocation.
- The TAC decision for SFA 7 will align with SFAs 4-6, however, the decision to re-open SFA 7 will align with allocation decisions.

Section 10 for NSRF in SFA 4

- The Minister decided to allocate 1,500t for 2026-27 from the SFA 4 TAC, and that, from now on, the 1,500t will be distributed proportionately to all allocation holders in SFA 4 according to the sharing key.

**SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD
FOR**

Information:

Decision: X

Issue: To seek Nunavut Wildlife Management Board (NWMB) approval of the Tallurutiup Imanga National Marine Conservation Area interim management plan and non-quota limitations on harvesting by non-Inuit within specific zones of Tallurutiup Imanga NMCA.

Background:

(a) How the issues relate to the NWMB mandate;

The Aulattiqatigiit Board, the Inuit-Canada co-management board for Tallurutiup Imanga National Marine Conservation Area (NMCA), is seeking NWMB approval of the aspects in the interim management plan (IMP) that concern wildlife management (5.2.34 (c)) and non-quota limitation on harvesting by non-Inuit (5.6.48) (see Annex I). This IMP, once approved, will be in place for five years, when it will be replaced by a full management plan.

(b) Why the issue is being presented;

The IMP is being submitted to the NWMB for approval in accordance with:

- *Nunavut Agreement, Article 5.2.34 (c): “In addition to its primary functions outlined in Section 5.2.33, the NWMB shall in its discretion perform the following functions related to management and protection of wildlife and wildlife habitat: (c) approve plans for management and protection of particular wildlife habitats including areas within Conservation Areas, Territorial Parks and National Parks”;*
- *Nunavut Agreement, Article 5.6.48: “Subject to the terms of this Article, the NWMB shall have sole authority to establish, modify or remove, from time to time and as circumstances require, non-quota limitations on harvesting in the Nunavut Settlement Area”; and;*
- *Tallurutiup Imanga IIBA, Section 7.3.8: “Once the Aulattiqatigiit Board has reached a consensus decision in accordance with section 5.8 of this Agreement, the proposed [interim] Management Plan will be provided to the Nunavut Wildlife Management Board for its approval of the parts of the proposed Management Plan related to the management and protection of particular wildlife habitat, in accordance with Article 5 of the Nunavut Agreement.”*

No wildlife management measures that affect Inuit rights-based activities provided for in the *Nunavut Agreement* are being proposed in the IMP. Management measures related to wildlife

(e.g. zones prohibiting or restricting hunting and/or fishing by non-beneficiaries) were developed to increase the protection of wildlife and its habitat.

(c) The key facts and circumstances relating to the issue; and

Tallurutiup Imanga NMCA is a marine conservation area located in the northern Qikiqtani region and includes some terrestrial areas (three significant bird cliffs and all islands under 400 ha). It is an ecological driver for much of the eastern Arctic and provides important habitat for nearly all Arctic marine species.

It is jointly managed by the Qikiqtani Inuit Association and the Government of Canada (Parks Canada, Fisheries and Oceans Canada, and Transport Canada). An Inuit Impact and Benefit Agreement was signed for Tallurutiup Imanga NMCA in 2019, but the establishment of the site under the *Canada National Marine Conservation Areas Act* remains outstanding. One of the remaining steps needed to complete the establishment of Tallurutiup Imanga NMCA is to develop an IMP.

The IMP will guide the management of Tallurutiup Imanga NMCA while a comprehensive 10-year Management Plan is developed within five years of the establishment of the NMCA. The development has been led by a Planning Committee, which consists of two representatives from the Qikiqtani Inuit Association, one representative from Parks Canada, and one representative from the Government of Nunavut. The IMP has been informed by extensive consultation with the associated communities, as well as input from stakeholders and the public, from 2018 to 2025. The communities associated with Tallurutiup Imanga NMCA are Ausuittuq (Grise Fiord), Qausuittuq (Resolute), Ikpiarjuk (Arctic Bay), Mittimatalik (Pond Inlet), and Kangiqtuqaapik (Clyde River).

The IMP contains a vision, management objectives and targets, and a zoning plan that address the protection and conservation of Tallurutiup Imanga ecosystems and cultural heritage while supporting sustainable use and respecting Inuit rights. The vision describes the desired future state of Tallurutiup Imanga NMCA in 15-20 years. The management objectives are broad outcomes to accomplish over the life of the IMP, with associated targets that are more specific and will measure progress towards achieving the objectives. They focus on the development and assessment of tools and processes to protect the natural and cultural heritage of Tallurutiup Imanga; protect Inuit rights and promote community well-being, support collaborative research and monitoring, and reinforce public safety. The zoning plan sets the management intent for different areas of Tallurutiup Imanga NMCA. Zoning describes what activities can take place in an area, when they can take place, and under what conditions. In particular, the zoning plan creates spatial and temporal restrictions to protect sea ice, areas of importance to the communities and key species such as Narwhal, Beluga, Walrus and sea birds. **Inuit rights-based harvesting and traditional use are not impacted by IMP restrictions.** However, some zones prohibit and/or restrict recreational fishing, commercial fishing, and hunting, trapping and gathering by non-Inuit either year-round or on a seasonal basis. The zoning is divided into an ice-season zoning plan and an open-water season zoning plan, to better reflect the realities of each season.

(d) The estimated time required to orally present the issue (excluding questions/discussion).

Representatives from the Qikiqtani Inuit Association and Parks Canada will deliver a 45 to 60minute PowerPoint presentation (enclosed) that provides details about the management planning process, an overview of the interim management plan (i.e., vision, objectives, and zoning), and the results of consultation.

Consultation:

The following is a summary of consultations that were undertaken between 2018 and 2025 to develop the interim management plan for Tallurutiup Imanga NMCA. The consultation report (enclosed) provides a comprehensive description of the Tallurutiup Imanga planning committee's consultations with Inuit, partners, stakeholders, and the Canadian public through meetings, workshops, open houses, and community events that played an integral role in the development of the interim management plan and what we heard during the consultation process, including validating what we heard with communities.

- **2018 - 2019 community consultations:** Consultations were held in Ausuittuq, Qausuittuq, Ikpiarjuk, Mittimatalik, and Kangiqtugaapik to gather information about what should be in the IMP. The Planning Committee met with hamlet councils, Hunters & Trappers Organizations and other local organizations and held public information sessions. 158 individuals attended those consultations. The Planning Committee used what was heard at these meetings to draft the IMP.
- **2018 - 2019 stakeholder engagement:** Stakeholders in the cruise, shipping, mining, and tourism industries, as well as NGOs, researchers and the Qikiqtaaluk Wildlife Board, were engaged through presentations, meetings, and workshops. Sixty-eight stakeholder groups attended 16 engagement opportunities. Letters and emails were also received from stakeholders. Inputs received during this stakeholder engagement informed the draft IMP.
- **March 2024 community consultations:** The Planning Committee travelled to the five communities associated with Tallurutiup Imanga NMCA to present the draft IMP and ensure that community concerns and priorities had been adequately addressed. Meetings were held with hamlet councils, Hunters & Trappers Organizations, Community Land and Resource Committees, and the Nauttigsuqtiit (or Inuit stewards) over 2 days in each community. Open houses were also held in each community. A total of 103 individuals attended these meetings. During these consultations, the Planning Committee received additional information on values that need to be protected (e.g. rights, culture, wildlife) and about the threats to these values in Tallurutiup Imanga NMCA (e.g., concerns about pleasure craft and cruise ship behavior and impacts, concerns about capacity to respond to public safety or environmental incidents). The Planning Committee used this information to further refine the objectives and targets and the zoning sections of the draft IMP. The Planning Committee also received comments that improved the vision statement.
- **November 2024 - January 2025 community consultations:** Representatives of the Planning Committee travelled to the five communities associated with Tallurutiup Imanga NMCA to validate the updates made to the content of the draft IMP as a result of the March 2024 community consultations. Meetings were held with Hamlet Councils, Hunters &

Trappers Organizations, and the Nauttigsuqtiit. Fifty-one individuals attended the meetings. Community members had questions and comments but were overall satisfied with the draft IMP, which allowed the Planning Committee to move to public and stakeholder consultations.

- **2025 public engagement:** Engagement was held online from June 23 to July 21. The draft IMP was posted in Inuktitut, English, and French on parks.canada.ca. It was shared on Facebook (@ParksCanadaNunavut, @ParksCanada, @QikiqtaniInuit @GovofNunavut), X (@ParksCanNunavut), and on the website Consulting with Canadians. The draft IMP webpage was visited 258 times in English and 25 times in Inuktitut. The public was offered to provide comments by email. Only one comment was received. No modifications to the draft IMP were made following the public engagement.
- **2025 stakeholder engagement:** From May 22 to August 1, 86 stakeholder groups were engaged, including the Qikiqtaaluk Wildlife Board. They each received a copy of the draft IMP. Meetings were held with representatives of the mining, shipping, cruise ship, tourism, and fisheries industries. Follow-up meetings were then held with the Association of Arctic Expedition Cruise Operators and Baffinland Iron Mines Corp. Non-government organizations and academia were provided with an opportunity to submit feedback in writing. A total of 125 comments were received from all stakeholders. Following this stakeholder engagement, the Planning Committee recommended making a few changes to the IMP.
- **2025 community check-in:** Before officially integrating the changes based on stakeholder engagement into the draft IMP, the Planning Committee checked in with each of the five communities associated with Tallurutiup Imanga NMCA. The hamlet councils and Hunters & Trappers Organizations of each community were sent a letter that provided an overview of the proposed changes. They were also offered an opportunity to meet and discuss the changes with the Planning Committee, ask questions, and clarify any of the edits. Communities did not raise concerns regarding the proposed changes. Therefore, these changes were made to the draft IMP.

Who We Engaged:

The consultation report (enclosed) provides a comprehensive description of the Tallurutiup Imanga planning committee's consultations with Inuit, partners, stakeholders, and the Canadian public through meetings, workshops, open houses, and community events that played an integral role in the development of the interim management plan and what we heard during the consultation process, including validating what we heard with communities.

On April 24, the Aulattiqatigiit Board passed a resolution to approve the final draft of the IMP. As part of this process, QIA received the approval from the Imaq, an advisory committee to QIA whose members are the QIA community directors from the five TINMCA communities.

Recommendation

The Planning Committee recommends approval of the interim management plan from the NWMB.

Prepared By:

Tallurutiup Imanga NMCA IMP Planning Committee

Laurent Jonart, Government of Canada (Parks Canada) 867-222-1102 laurent.jonart@pc.gc.ca

Michele LeBlanc-Havard, Government of Nunavut 867-975-7700 mleblanc-havard1@gov.nu.ca

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Justin Buller, Qikiqtani Inuit Association jfbuller@dryasconsulting.ca

Date: 2026-09-11

Addenda

Annex I: Fishing Restriction Tables

Annex I: Fishing Restriction Tables

Zone 1 – Ice and Open Water Season

Not allowed

= Limitation on Harvesting for Non-Inuit*

Access and extractive uses are prohibited throughout all Zone 1 areas for Non-Inuit

	Wreck of Breadalbane NHS of Canada	Walrus haul-out sites	Seabird colonies	Ikpikittuarjuk/Moffet Inlet	Tremblay Sound
Recreational fishing	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Commercial fisheries	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Hunting, trapping, gathering (non-rights based)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Bottom trawling	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

*No restriction on sport hunting as per the Tallurutiup Imanga IIBA

Zone 3 – Ice Season

Not allowed

= Limitation on Harvesting for Non-Inuit**

	Peary Caribou sea ice crossings*	Other key sea ice habitat*	Significant Benthic Areas
Recreational fishing	Allowed	Allowed	Allowed
Commercial fisheries	Allowed	Allowed	Allowed
Hunting, trapping, gathering (non-rights based)	Allowed	Allowed	Allowed
Bottom trawling	Not allowed	Not allowed	Not allowed

*Commercial shipping is not allowed

**No restriction on sport hunting as per the Tallurutiup Imanga IIBA

Zone 3 – Open Water Season

Not allowed

= Limitation on Harvesting
for Non-Inuit*

	Walrus haul-out buffer	Seabird colony buffers	Significant Benthic Areas	Beluga summer aggregation areas	Narwhal summer aggregation areas	Underwater cultural resource area
Recreational fishing	Not allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Commercial fisheries	Not allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed
Hunting, trapping, gathering (non-rights based)	Not allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed
Bottom trawling	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

*No restriction on sport hunting as per the Tallurutiup Imanga IIBA

Tallurutiup Imanga National Marine Conservation Area Interim Management Plan

Presentation for Nunavut
Wildlife Management Board
June 2026



Parks
Canada

Parcs
Canada

Tallurutiup Imanga NMCA Planning Committee



Justin Buller, Jovan Simic
Qikiqtani Inuit Association



Michele LeBlanc-Havard
Government of Nunavut



Laurent Jonart
Government of Canada
(Parks Canada)

Support

Andrew Orawiec
Transport Canada

Kevin Tallon
Fisheries and Oceans Canada

**Brigitte Bourdon, Karen Halley, Katriina
O’Kane, Allison Stoddart**
Parks Canada

**Lou-Ann Cornacchio, Jamessee Moulton,
Justin Hack**
Government of Nunavut

Purpose of presentation

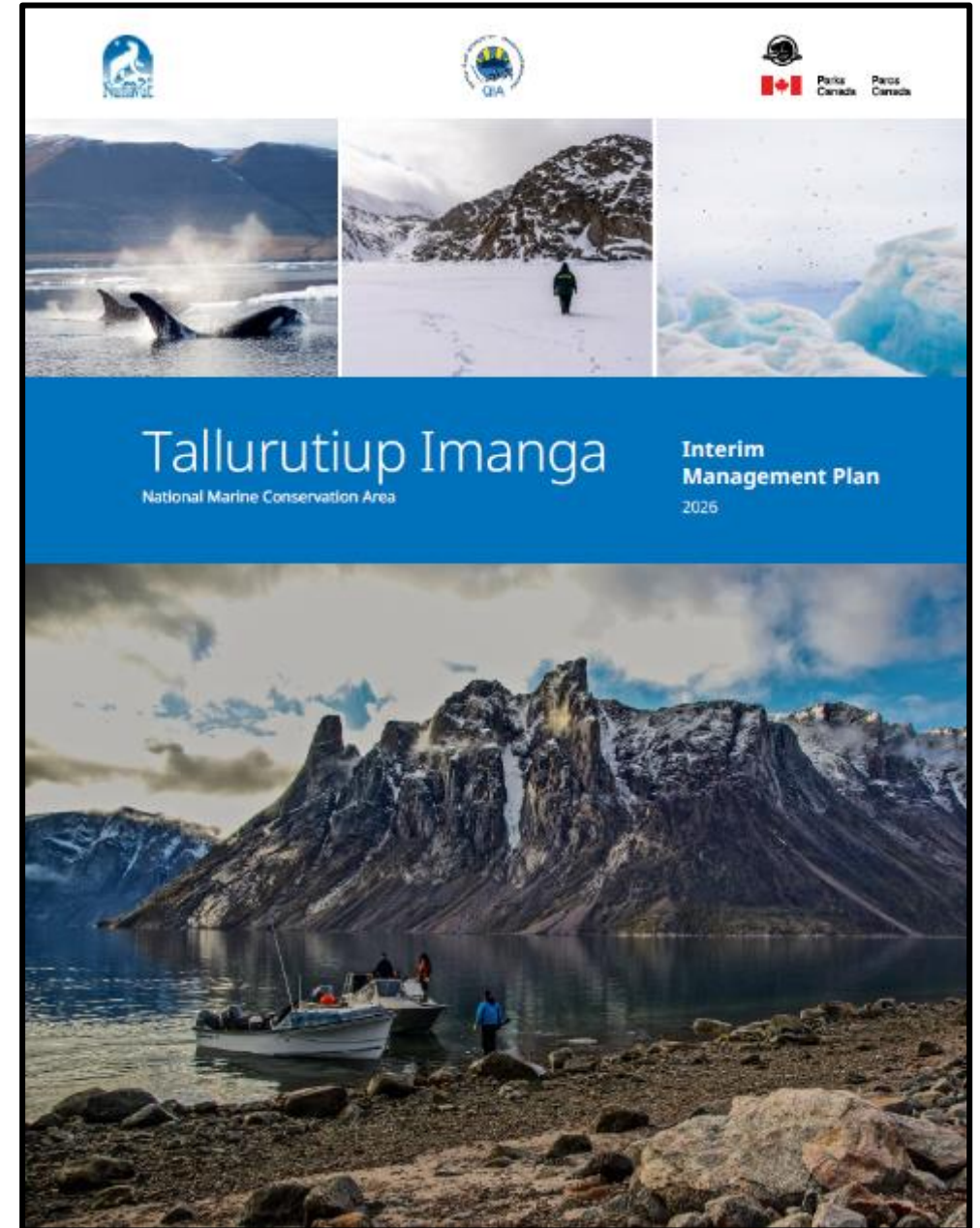
1. Introduction to NMCA's and Tallurutiup Imanga
2. Review the development and provide an overview of the interim management plan
3. Provide details on aspects of the plan that fall under the NWMB's mandate
4. Request approval for the plan



Issue

Seeking NWMB approval on:

- ☐ **the Interim Management Plan for Tallurutiup Imanga NMCA**
 - In accordance with Section 5.2.34 (c) of the NA
- ☐ **non-Inuit limitations on harvesting in certain areas of Tallurutiup Imanga NMCA**
 - In accordance with Section 5.6.48 of the NA



Introduction to National Marine Conservation Areas



Parks Canada's National Marine Conservation Areas (NMCAs)

- **Protect and conserve** representative marine areas for the **benefit, education and enjoyment of the people** living in Canada and the world
- Managed and used in a sustainable manner that **meets the needs of present and future generations** without compromising the structure and function of the ecosystems
- In NMCAs, DFO and Transport Canada retain their regulatory authorities, but within the context of the CNMCA Act

NMCA Management Goals

1. Protect marine ecosystems and biodiversity
2. Conserve cultural heritage
3. Manage use in an ecologically sustainable manner
4. Support Indigenous leadership in marine conservation
5. Contribute to the well-being of Indigenous peoples and coastal communities
6. Facilitate opportunities for meaningful visitor experiences
7. Enhance awareness and understanding of NMCA's
8. Advance effective collaboration for management



Activities in NMCA's

- Most activities allowed
e.g., fishing, tourism, shipping
 - So long as they are done in an ecologically sustainable manner and in alignment with the purpose and objectives of the NMCA
- Activities managed using zoning or other management tools
e.g., guidelines or best practices shared with users

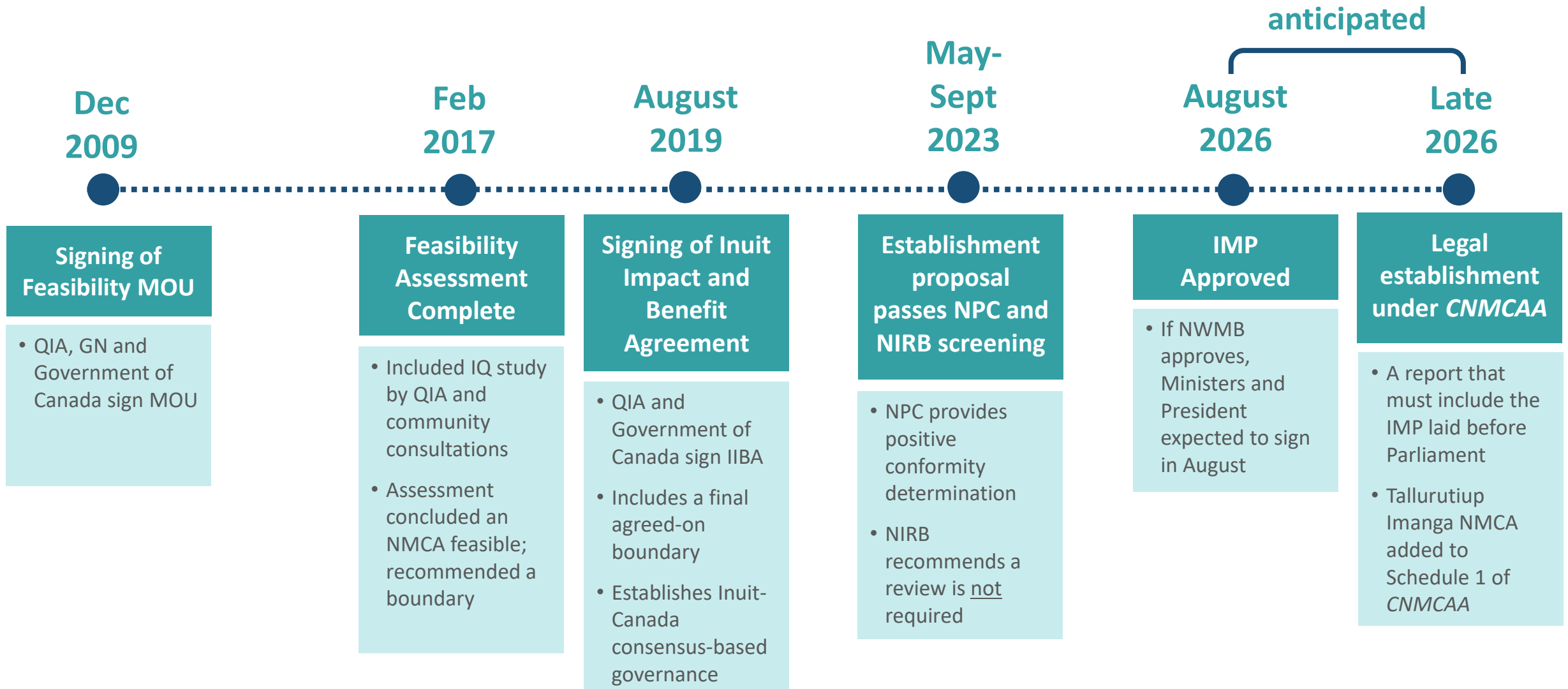
- ☒ Inuit harvesting and use
- ☒ Commercial fisheries
- ☒ Tourism
- ☒ Shipping
- ☒ Recreational use
- ☒ Disposal at sea
- ☐ Oil and gas activities
- ☐ Mining activities

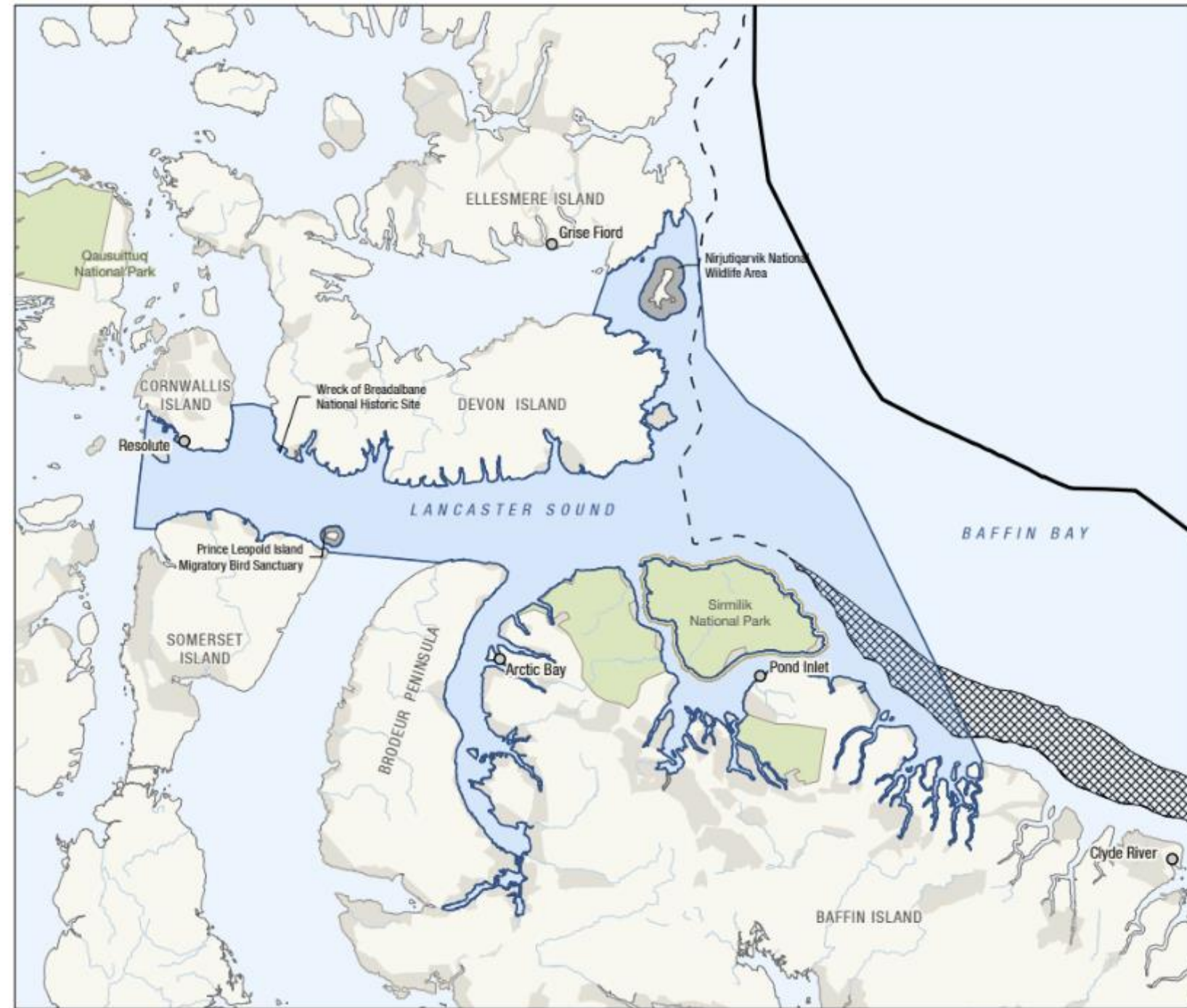
Introduction to Tallurutiup Imanga





Tallurutiup Imanga Establishment





Tallurutiup Imanga National Marine Conservation Area

Tallurutiup Imanga National Marine Conservation Area

National Park

Other Features

Inuit Owned Lands

Nunavut Settlement Area

Bylot Island Migratory Bird Sanctuary

Outer landfast ice zone

Exclusive Economic Zone Boundaries

Marine exclusion from Tallurutiup Imanga National Marine Conservation Area



**AULATTIQATIGIIT
BOARD**

Joint governance



QIA Director or
department head
for Tallurutiup
Imanga NMCA

Parks Canada Field
Unit Superintendent
for Tallurutiup
Imanga NMCA

Chair of the Inuit
Advisory Committee
(Imaq)

A senior
representative from
Fisheries and
Oceans Canada

A representative as determined by QIA

Aulattiqatigiit Board is a joint Qikiqtani Inuit Association and Parks Canada body created to guide the management of Tallurutiup Imanga National Marine Conservation Area (NMCA).

A senior representative from another federal department

Imaq

- Article 6 of the Tallurutiup Imanga IIBA
- Provides advise to QIA on matters affecting Inuit
- Imaq chair sits on the Aulattiqatigiit Board
- Current membership includes QIA's community directors of the five associated communities



Development of Tallurutiup Imanga Interim Management Plan



Development of the Interim Management Plan

1

Phase 1

Drafting the IMP (2018-2023)

2

Phase 2

Reviewing the IMP (2024-2025)

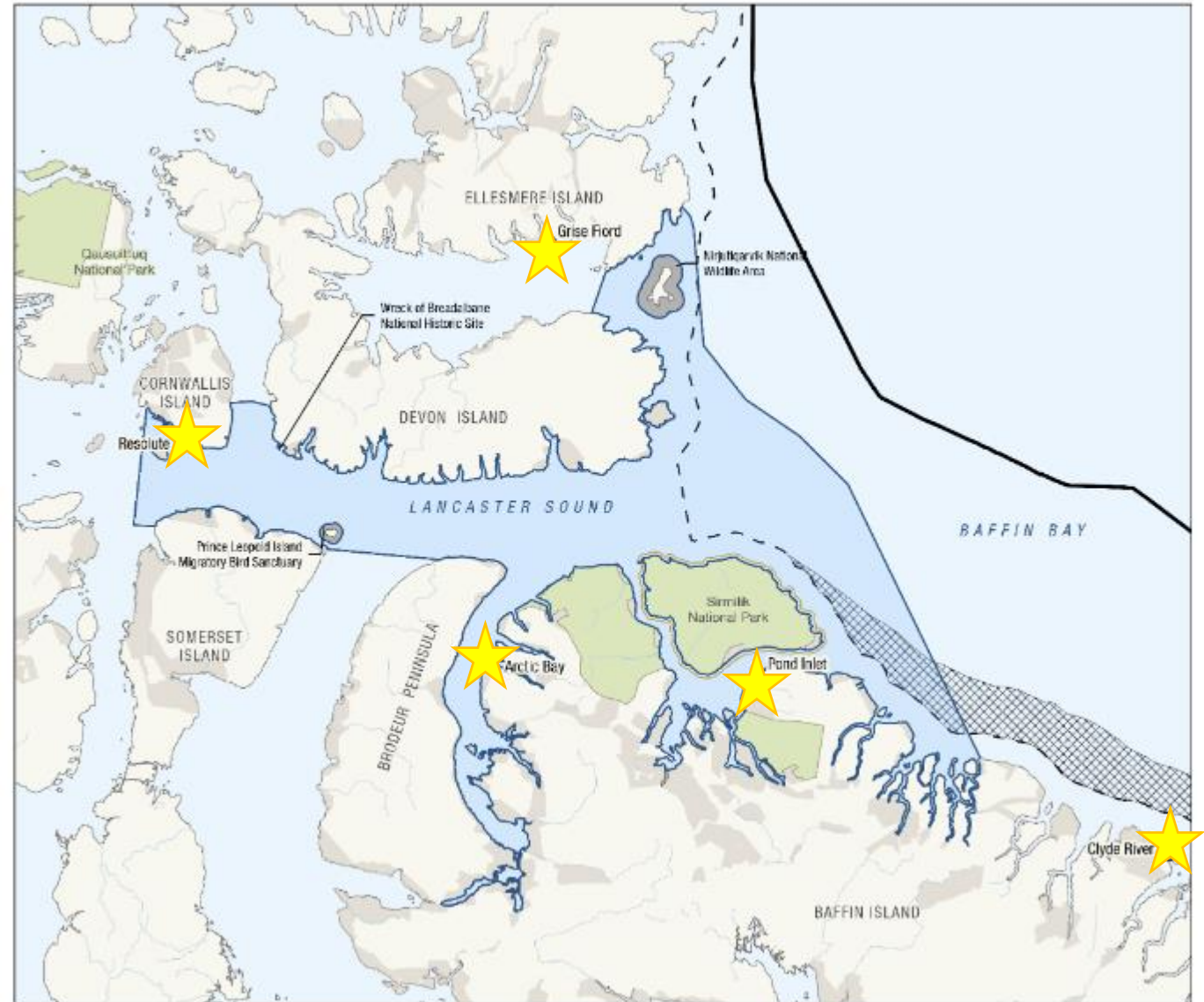
Communities Consulted

Tallurutiup Imanga Inuit Impact and Benefit Agreement defines the **Tallurutiup Imanga NMCA Communities** as:

- Arctic Bay
- Resolute
- Pond Inlet
- Clyde River
- Grise Fiord

Each community was visited **4 times from 2018 to 2025** in the process of developing the IMP:

1. May - July 2018
2. April - May 2019
3. March 2024
4. November 2024 - January 2025



Development of the IMP

1

Phase 1

Drafting the IMP
(2018-2023)

Feasibility Assessment

- Tallurutiup Imanga NMCA Feasibility Assessment completed in 2017
- Summary of ecology, regional Inuit Qaujimajatuqangit, and economic considerations

Community Consultations

- 2 rounds of meetings with Grise Fiord, Resolute, Pond Inlet, Arctic Bay, and Clyde River

Stakeholder Consultations

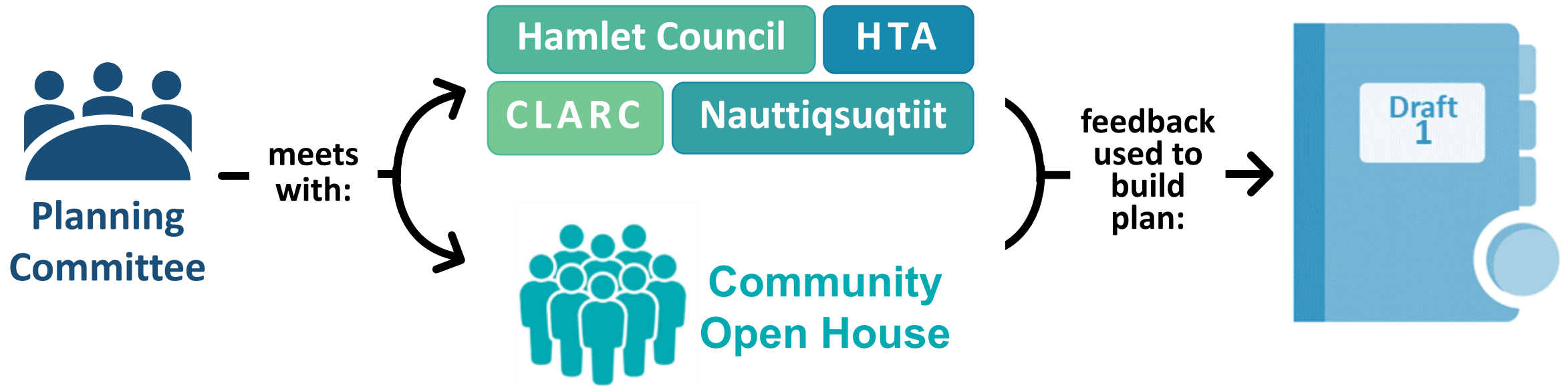
- Meeting and workshops held
- Cruise, shipping, mining, fishing tourism industries
- Nunavut institutions, NGOs, research groups, academia

Other data sources

- Draft NLUP and QWB submission
- Canadian Wildlife Service data
- Cruise ship data
- Sea ice, flow edge, polynya data

Phase 1 Community Consultations (2018-2019)

- Purpose of meetings was to hear community inputs and concerns regarding key issues
- 2 rounds of meetings held:
 - ✓ **May to July 2018**
 - ✓ **April to May 2019**



What we heard

Community Consultation 2018-2019



Protect and reduce impacts to wildlife ,
their habitat, and migration routes

Need to manage shipping traffic and
impacts on wildlife and habitat



Concerns about ice breaking and a
need for sea ice protection

Manage tourism adjacent to
communities



What we heard

Community Consultation 2018-2019



Improve communications/
manage cooperatively

Ensure Inuit Qaujimajatuqangit is included in
management and decision making



Set research priorities / training for
Inuit to conduct research

Coordinated monitoring within
TINMCA

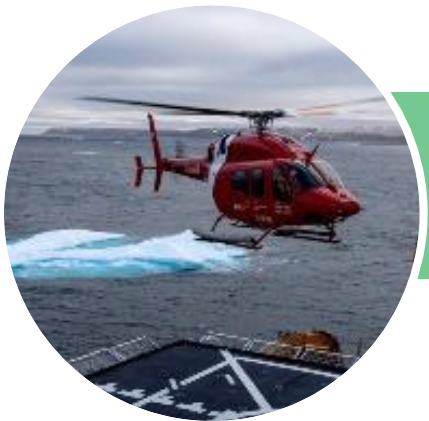


What we heard

Community Consultation 2018-2019



Changing ice conditions/
climate change



Coordination of emergency
response

Share knowledge and
information



Enforcement



Development of the IMP

2

Phase 2

Reviewing the IMP (2024-2025)

Community Review

- 2 in-person meetings and one online validation with Grise Fiord, Resolute, Pond Inlet, Arctic Bay, and Clyde River

Stakeholder Review

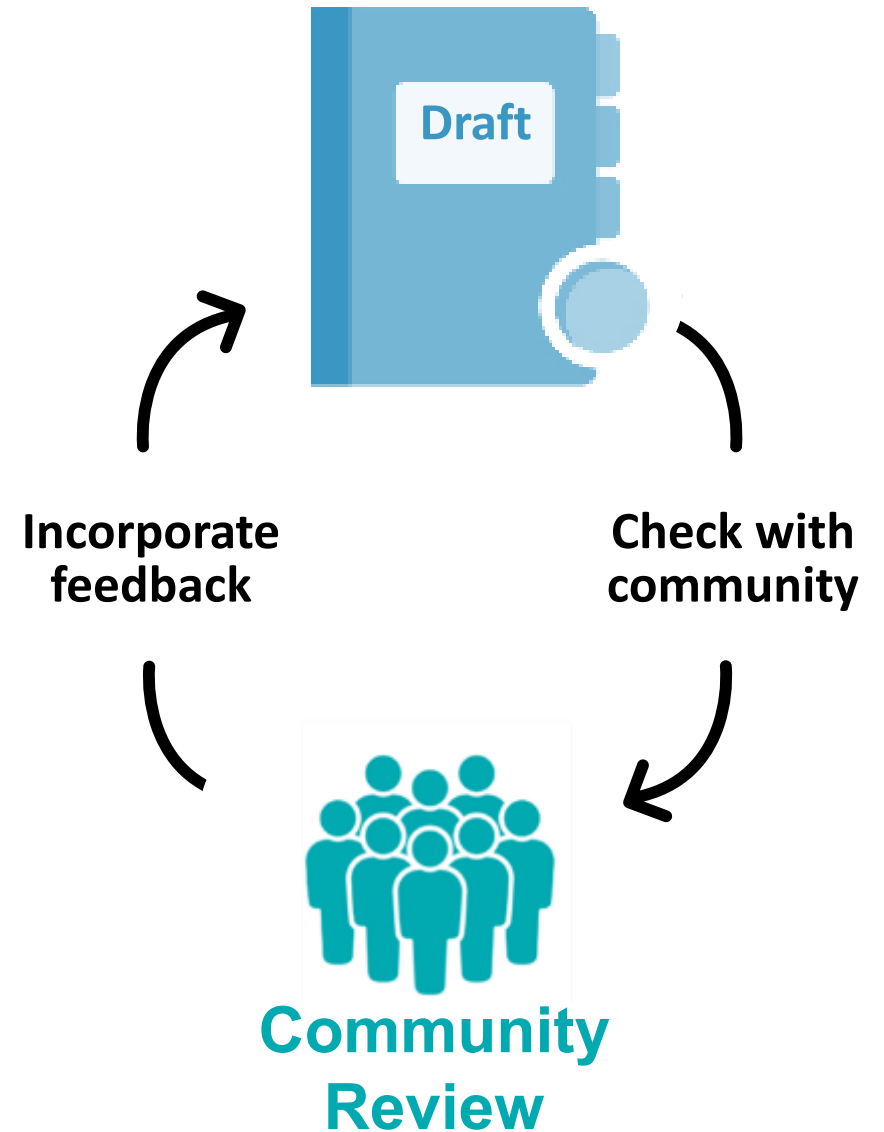
- Met with key industry stakeholders between May and September 2025
- Other stakeholders asked to review by email

Public Consultation

- IMP posted online June-July 2025

Phase 2 Community Review (2024-2025)

- Purpose of meetings was to review the draft IMP, and validate subsequent revisions
- 3 rounds of reviews held:
 - ✓ **March 2024**
 - ✓ **November 2024**
 - ✓ **Fall 2025**



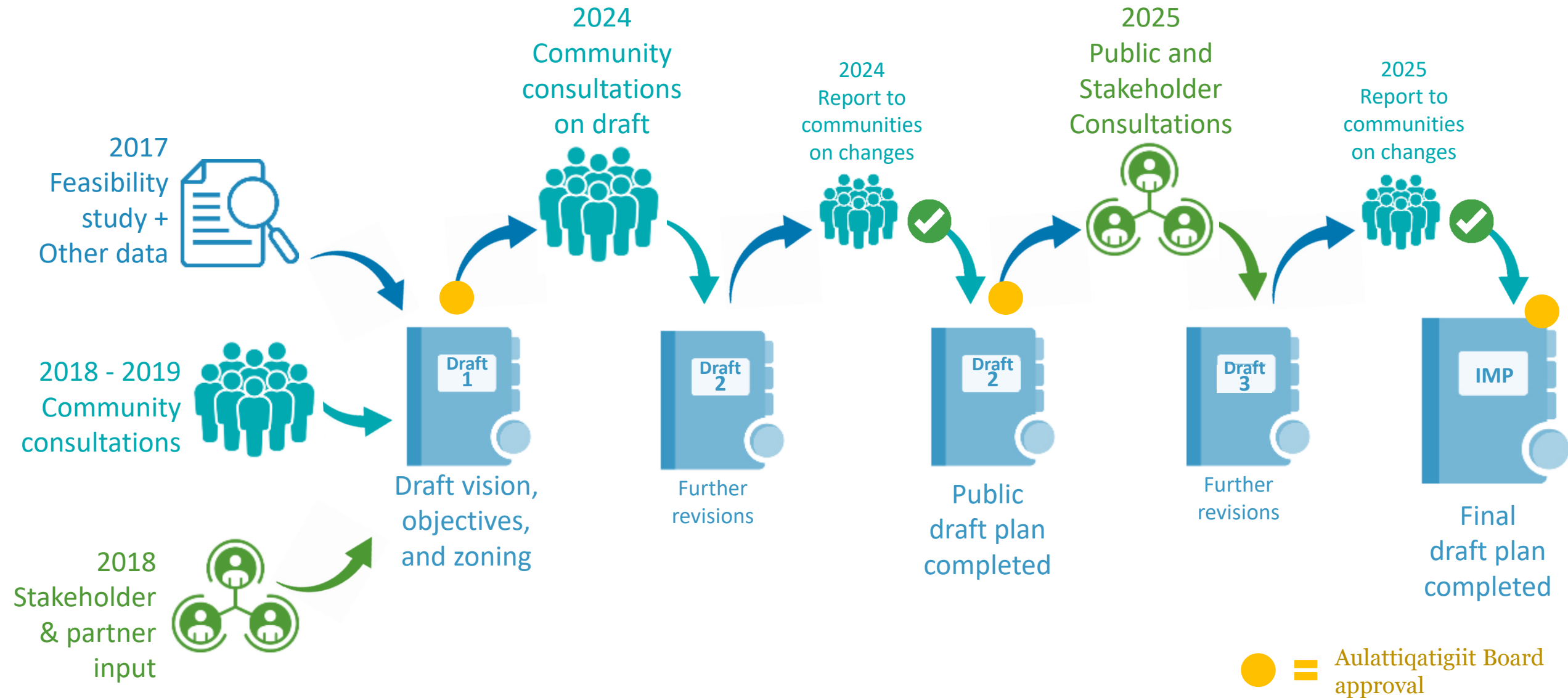


What we heard

Community Review 2024-2025

- Changes made to vision statement to better reflect Inuit values
- Changes made to targets to address desire to prioritize infrastructure and expand protection for seabirds
- Changes to dates for seasonal zoning plans to better reflect current seasonal realities
- Changes to the zoning plan to address issues such as:
 - More protection for the floe edge
 - Additional walrus haul-out areas that needed protection
 - Additional measure to better protect beluga and narwhal habitat
 - Extending protection for seabirds along the Buchan Gulf
- Certain areas needed more flexible forms of protection, added Areas of Special Importance to communities
 - These areas are of particular importance to communities and require special management focus to reduce disturbances
- The communities validated all the changes

Development of the Interim Management Plan



Consultation and Engagement Summary



Overview of Tallurutiup Imanga Interim Management Plan



What is the Interim Management Plan?

- Guidance for the Aulattiqatigiit Board and users
- Guides management until a full management plan developed
- The IMP is the last step required to establish Tallurutiup Imanga NMCA under the *Canada National Marine Conservation Areas Act*



Contents of the Interim Management Plan



VISION

Expresses an inspiring and vivid – yet achievable – description of the desired future state of the NMCA.



OBJECTIVES

Answer the question: “In order to achieve the vision, what results do we need to see?”



TARGETS

Answer the question: “How do we measure our progress toward achieving the desired results?”



ZONING

From more to less restrictive, describes what activities can take place in an area, when they can take place, and under what conditions.



Vision

Tallurutiup Imanga National Marine Conservation Area is a thriving globally significant ecosystem that sustains and empowers Inuit for generations to come and welcomes visitors to experience, appreciate, and respect its meaning to Inuit, Canada, and the Arctic region.

Objectives

Objective 1

- The natural and cultural heritage of Tallurutiup Imanga is protected and conserved.

Targets 1, 3, 4 and 6 are related to wildlife and wildlife habitat.



Objective 2

- The sustainable use of marine and terrestrial resources respects Inuit rights, results in economic and social benefits for Inuit, and enhances the well-being of the associated communities.

Objective 3

- Collaborative research and monitoring increases awareness, informs decision making, and promotes knowledge collection and sharing.

Target 1 is related to wildlife and wildlife habitat.



Objective 4

- Collaborative and coordinated prevention, preparedness, and response planning increases safety of the associated communities and NMCA users and the protection of Tallurutiup Imanga.



Objective 1

- **Target 1.** The effectiveness of the interim zoning plan in protecting and conserving natural and cultural heritage is evaluated to improve the zoning plan if needed (for example, changes to zone boundaries, or the need for additional management tools to support zoning) by the end of year five.
- **Target 3** - Processes for issuing authorizations (such as permits or licenses) for activities in Tallurutiup Imanga NMCA are developed, and documented in a format that is publicly available, by the end of year 2. These processes prioritize the protection of wildlife and Inuit use of the area in the management of other uses and activities within the NMCA. To the extent possible, these processes are streamlined with existing procedures.
- **Target 4** - As per the Federal Marine Protected Areas Protection Standard, an assessment of the compatibility of the use of bottom trawl gear with the NMCA's conservation objectives is conducted in collaboration with communities and stakeholders, and a report delivered to the Aulattiqatigiit Board by the end of year 5.
- **Target 6** - An assessment of the need for increased protection of colonial seabirds and their habitat is completed in collaboration with the Canadian Wildlife Service, and a report with findings and recommendations delivered to the Aulattiqatigiit Board by year 3.



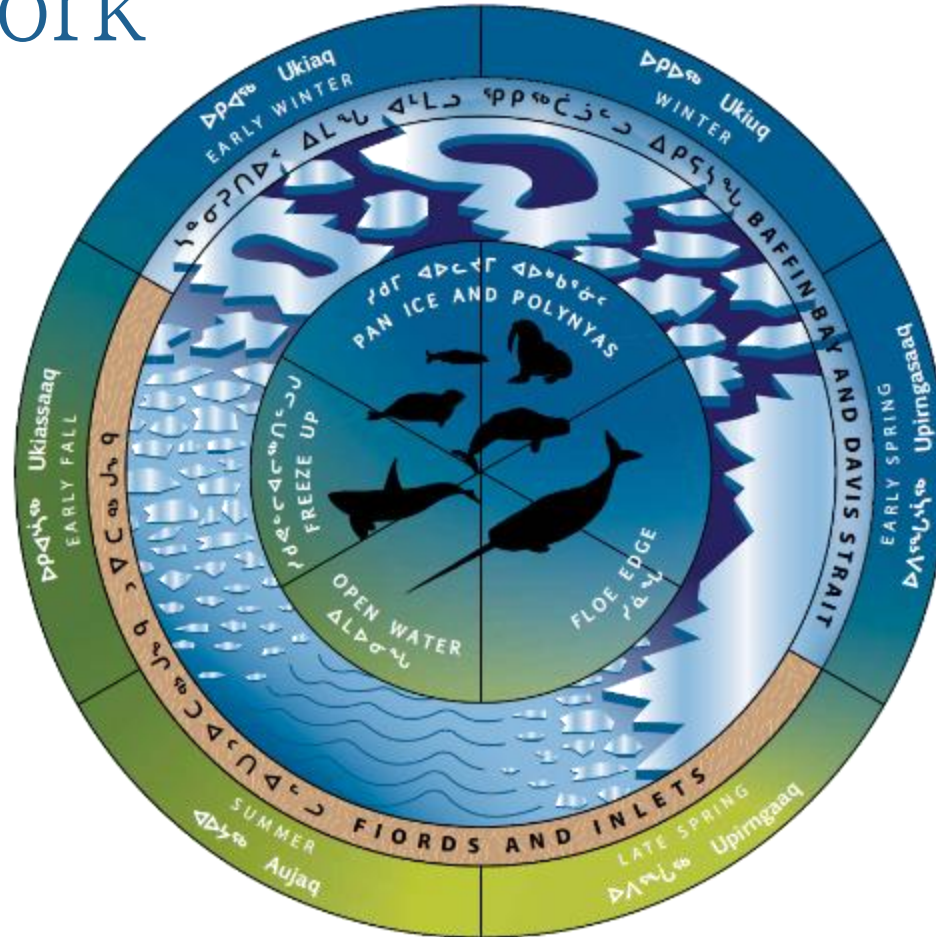
Objective 3

- **Target 1** - A minimum of 3 indicators to monitor ecological sustainability that are based on Inuit Qaujimajatuqangit and western science are co-developed with communities and approved by the Aulattiqatigiit Board. The monitoring of these indicators commences within 5 years.

Zoning Framework

Open Water Zoning Plan

July 21 to
November 15



Ice Zoning Plan

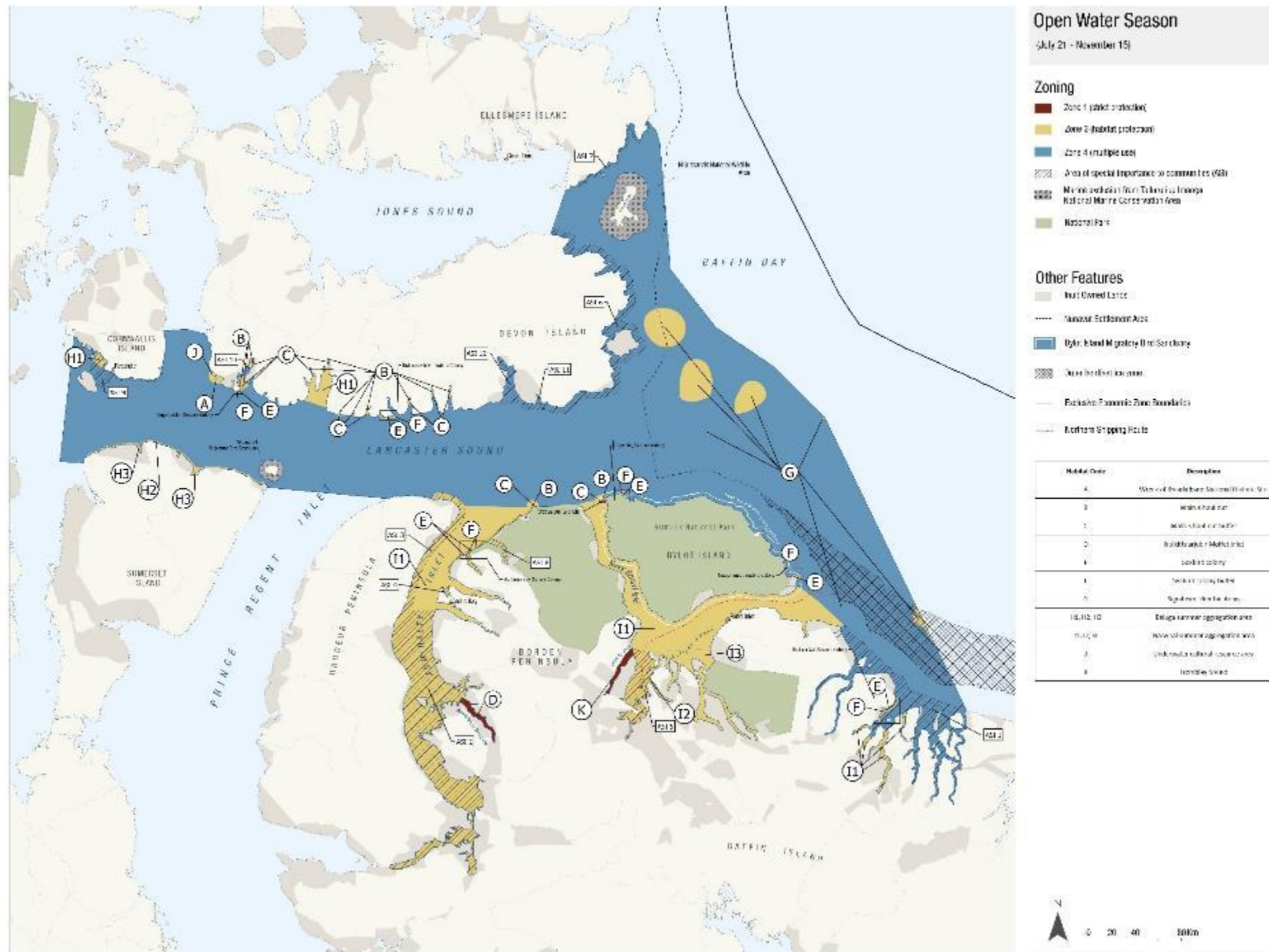
November 16
to July 20

Exceptions to zoning

- Inuit traditional use and access not affected
- National security or sovereignty, defense, law enforcement activities
- Safety and emergency response activities
- Community resupply
- Vessels engaged in innocent passage without stopping



OPEN WATER SEASON



The map displays the Beaufort Sea region, including parts of the Canadian Arctic. Key geographical features labeled include Ellesmere Island, Devon Island, Somerset Island, and various bays and inlets such as Jones Sound, Lancaster Sound, and Regent Inlet. Sampling locations are marked with letters A through M. A legend indicates that yellow shading represents the 'Study Area' and blue shading represents 'Water'. The map also shows the 'Boundary of the Beaufort Sea' and the 'Boundary of the Canadian Arctic'.

November 16 - July 20

Zone 1 (strict protection)

Zone 2 (habitat protection)

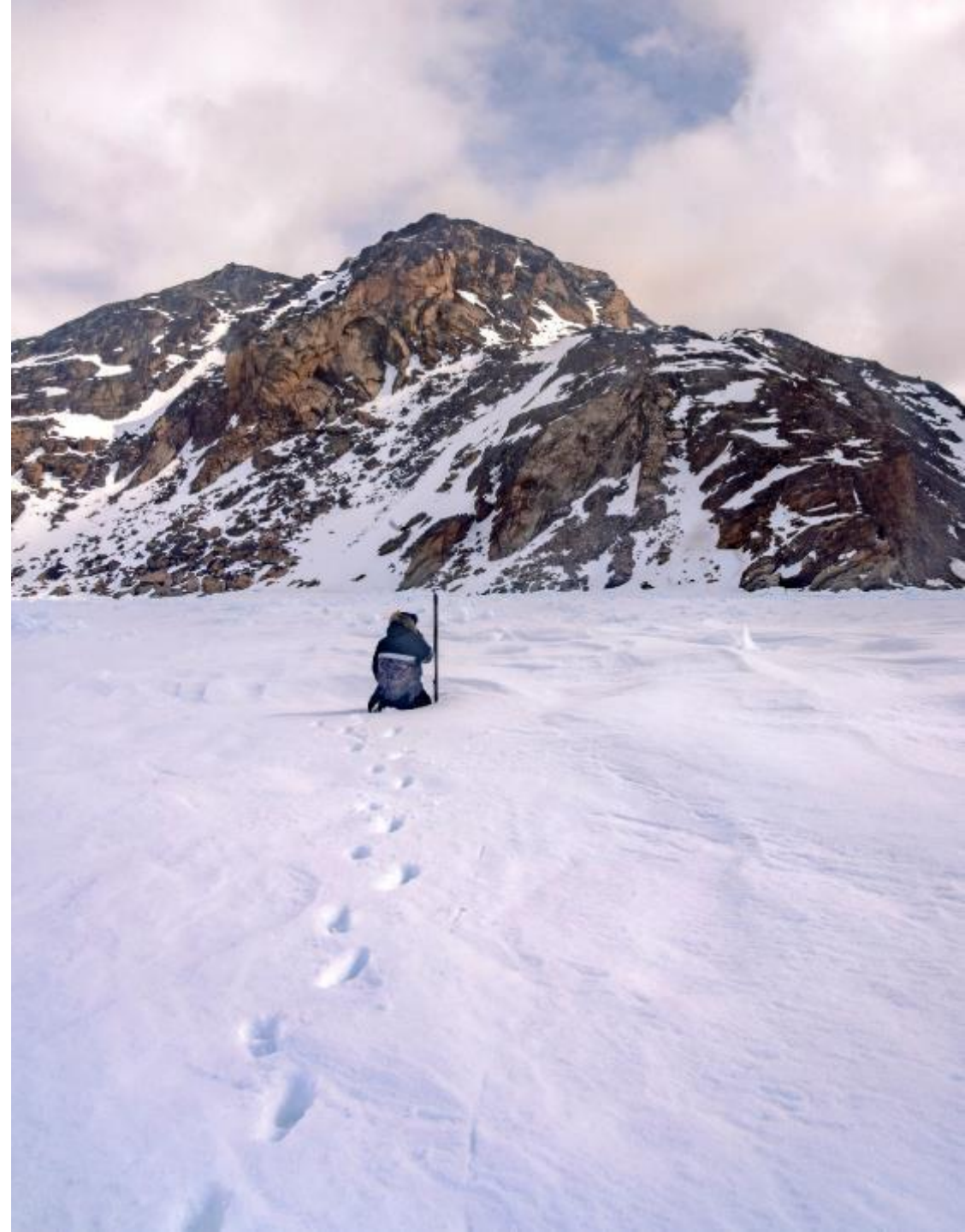
- Marine exclusion from Balaclava Inshore National Marine Conservation Area
- National Park

- Inland Gained Lands
- Natural Settlement Area
- Byler Island Mprator's Bird Sanctuary
- Outer landfast ice zone
- Lachlan Looming zone boundaries
- Northern Shipping Route

Habitat Code	Description
A	Woods of Massachusetts National Historic Site
B	Wetland forest
C	Swampy wetland
D	Significant forest area
E	Very wetland forest (swampy, critical habitat)
F	Very wetland forest



Zoning Walk Through

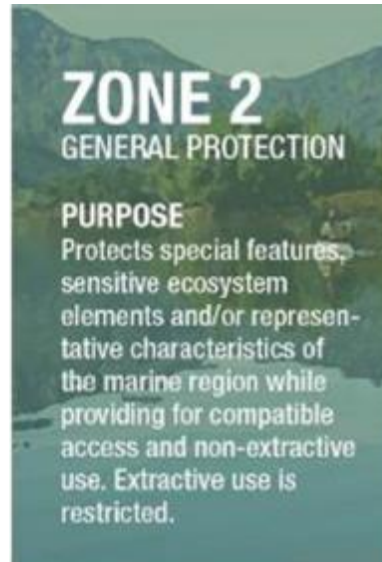


Zoning

A vertical rectangular panel with a brownish-orange background. At the bottom, there is a faint image of a whale breaching the water.

ZONE 1
STRICT PROTECTION

PURPOSE
Strictly protects special features and/or sensitive ecosystem elements that may be susceptible to disturbance. Access and extractive use are restricted.

A vertical rectangular panel with a greenish-blue background. At the bottom, there is a faint image of a coastal landscape with mountains and water.

ZONE 2
GENERAL PROTECTION

PURPOSE
Protects special features, sensitive ecosystem elements and/or representative characteristics of the marine region while providing for compatible access and non-extractive use. Extractive use is restricted.

A vertical rectangular panel with a blue background. At the bottom, there is a faint image of a small boat on the water.

ZONE 3
HABITAT PROTECTION

PURPOSE
Protects specific habitats while providing for compatible access and extractive uses. Some uses are restricted to support specific habitat conservation objectives.

A vertical rectangular panel with a blue background. At the bottom, there is a faint image of a sailboat on the water.

ZONE 4
MULTIPLE USE

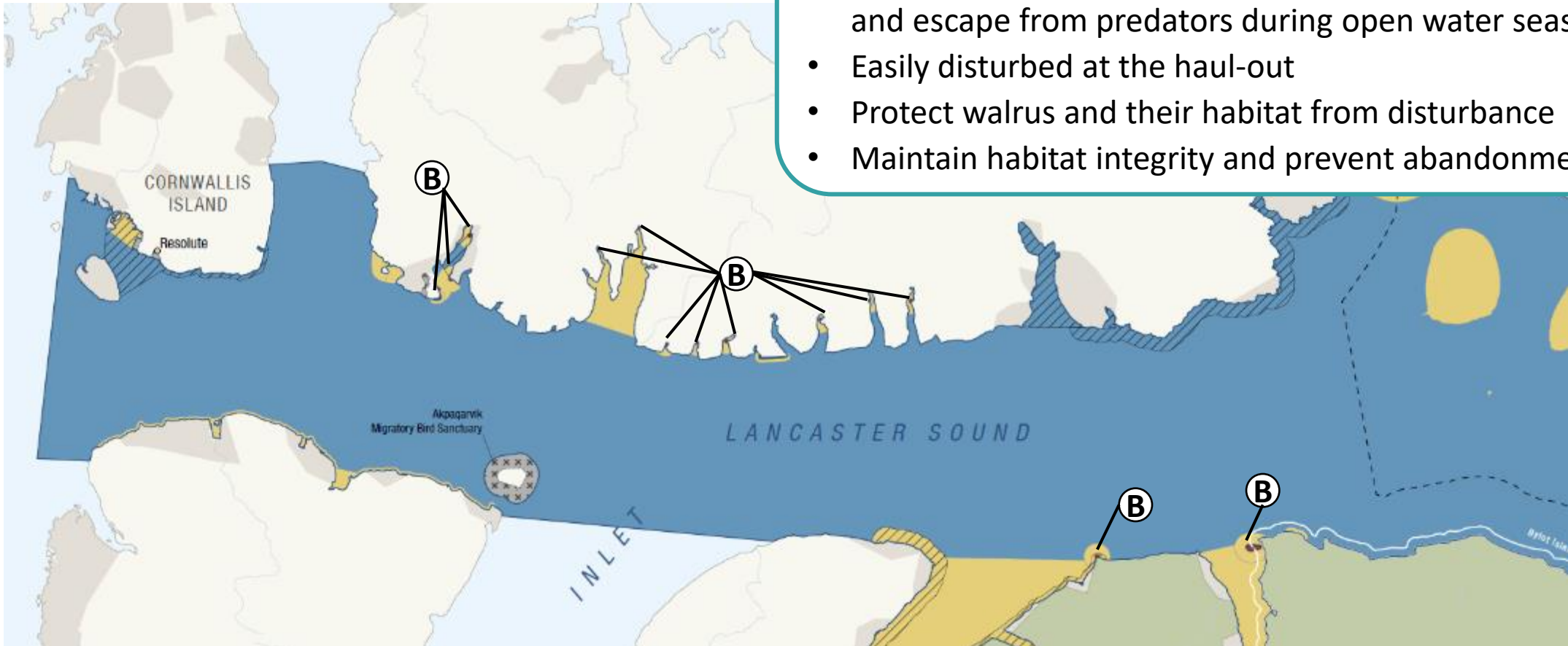
PURPOSE
Sustains the greatest range of uses that do not compromise ecological sustainability, cultural resources or heritage values.

Indigenous traditional use continues in all zones, consistent with Section 35 of the Constitution Act.*

Walrus haul-outs

What is protected and why

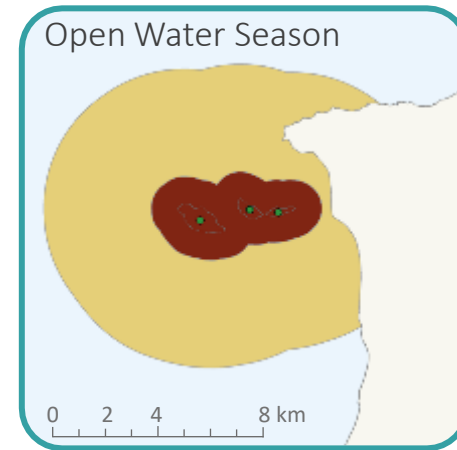
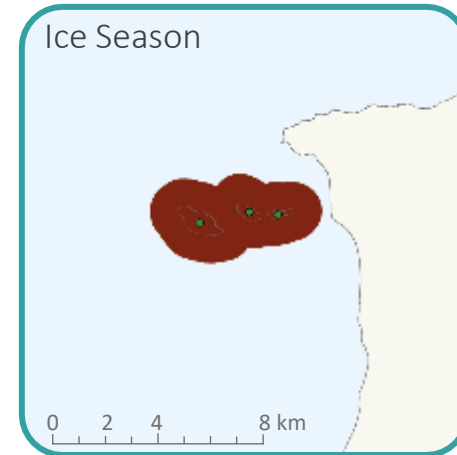
- 13 important walrus haul-out sites for resting, feeding and escape from predators during open water season
- Easily disturbed at the haul-out
- Protect walrus and their habitat from disturbance
- Maintain habitat integrity and prevent abandonment



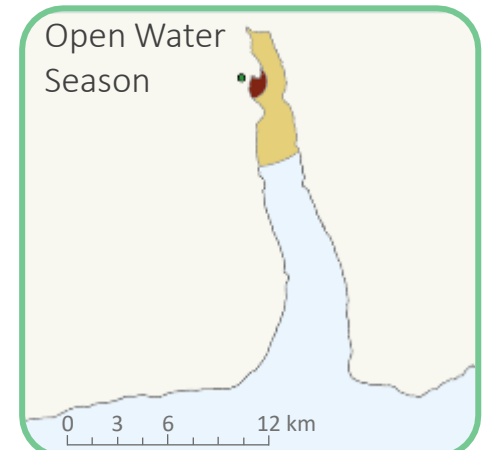
Walrus haul-outs

- Zoning for walrus haul-outs developed to mirror the requirements outlined in the 2023 Recommended Nunavut Land Use Plan, as recommended by the Qikiqtaaluk Wildlife Board
- **Zone 1 - Strict protection (year-round):**
 - **For Wollaston Islands:** No access on islands and in water a 1-km buffer around islands
 - **For all other haul-outs:** No access in water a 1-km buffer around haul-out
 - Some research and monitoring allowed
 - **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area
- **Zone 3 - Open water habitat protection:**
 - Buffer extending additional 4 km seawards
 - Prohibits commercial shipping, commercial and recreational fishing
 - Restriction based on vessel size for recreational and commercial tourism (see next slide)
 - Prohibits flying an aircraft at an altitude < 5 000 ft
 - Exceptions for research may apply through permitting process
 - **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area

Wollaston Islands



All other haul-outs



* Inuit traditional use, including hunting, fishing, trapping, and gathering **can continue** in all areas and zones of Tallurutiup Imanga NMCA

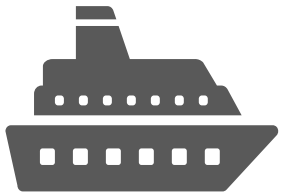
Walrus haul-outs



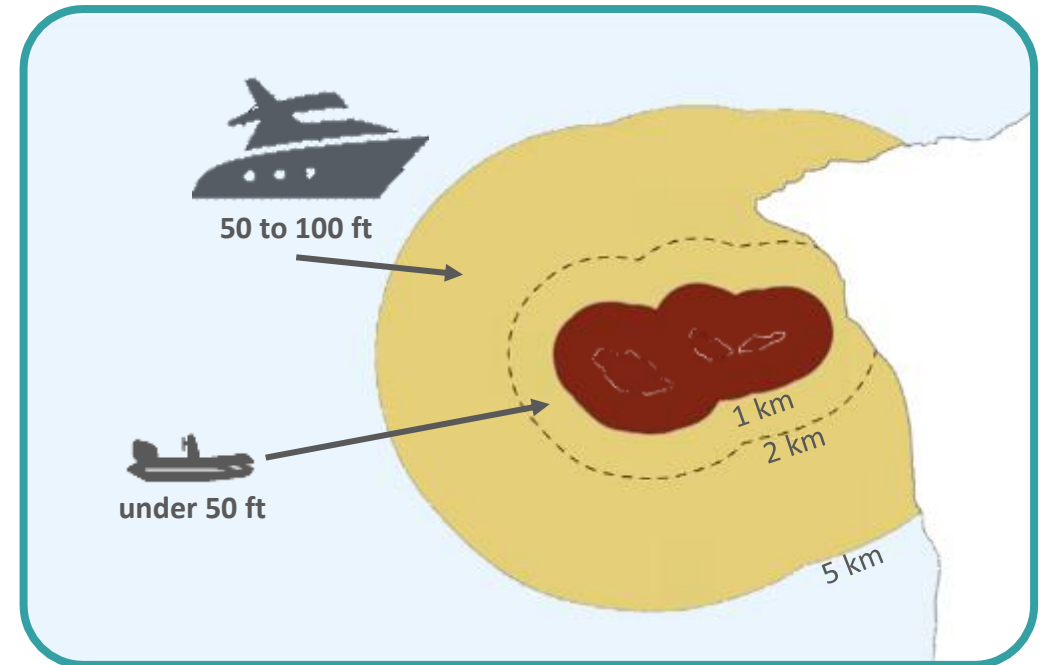
- **< 50 ft:** may navigate anywhere within the zone 3 area (e.g. kayaks, zodiacs)



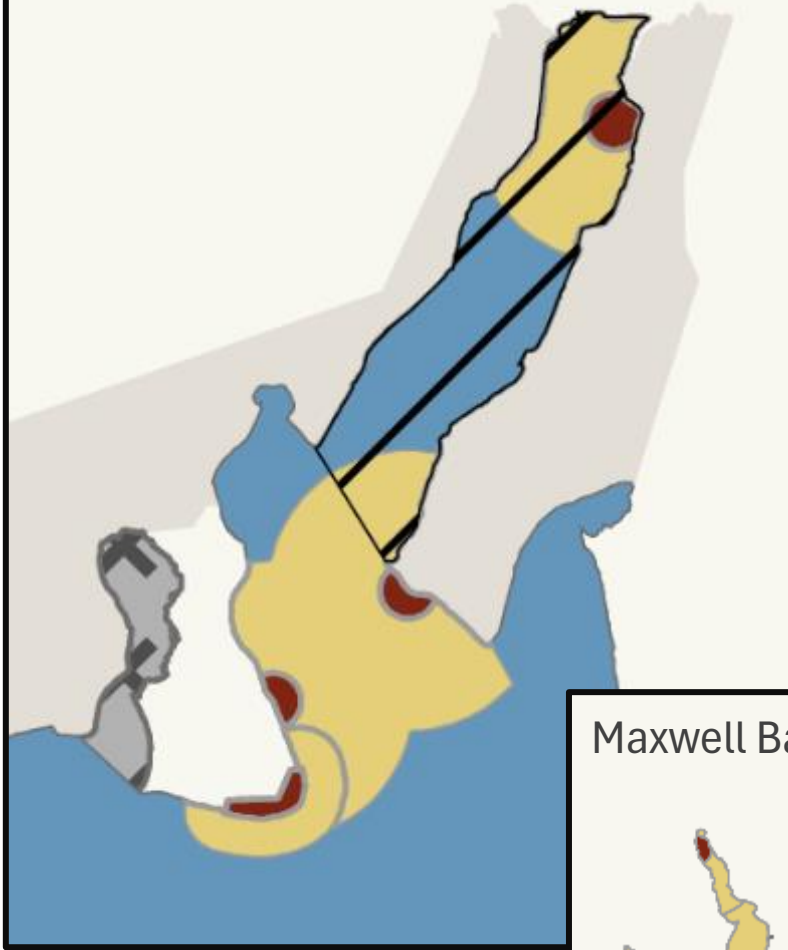
- **50 - 100 ft:** may enter the zone 3 area but must always remain at least 2 km from the haul-out



- **>100 ft:** prohibited from accessing or transiting through these zone 3 areas



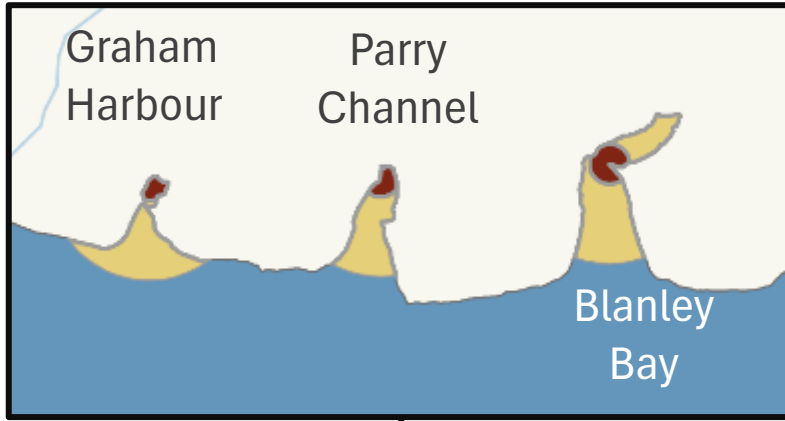
Radstock Bay



Graham Harbour

Parry Channel

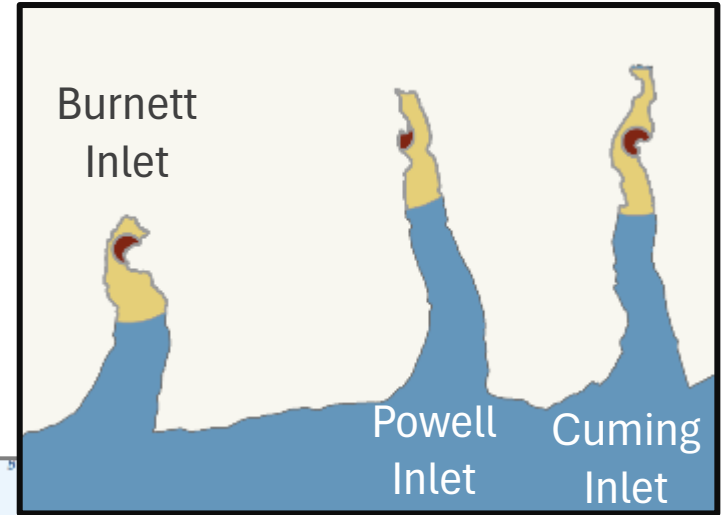
Blanley Bay



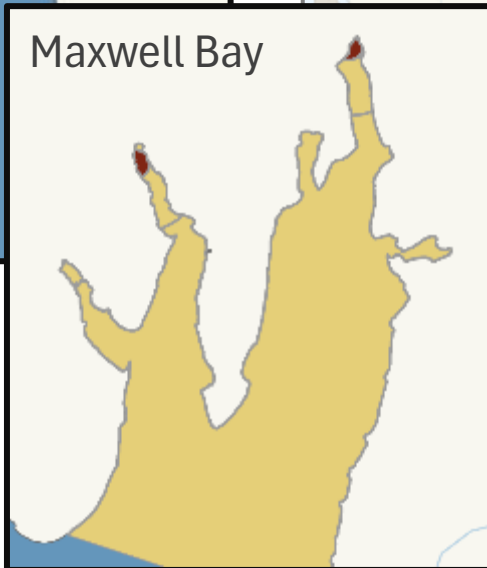
Burnett Inlet

Powell Inlet

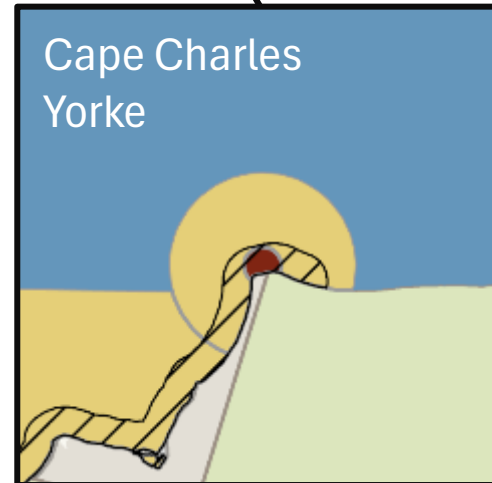
Cuming Inlet



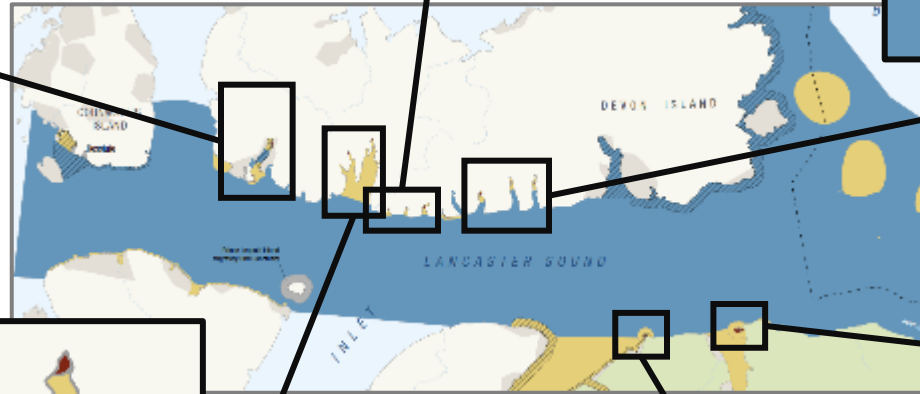
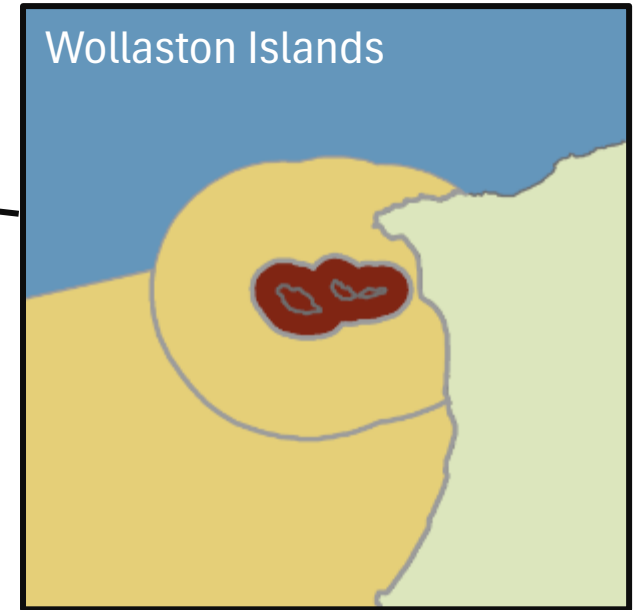
Maxwell Bay



Cape Charles
Yorke



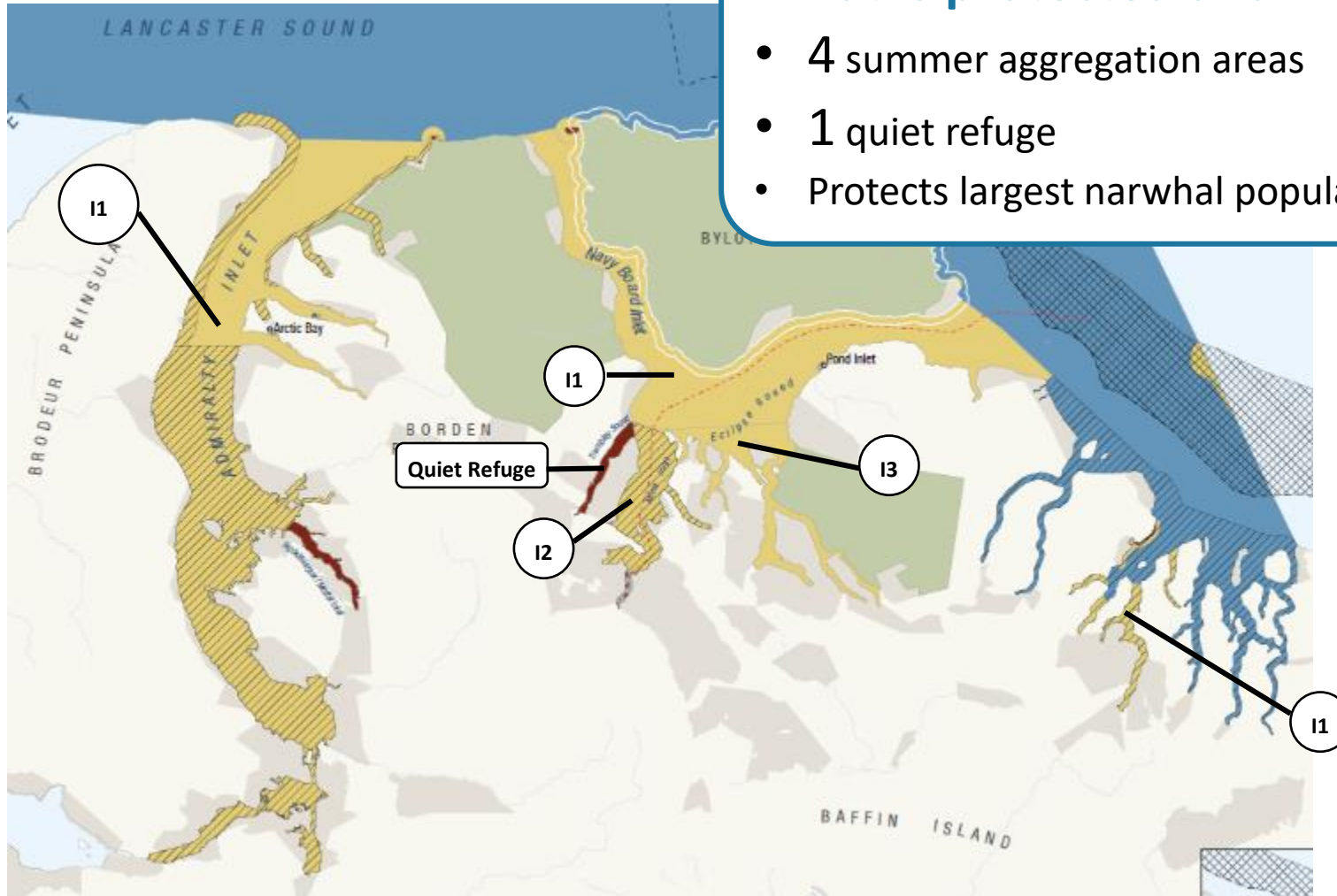
Wollaston Islands



Narwhal habitat

What is protected and why

- 4 summer aggregation areas
- 1 quiet refuge
- Protects largest narwhal population in the world



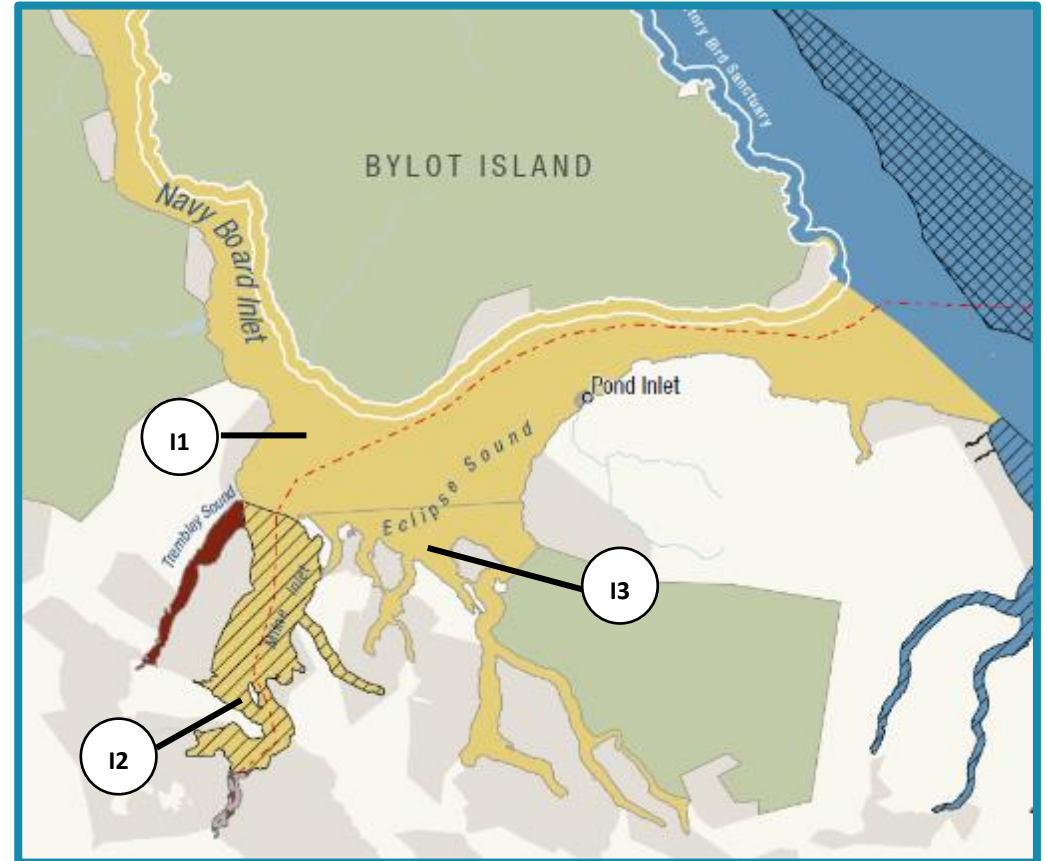
Narwhal habitat

- **Zone 1 - Strict protection:**

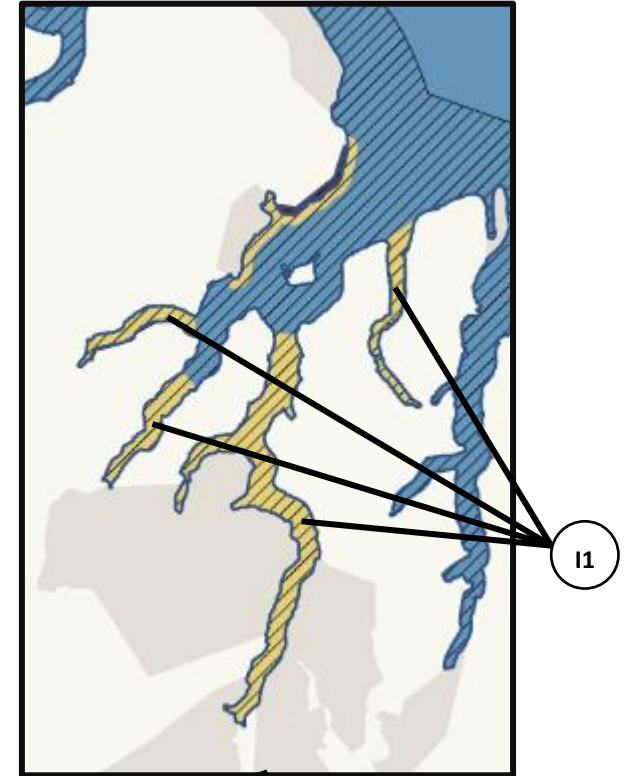
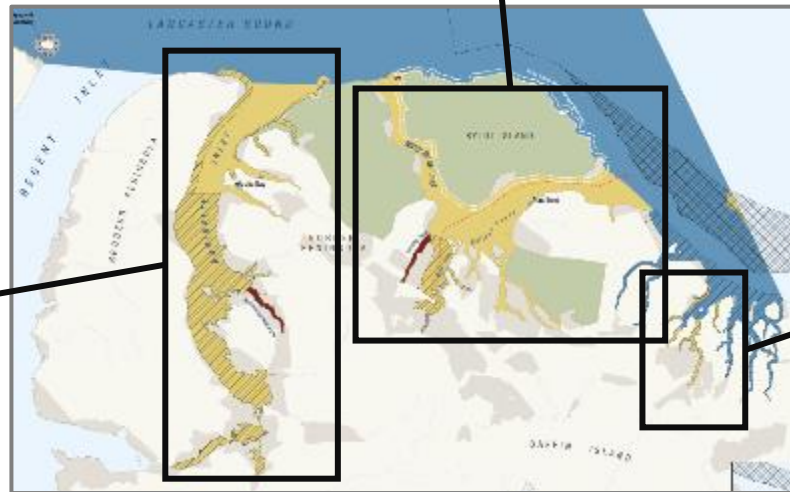
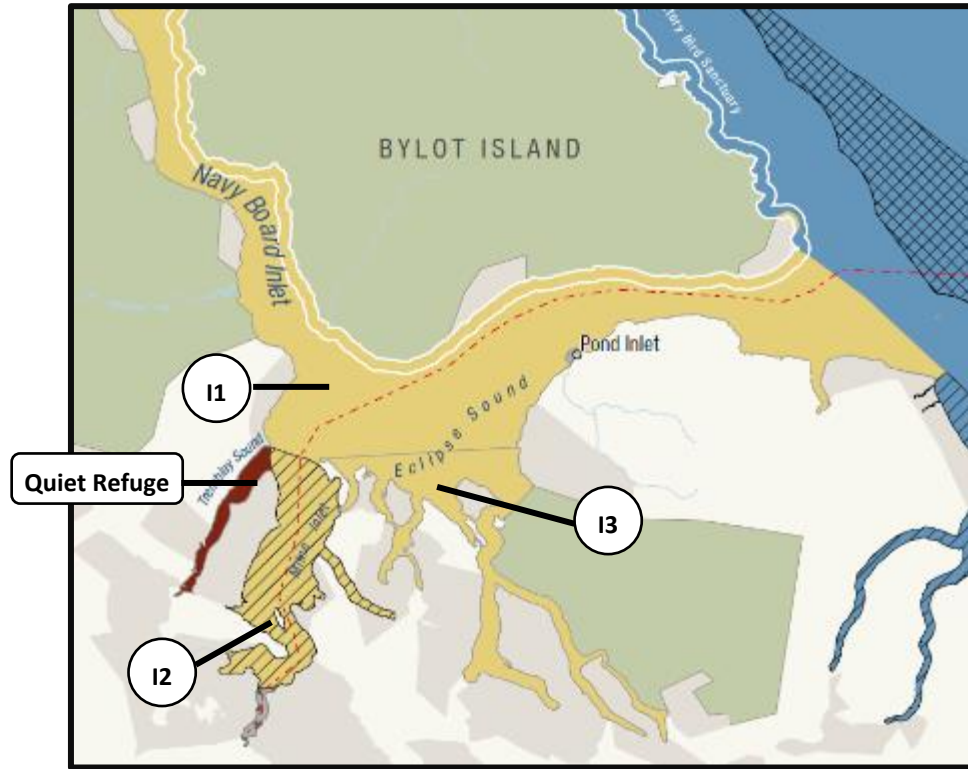
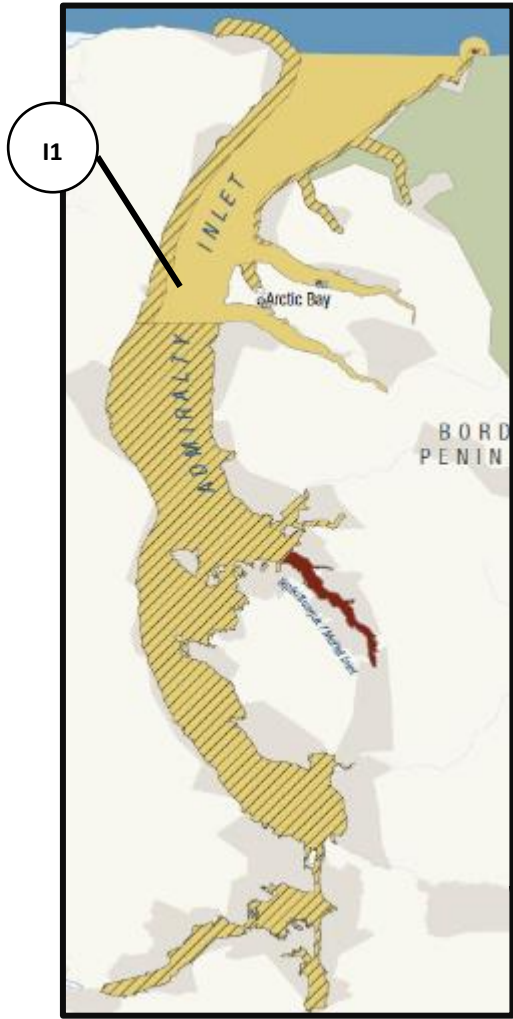
- No access to Trembley Sound during open water season; quiet refuge
- Some research and monitoring allowed
- **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area

- **Zone 3 - Open water habitat protection:**

- Speed limit of 9 knots for all vessels over 300 tons
- Cruise ships prohibited in Milne Inlet (I2) and southern fiords of Eclipse Sound (I3)
- Commercial ships prohibited in southern fiords of Eclipse Sound (I3)
- **Harvesting restrictions:** All non-Inuit* bottom contact fishing gear is prohibited in area



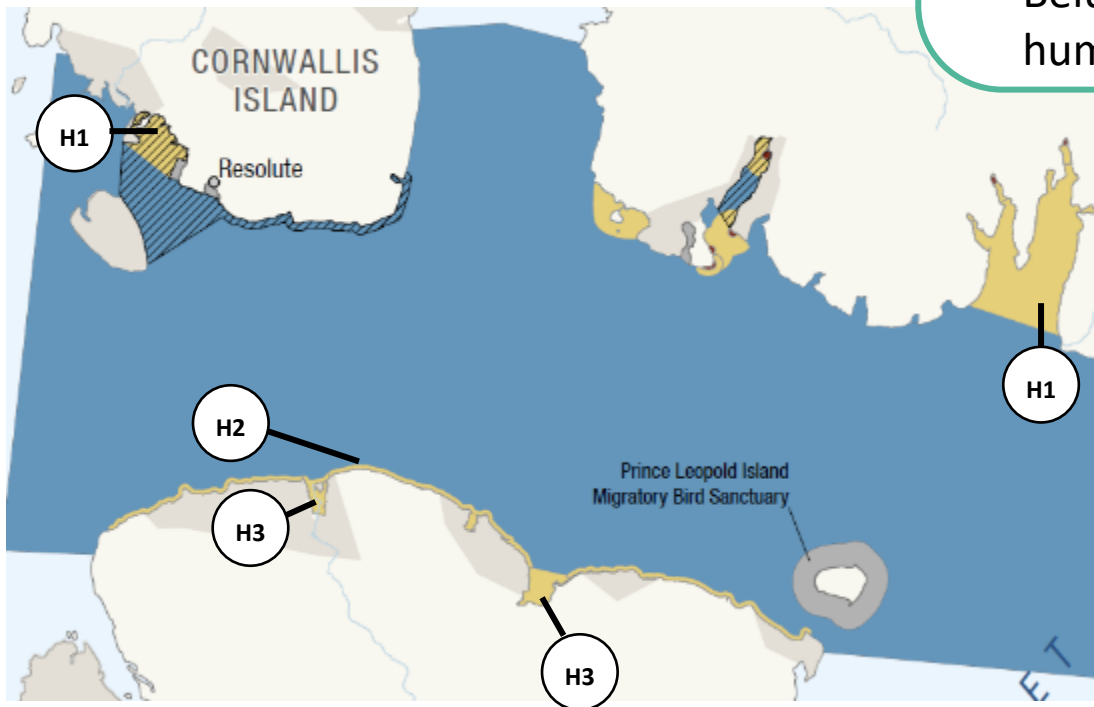
* Inuit traditional use, including hunting, fishing, trapping, and gathering **can continue** in all areas and zones of Tallurutiup Imanga NMCA



Beluga habitat

What is protected and why

- 4 shallow estuaries known to be important beluga nursery and molting grounds used yearly
- 1-km strip stretching along the entire northern coast of Somerset Island, and important aggregation area
- Belugas are disturbed by underwater noise from some human activities



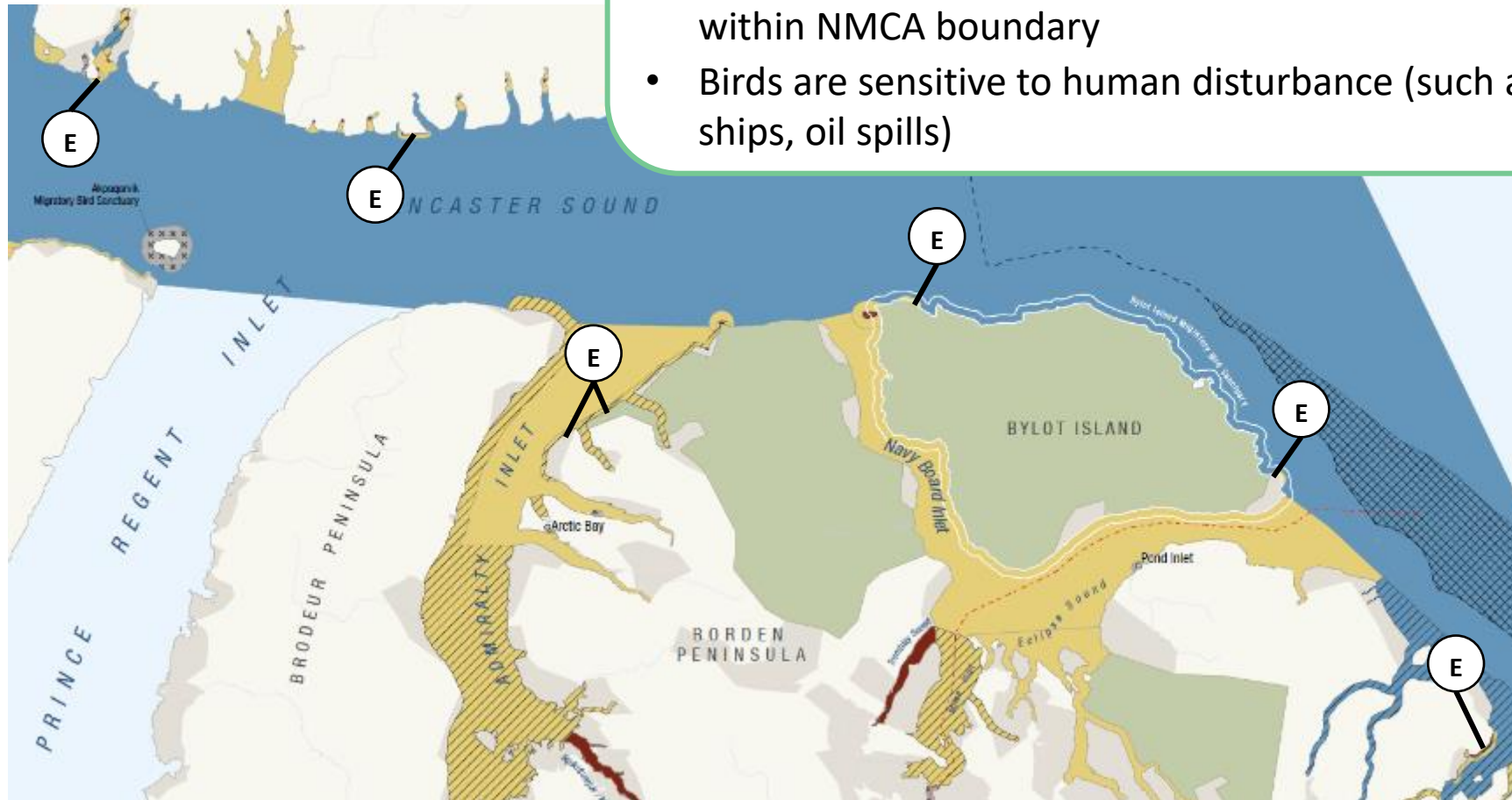
Zone 3 - Open water habitat protection:

- Prohibits flying an aircraft at an altitude < 5 000 ft
- No commercial shipping
- No commercial fisheries
- No new of coastal or in-water infrastructure (H1 & H3)
- H3 – Kippaarittuq/Cunningham Inlet and Garnier Bay
 - No motorized access
- H1 – Maxwell Bay and Allen Bay
 - Motorized access for tourism and recreation allowed
- H2 – Northern coast of Somerset Island
 - Motorized access for small vessels only
 - Small scale coastal and in-water infrastructure for tourism or recreation allowed
- **Harvesting restrictions:** Non-Inuit* hunting, gathering, trapping as well as commercial fishing prohibited in area

Seabird colonies

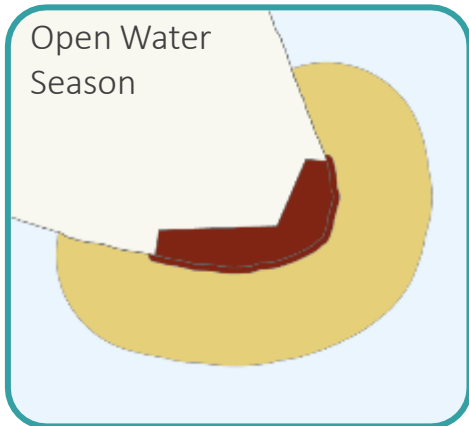
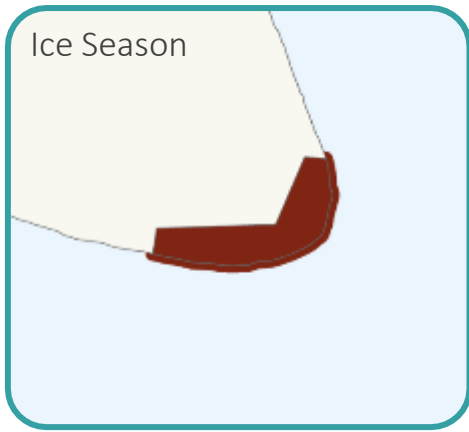
What is protected and why

- 6 key migratory bird habitat sites for nesting, chick rearing, and foraging
- For 3 of these sites, terrestrial coastal cliffs included within NMCA boundary
- Birds are sensitive to human disturbance (such as from ships, oil spills)

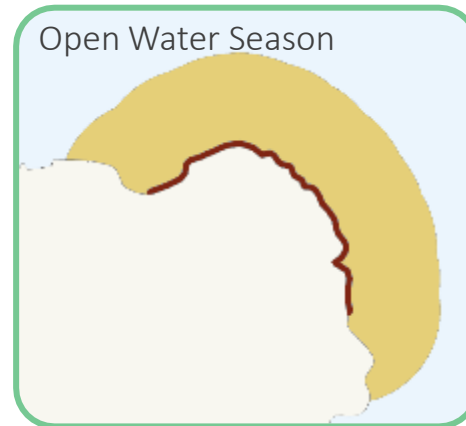
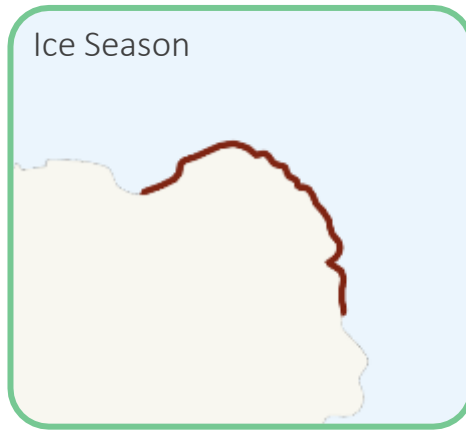


Seabird colonies

Terrestrial colony Included in NMCA



Terrestrial colony Excluded from NMCA



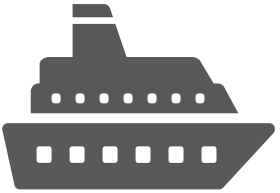
- **Zone 1 - Strict protection:**
 - No access to 100-m buffer from cliff for all 6 sites
 - No access to 3 nesting cliffs located within NMCA boundary
 - Some research and monitoring allowed
 - **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area
- **Zone 3 - Open water habitat protection:**
 - Buffer extending additional 1.5 km seawards
 - Prohibits commercial fishing, commercial shipping and transiting vessels
 - Restriction based on vessel size for recreational and commercial tourism, and recreational fishing (see next slide)
 - 500-m setback for community resupply vessels when birds present
 - Prohibits flying an aircraft at an altitude < 3 500 ft
 - Additional aerial, marine and terrestrial migratory bird setbacks may apply
 - **Harvesting restrictions:** Non-Inuit* hunting, gathering, trapping as well as commercial fishing prohibited in area

* Inuit traditional use, including hunting, fishing, trapping, and gathering **can continue** in all areas and zones of Tallurutiup Imanga NMCA

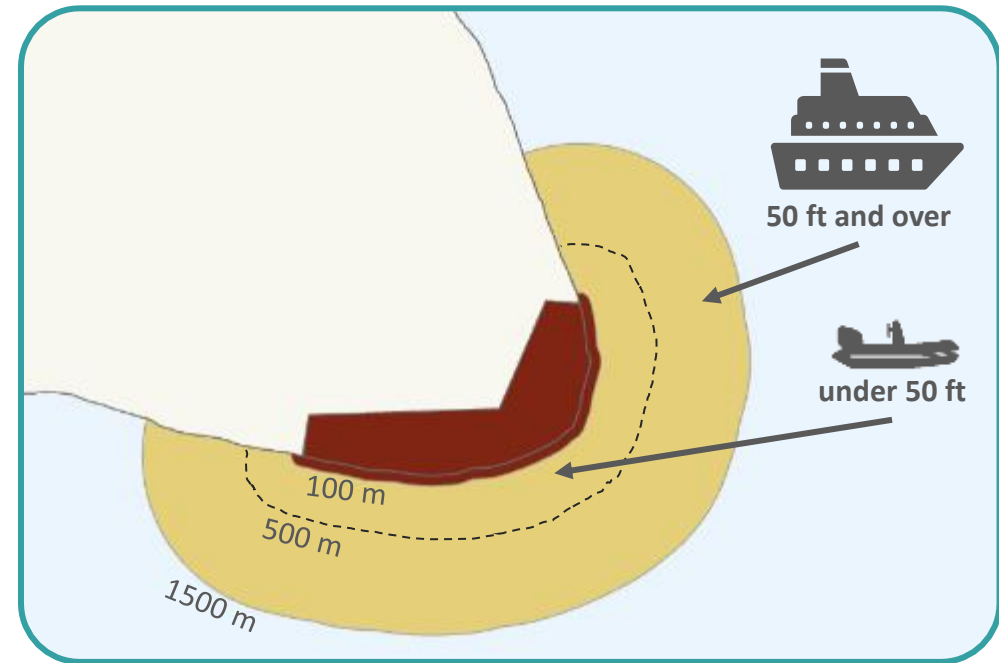
Seabird colonies

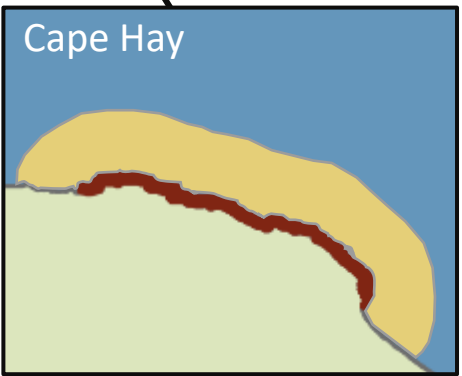
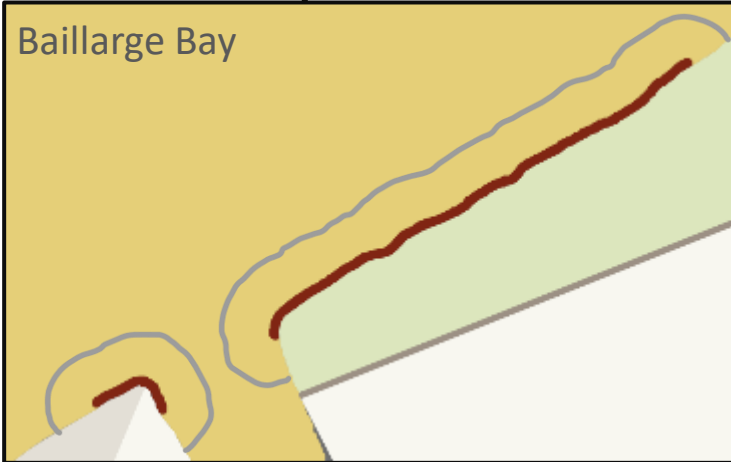
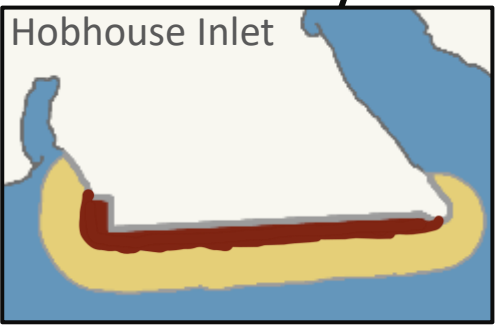
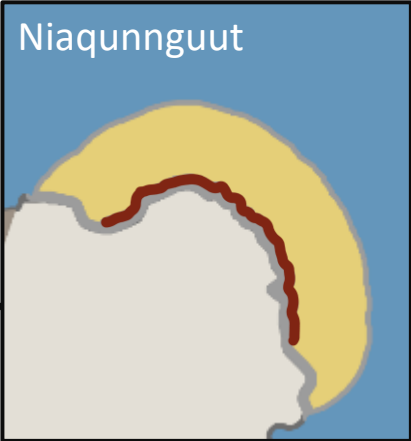
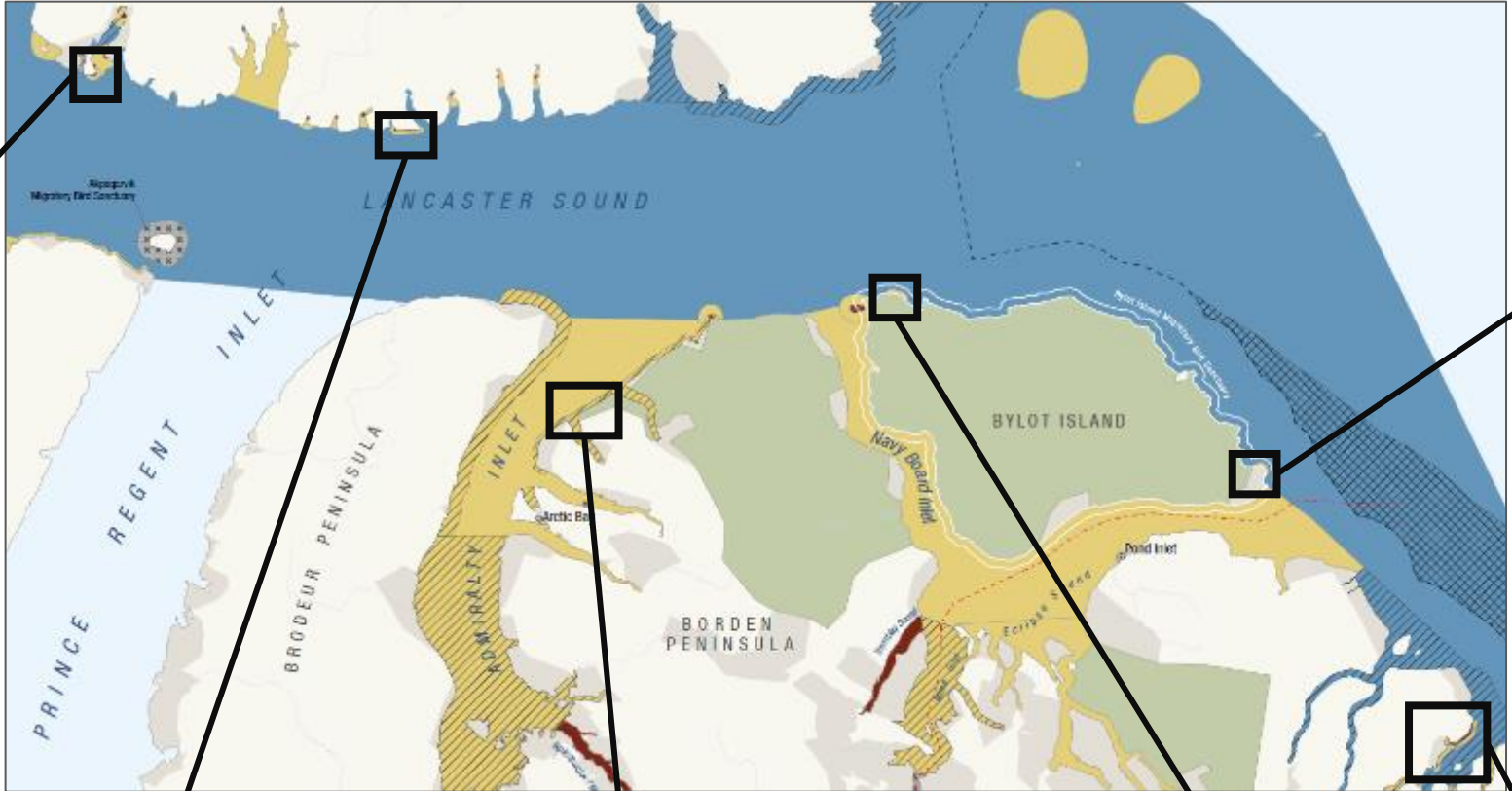
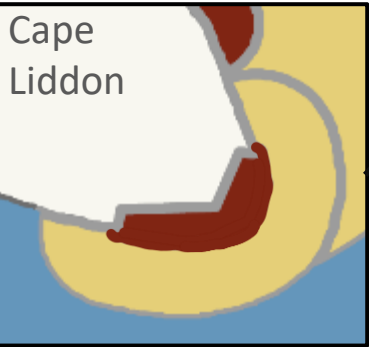


- **< 50 ft:** may navigate anywhere within the zone 3 area (e.g. kayaks, zodiacs)

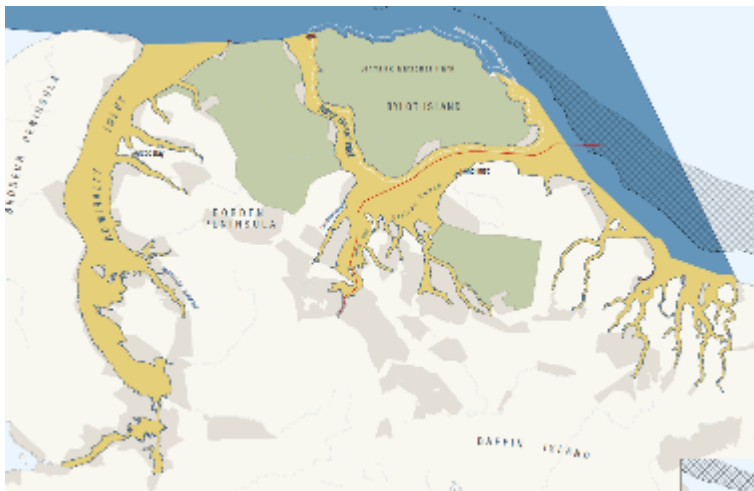
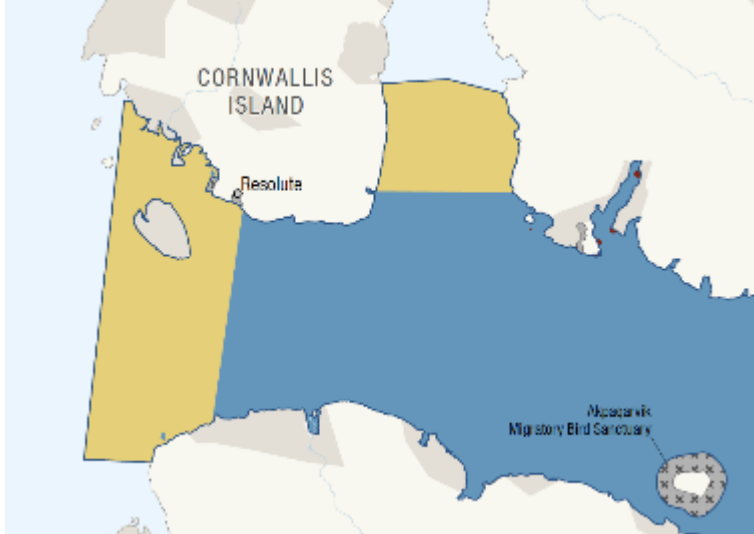


- **> 50 ft:** authorized commercial tourism vessels (e.g. cruise ships) may enter zone 3 area but must always remain at least 500 m from the colony





Sea ice habitat



What is protected and why

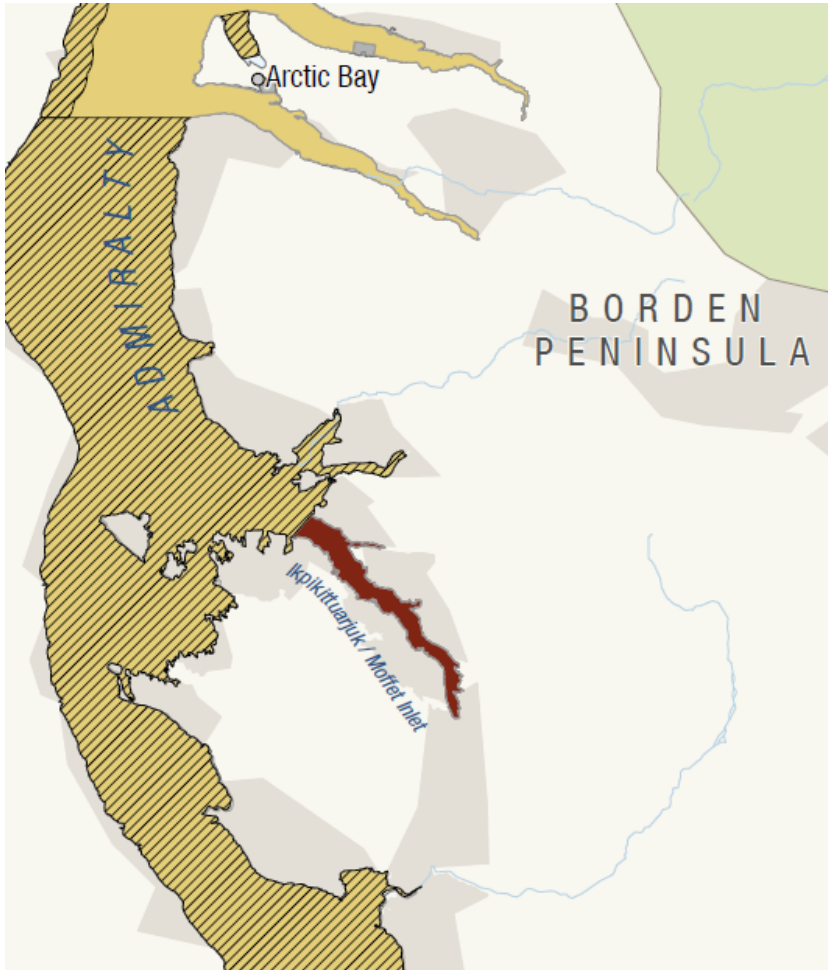
- Peary caribou ice crossings (critical habitat)
- Important habitat for wildlife (e.g., seals, polar bears)
- Valued by communities as on-ice travel routes and hunting grounds

Zone 3 – Ice season habitat protection:

- All shipping and cruise ship activity is prohibited from Nov. 16 to Jul. 20 except for:
 1. General exceptions to zoning*;
 2. Shipping activity in project approved on or before the date Tallurutiup Imanga is established (project certificate terms and conditions apply)
 3. Valid conservation reasons that are assessed on a case-by-case basis (for example to free trapped whales).
- The dates the prohibition apply may be varied under certain conditions
- **Harvesting restrictions:** Bottom contact fishing gear is prohibited in area

* Inuit traditional use and access; National security or sovereignty, defense, law enforcement activities; Safety and emergency response activities; Community resupply; Vessels engaged in innocent passage without stopping

Ikpikittuarjuk / Moffet Inlet



What is protected and why

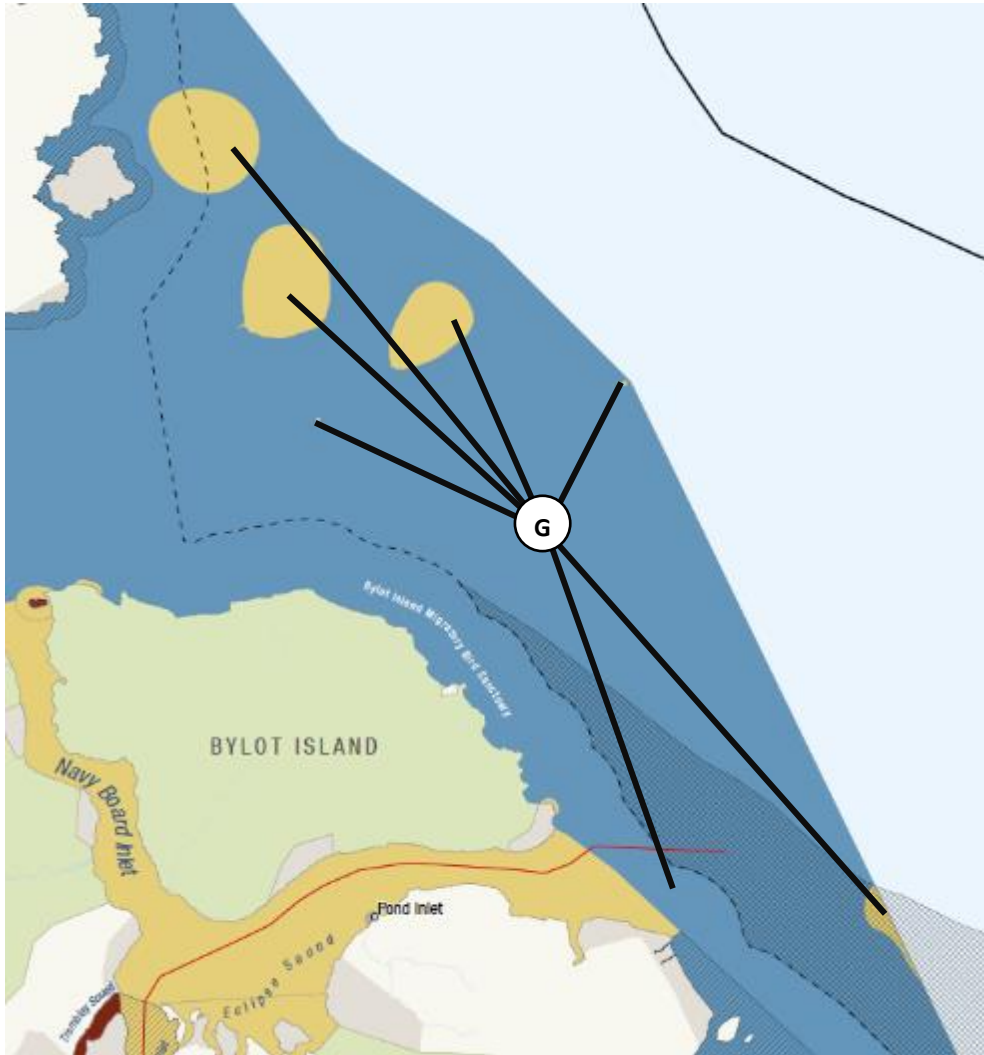
- Valued by local communities
- Abundance of bowhead, narwal, walrus and char
- Concern around decline in char population

Zone 1 - Strict protection:

- No access during open water season
- Some research allowed
- **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area

* Inuit traditional use, including hunting, fishing, trapping, and gathering **can continue** in all areas and zones of Tallurutiup Imanga NMCA

Significant benthic Areas



What is protected and why

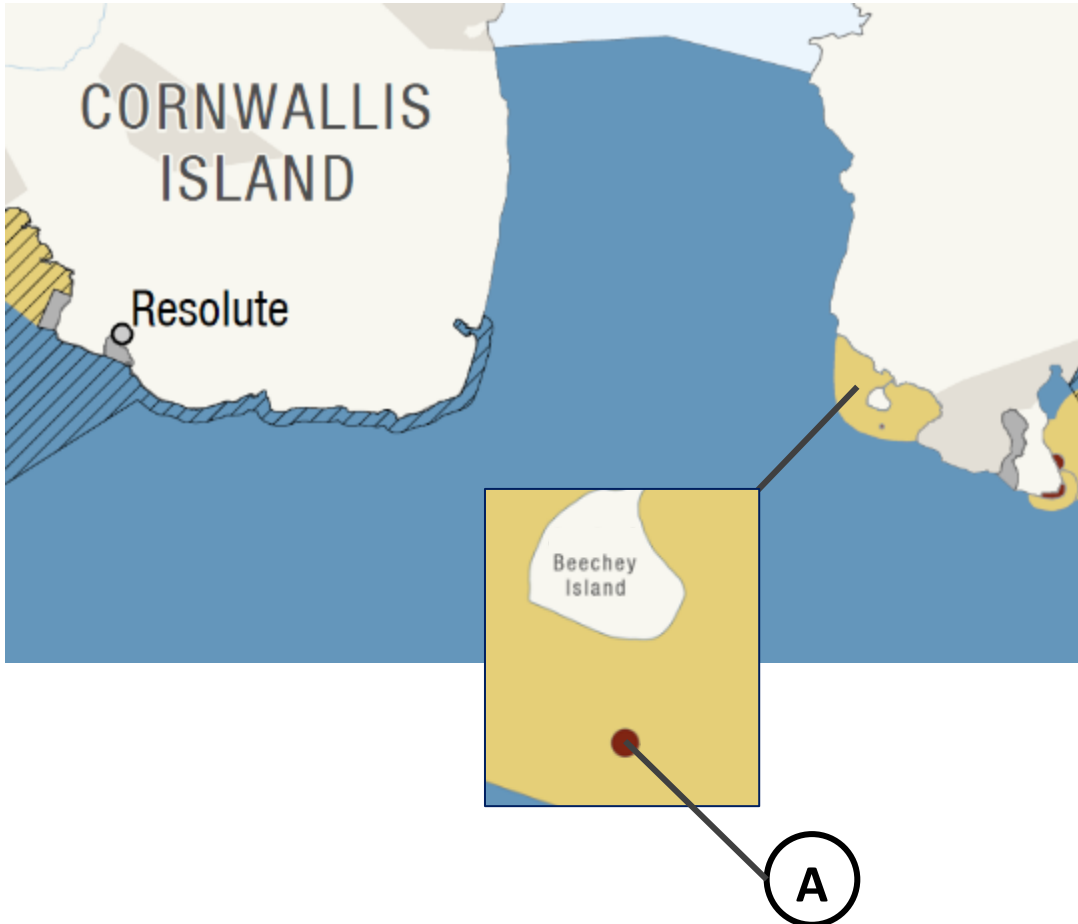
- 7 important sea floor habitat areas for many species
- Special habitat due to sea pens, a type of coral
- Disturbing the sea floor can remove or damage these sea pens

Zone 3 – Open water habitat protection

- No mobile bottom contact fishing gear allowed
- No infrastructure installed on the sea floor
- **Harvesting restrictions:** Bottom contact fishing gear is prohibited in area



Wreck of Breadalbane



What is protected and why

- Remains of a ship that was involved in the search for Captain John Franklin's lost expedition.
- Protect sensitive cultural resources by limiting further damage to the wreck

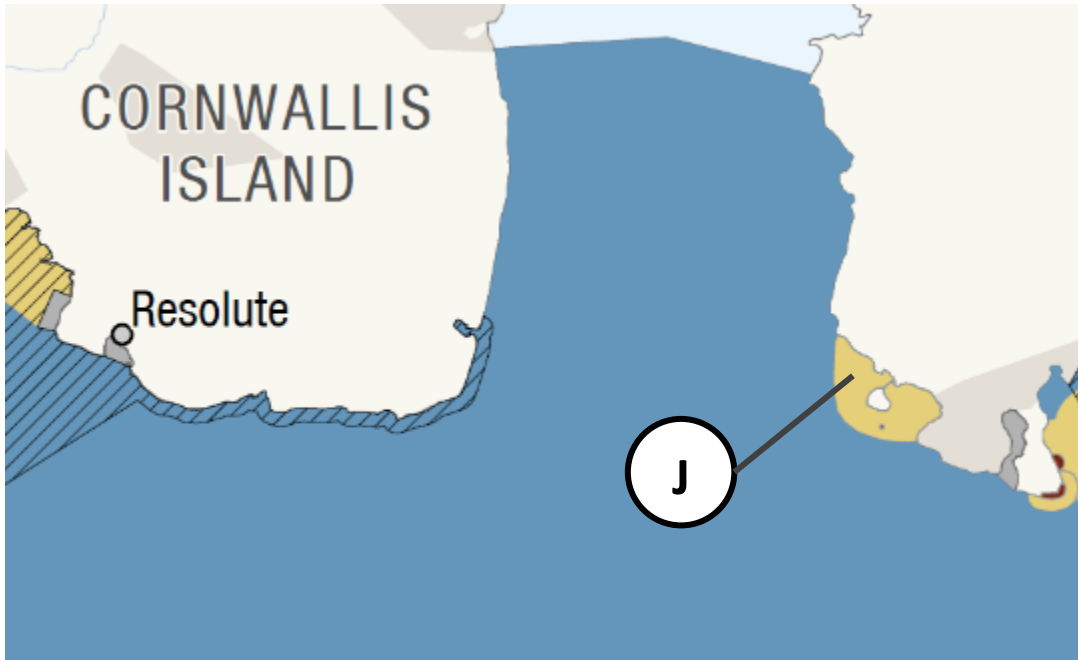
Zone 1 - Strict protection:

- No access 250-m radius circle centered on the mid-point of the hull
- Mobile bottom contact gear prohibited
- **Harvesting restrictions:** All non-Inuit* harvesting prohibited in area



* Inuit traditional use, including hunting, fishing, trapping, and gathering **can continue** in all areas and zones of Tallurutiup Imanga NMCA

Underwater cultural resource area



What is protected and why

- Known cultural resources in the shallow waters surrounding Beechey Island
- To protect known and potential cultural resources

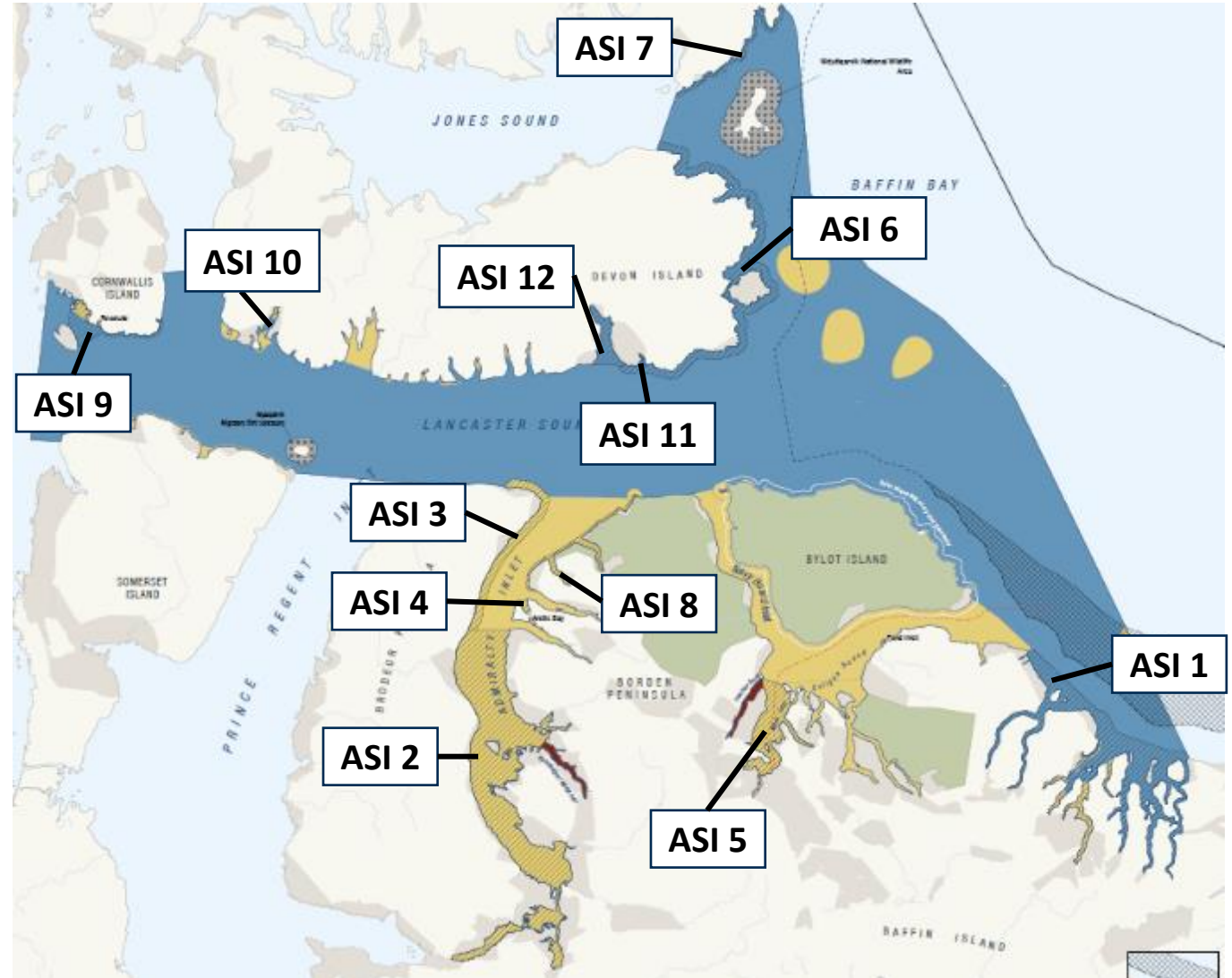
Zone 3 – Open water habitat protection

- Diving and submersible use are prohibited
- **Harvesting restrictions:** Bottom contact fishing gear is prohibited in area

Areas of Special Importance (ASI)

Important to Inuit cultural practices, more flexibility to adapt to changing conditions and patterns of use.

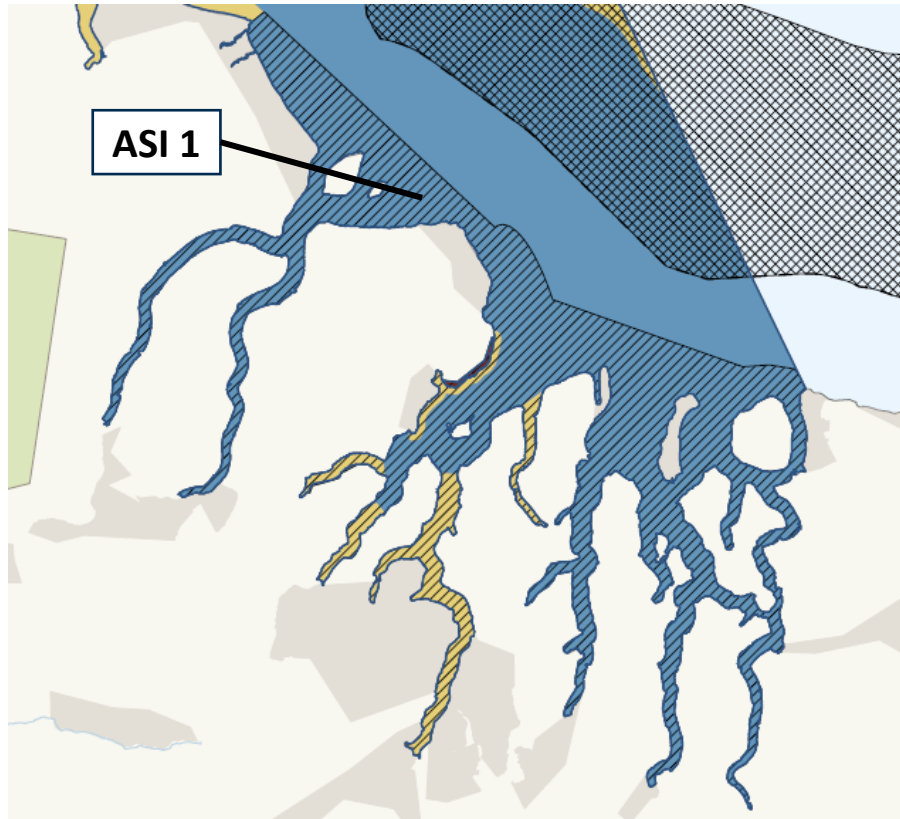
1. Fjords North of Clyde River
2. South Admiralty Inlet
3. Strip along shore of Brodeur Peninsula
4. Victor Bay
5. Milne Inlet
6. Southeast and northeast coast of Devon Island
7. Southeast coast of Ellesmere Island
8. North shore of Borden Peninsula
9. Resolute passage and Cornwallis Island coast
10. Radstock Bay
11. Dundas Harbour
12. Croker Bay



Areas of Special Importance

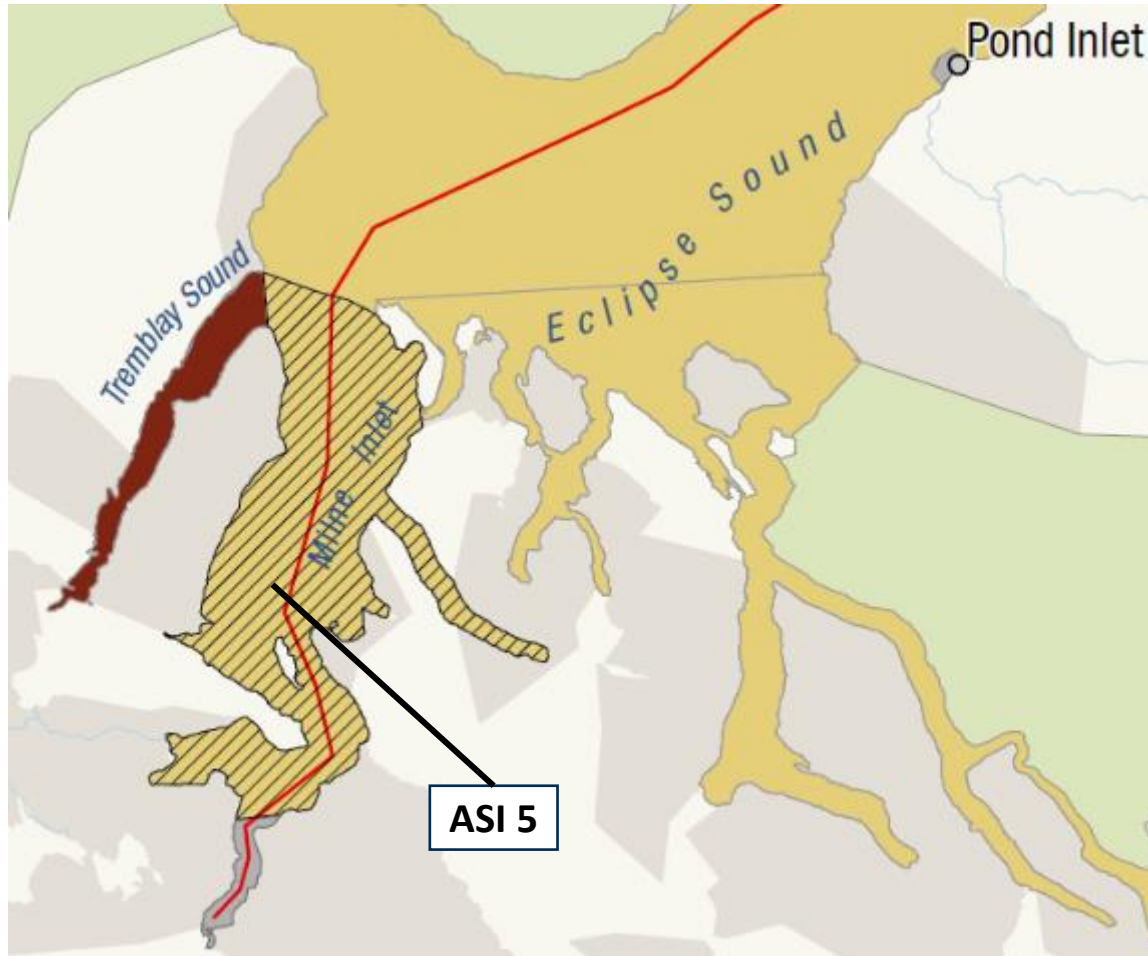
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ASI 1: Fjords North of Clyde River



- Visitor orientation.
- Visitors requested to hire local guide.
- Support enhanced communication between communities and other users to respect communities
- Ships requested not to travel into northern fiords.
- Up to 3-week closure beginning of open water season to protect community harvest in the southern fiords
- Zoning applies.

ASI 5: Milne Inlet



- Visitor orientation.
- Visitors encouraged to hire local guide.
- Support enhanced communication between communities and other users to respect communities
- Speed limit of 9 knots for vessels over 300 tons.
- Zoning applies: No cruise ships (narwhal protection).

NWMB Approval



For NWMB Approval

Section 5.2.34 (c)

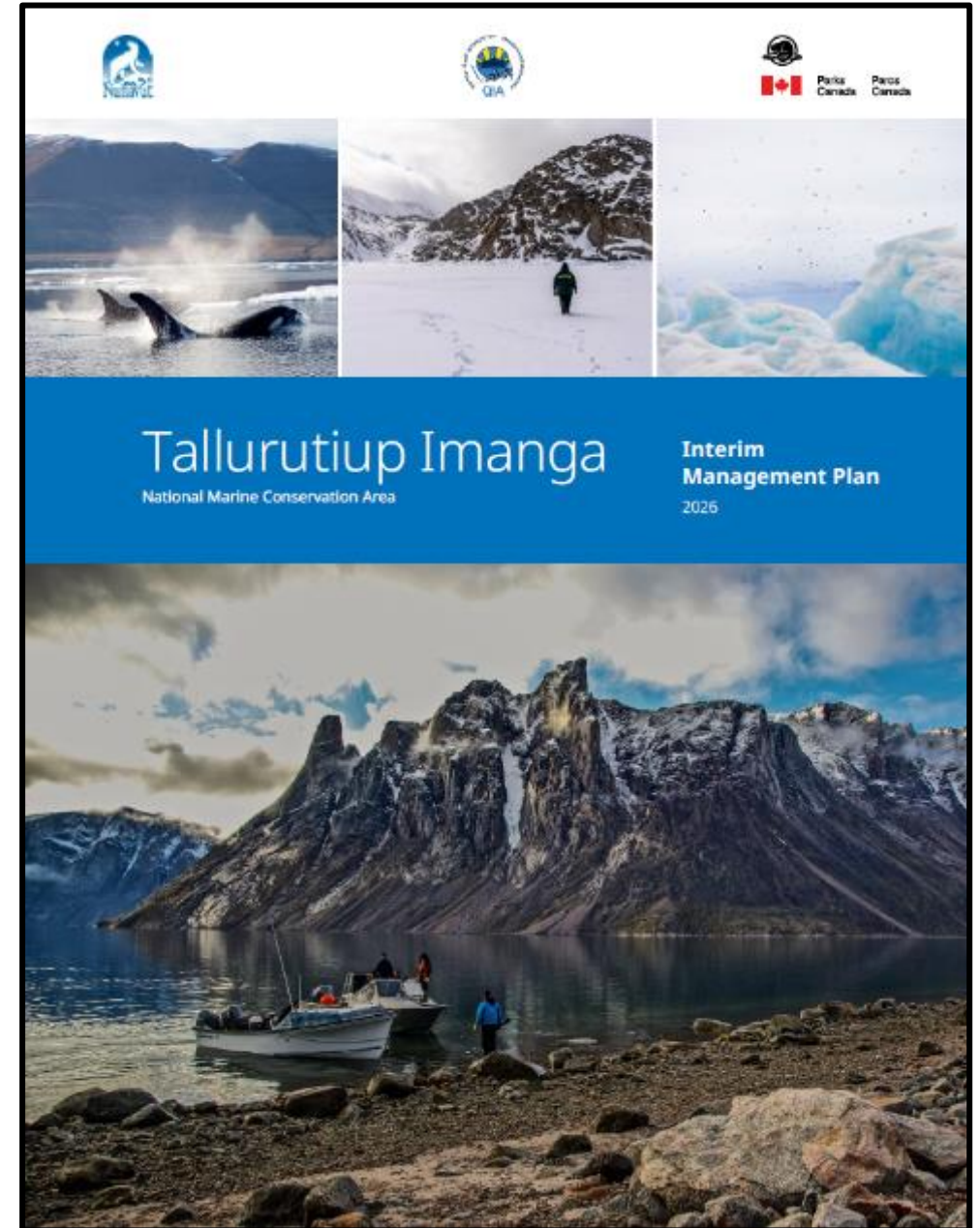
(c) approve plans for management and protection of particular wildlife habitats including areas within Conservation Areas, Territorial Parks and National Parks;

- ☐ Approve the Interim Management Plan for Tallurutiup Imanga NMCA

Section 5.6.48 - Non-Quota Limitations

Subject to the terms of this Article, the NWMB shall have sole authority to establish, modify or remove, from time to time and as circumstances require, non-quota limitations on harvesting in the Nunavut Settlement Area.

- ☐ Approve non-Inuit limitations on harvesting in Zones 1 and 3



Zone 1 – Ice and Open Water Season

Not allowed

= Limitation on Harvesting
for non-Inuit*

***Access and extractive uses are prohibited throughout all Zone 1 areas for non-Inuit**

	Wreck of Breadalbane NHS of Canada	Walrus haul-out sites	Seabird colonies	Ikpikittuarjuk/ Moffet Inlet	Tremblay Sound
Recreational fishing	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Commercial fisheries	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Hunting, trapping, gathering (non-rights based)	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
Bottom trawling	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

**No restriction on sport hunting as per the Tallurutiup Imanga IIBA*

Zone 3 – Ice Season

Not allowed

=

**Limitation on Harvesting
for non-Inuit****

	Peary Caribou sea ice crossings*	Other key sea ice habitat*	Significant Benthic Areas
Recreational fishing	Allowed	Allowed	Allowed
Commercial fisheries	Allowed	Allowed	Allowed
Hunting, trapping, gathering (non-rights based)	Allowed	Allowed	Allowed
Bottom trawling	Not allowed	Not allowed	Not allowed

*Commercial shipping is not allowed

***No restriction on sport hunting as per the Tallurutiup Imanga IIBA*

Zone 3 – Open Water Season

Not allowed

= Limitation on Harvesting
for non-Inuit *

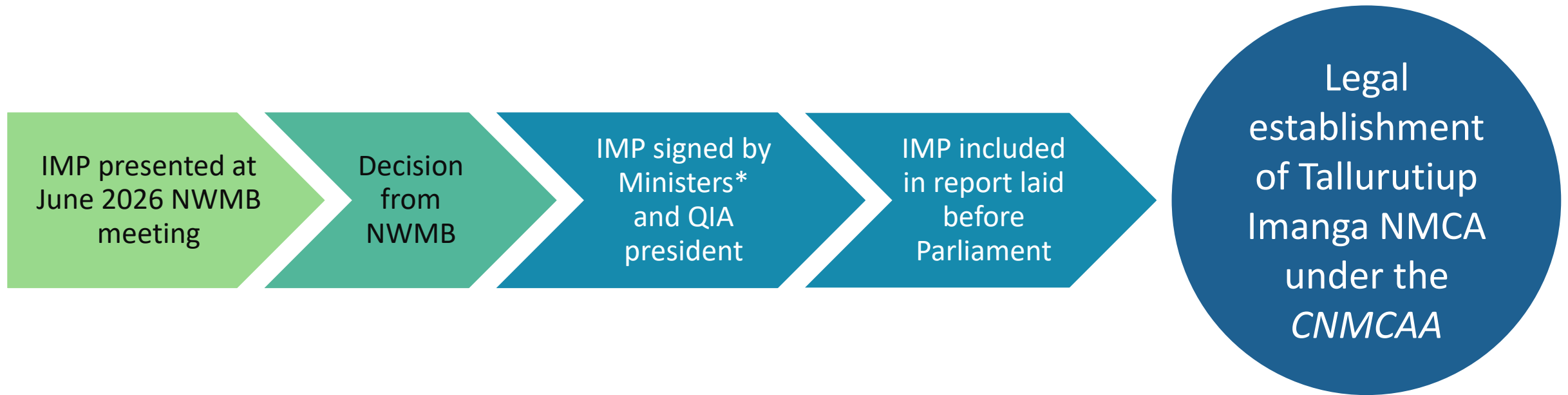
	Walrus haul-out buffer	Seabird colony buffers	Significant Benthic Areas	Beluga summer aggregation areas	Narwhal summer aggregation areas	Underwater cultural resource area
Recreational fishing	Not allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Commercial fisheries	Not allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed
Hunting, trapping, gathering (non-rights based)	Not allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed
Bottom trawling	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed

**No restriction on sport hunting as per the Tallurutiup Imanga IIBA*

Next Steps



Next Steps in the process



*For the Government of Canada: Minister of Environment, Climate Change and Nature; Minister of Transport; Minister of Fisheries.
For the Government of Nunavut: Minister of Environment.

Contact

tallurutiupimanga@pc.gc.ca



Qikiqtani Inuit Association
Justin Buller - jfbuller@dryasconsulting.ca



Government of Nunavut
environment@gov.nu.ca | 1-867-975-7700

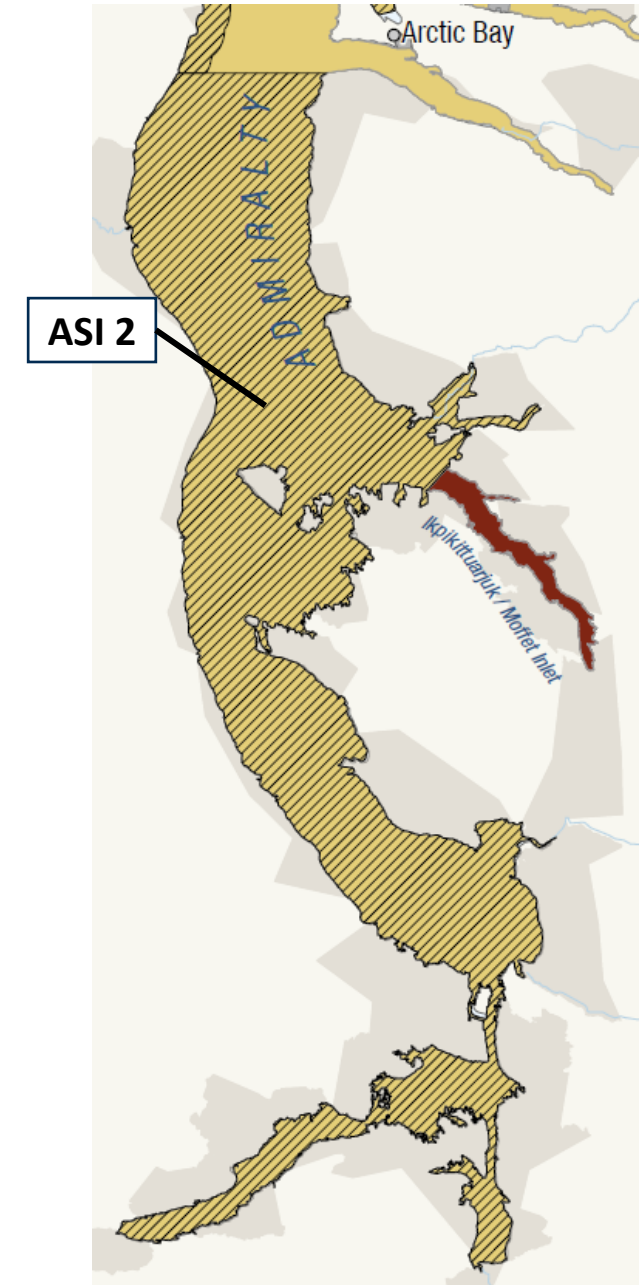


Parks Canada
Laurent Jonart - laurent.jonart@pc.gc.ca | 867-222-1102

APPENDIX 1: ASI Slides

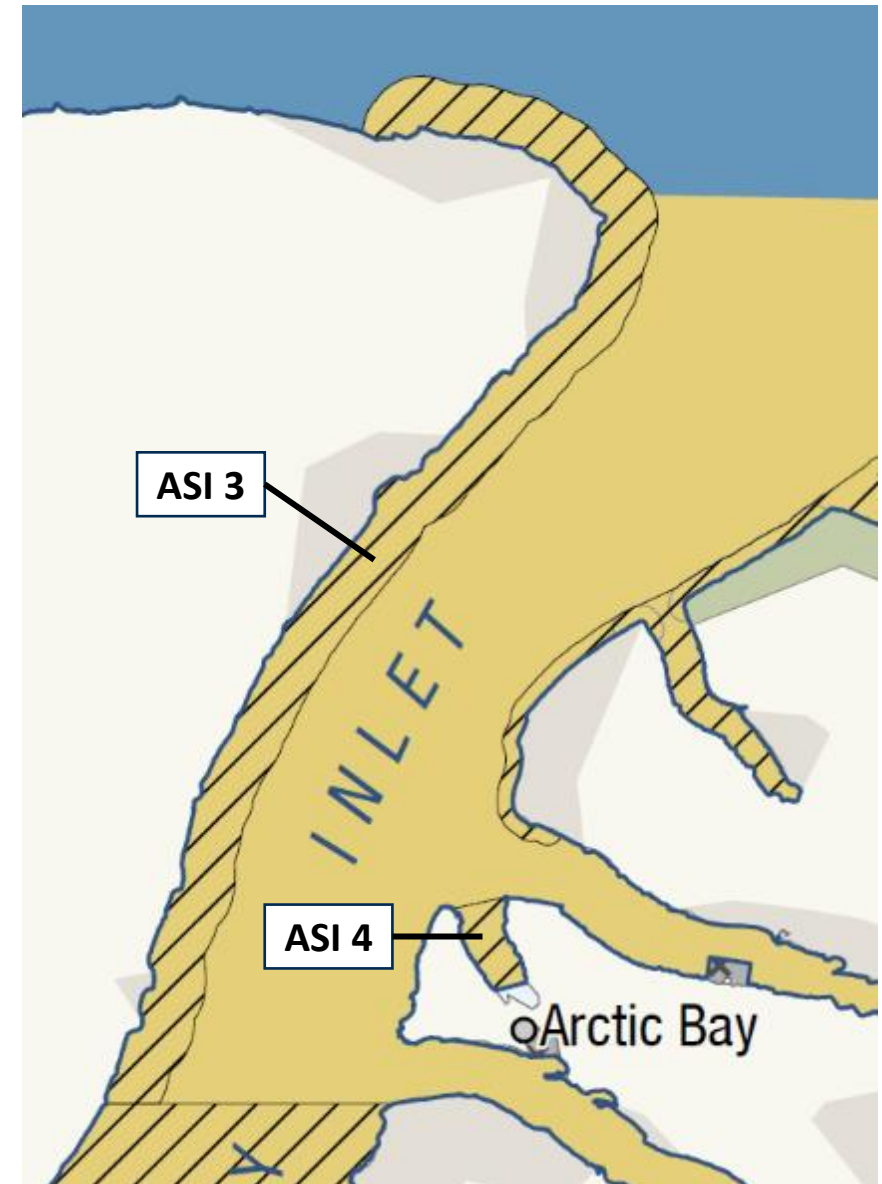
ASI 2: South Admiralty Inlet

- Orientation for visitors
- Visitors requested to hire a local guide.
- Support enhanced communication between communities and other users to respect communities.
- Speed limit of 9 knots for vessels over 300 tons for all Admiralty Inlet.



ASI 3: Strip along eastern shore of Brodeur Peninsula & ASI 4: Victor Bay

- Orientation for visitors
- Visitors requested to hire local guide
- Support enhanced communication between communities and other users to respect communities.
- Request vessels to obtain community support before accessing close to the shoreline.
- Victor Bay: Request that visiting vessels avoid Victor Bay to prevent interference with community activities

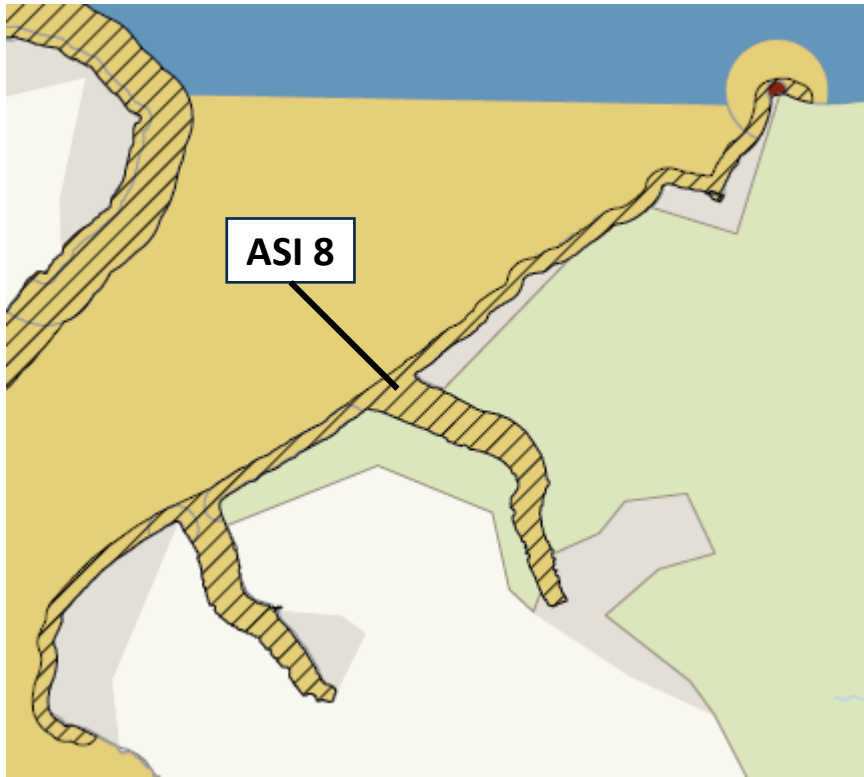


ASI 6: Southeast and northeast coasts of Devon Island & ASI 7: Southeast coast of Ellesmere Island

- Orientation for visitors
- Visitors requested to hire a local guide.
- Support enhanced communication between communities and other users to respect communities.

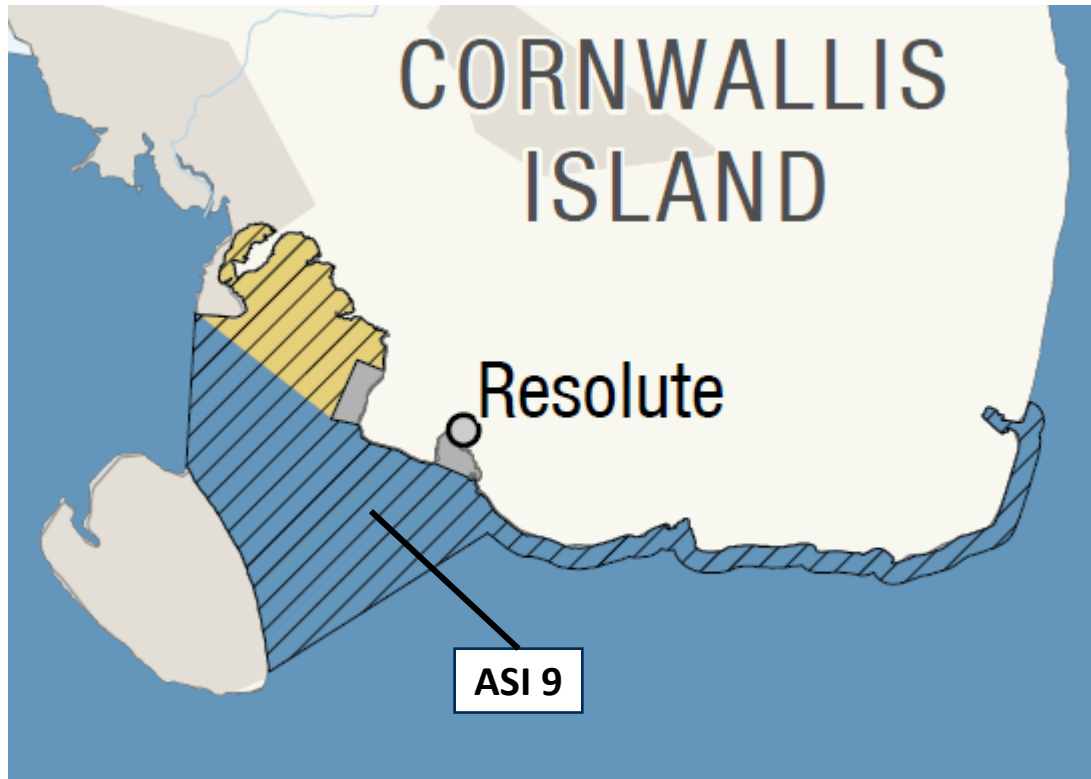


ASI 8: Western shore of Borden Peninsula



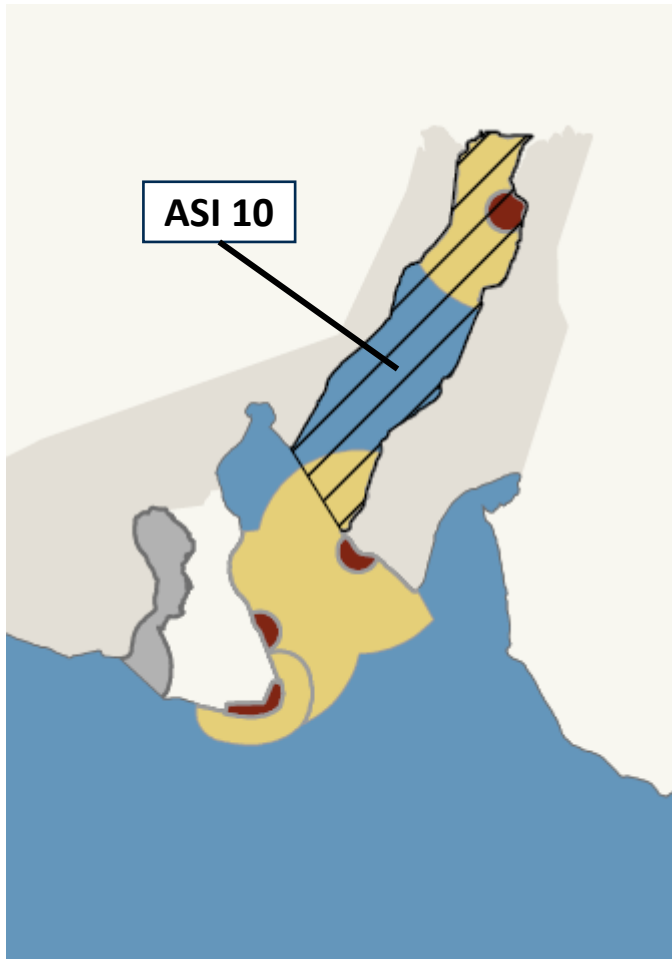
- Orientation for visitors
- Visitors requested to hire a local guide.
- Support enhanced communication between communities and other users to respect communities.
- Request vessels to obtain community support before accessing the area.

ASI 9: Resolute Passage and Cornwallis Island coast



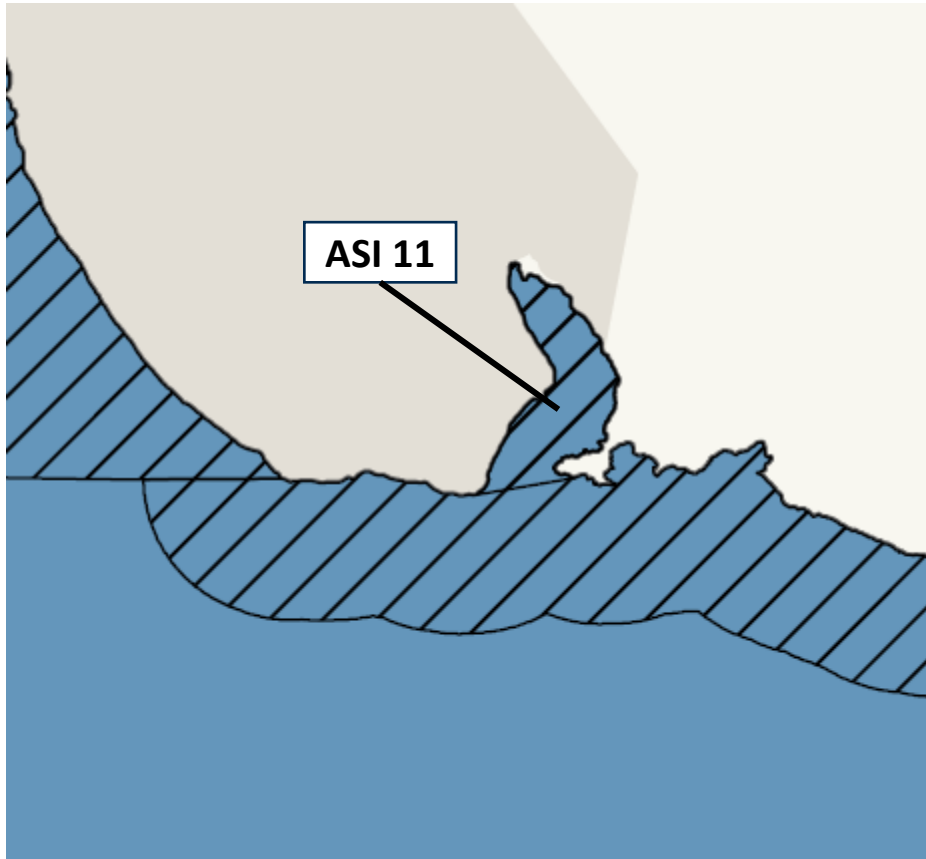
- Orientation for visitors
- Visitors requested to hire a local guide.
- Support enhanced communication between communities and other users to respect communities.
- Catch and release fishing will be discouraged.
- Preferred routes for cruise ships and commercial shipping will be identified.
- Community concerns about science and research. Permits will be required with community input on what is permitted or not.

ASI 10: Radstock Bay



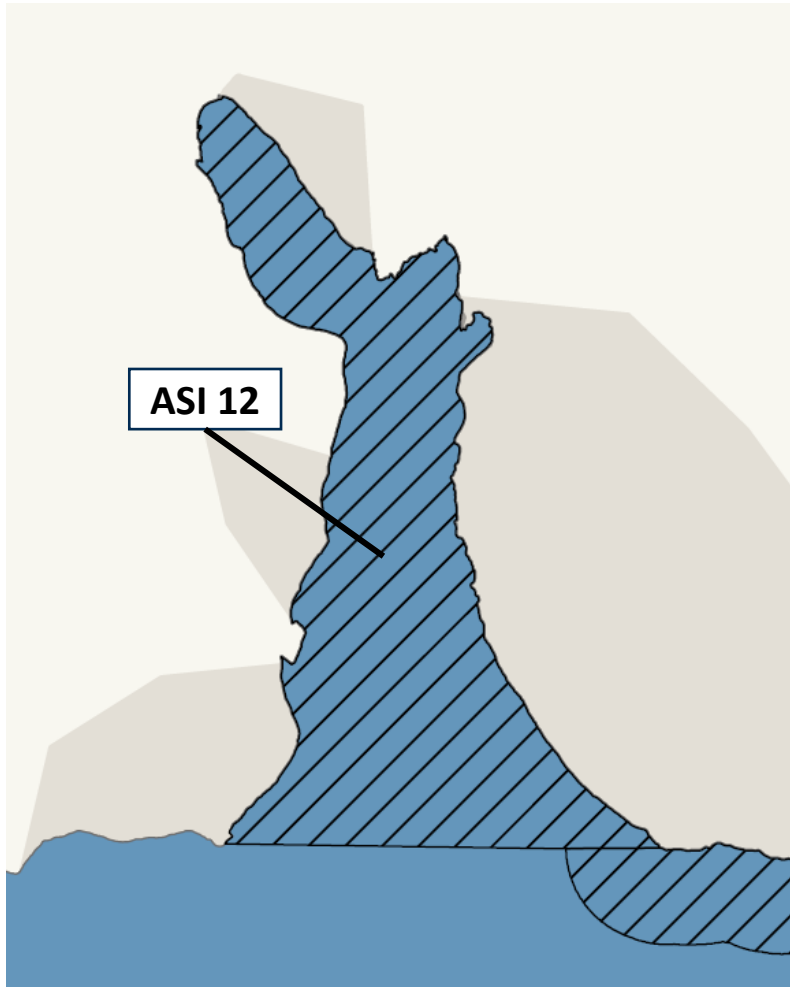
- Orientation for visitors
- Visitors will requested to a hire local guide.
- Support enhanced communication between communities and other users to respect communities.
- Ships are encouraged not to travel into these areas.
- Catch and release fishing will be discouraged.

ASI 11: Dundas Harbour



- Orientation for visitors
- Visitors will be encouraged to hire a local guide.
- Support enhanced communication between communities and other users to respect communities.
- Ships are encouraged not to travel into these areas.
- Catch and release fishing will be discouraged.
- Participants recommended strict protection for area (no access). But Parks Canada / AB has no control over land areas outside TINMCA and cannot use zoning to cut off access.
- Concerns about access to Dundas Harbour cultural sites have been communicated to GN.

ASI 12: Croker Bay



- Visitor orientation.
- Visitors encouraged to hire local guide.
- Support enhanced communication between communities and other users to respect communities
- Ships requested to avoid area.
- Catch and release fishing discouraged.
- No removal of glacier ice.
- Note: participants recommended strict protection for area.

Sport Hunting in Tallurutiup Imanga NMCA

No Restriction to Sport Hunting as per the IIBA:

8.1.3 To acknowledge that sports hunting and Inuit activities carried out within Tallurutiup Imanga NMCA shall continue after Tallurutiup Imanga NMCA is established as a national marine conservation area pursuant to the Canada National Marine Conservation Areas Act.

8.1.4 To acknowledge that sports hunting and Inuit activities will continue to be managed within Tallurutiup Imanga NMCA in accordance with the Nunavut Agreement and all applicable laws of general application.

8.5.1 The Parties acknowledge that sports hunting activities within Tallurutiup Imanga NMCA shall continue to be regulated and managed by applicable laws of general application and in accordance with the Nunavut Agreement.

8.5.2 The Aulattiqatigiit Board may provide recommendations as it deems appropriate to federal departments and agencies relating to the regulation of sports hunting activities within Tallurutiup Imanga NMCA including with respect to matters having the potential to impact Inuit participation therein.

8.5.3 Licences, permits, fees and other requirements that may be imposed by Parks Canada and Department of Fisheries and Oceans with respect to sports hunting shall not unduly or unreasonably constrain Inuit participation in sports hunting. The foregoing provision does not apply to existing DFO regulations that pertain to sports hunting.



Parks
Canada

Parcs
Canada



Tallurutiup Imanga

National Marine Conservation Area

Interim Management Plan

2026



2026

Tallurutiup Imanga

National Marine Conservation Area

Interim Management Plan

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For more information about the interim management plan or about
Tallurutiup Imanga National Marine Conservation Area

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Iqaluit, NU X0A 2H0

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<https://parks.canada.ca/amnc-nmca/cnamnc-cnnmca/tallurutiup-imanga>

Front cover image credits

top from left to right: Hugues Michaud, Nicole McFadden, Nicole McFadden
bottom: Niore Iqalukjuak

Foreword

Text and signatures to come during signing.

President
Qikiqtani Inuit Association

Minister of Environment
Government of Nunavut

Minister of Fisheries
Government of Canada

Minister of Transport
Government of Canada

Minister of Environment,
Climate Change and Nature
Government of Canada

Recommendations

Recommended by:

*Chief Executive Officer
Parks Canada*

*Field Unit Superintendent
Parks Canada*

Letter of support from Aulattiqatigiit Board

Text and signatures to come during signing.

*Co-Chair, Aulattiqatigiit Board
[Director, Qikiqtani Inuit Association]*

*Co-Chair, Aulattiqatigiit Board
[Field Unit Superintendent
Parks Canada]*



Photo: Nicole McFadden

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Glossary of Terms

Associated communities: For Tallurutiup Imanga NMCA, the associated communities are Arctic Bay, Resolute, Pond Inlet, Clyde River, and Grise Fiord.

Aulattiqatigiit Board: The joint Inuit and Canada management board established through the Tallurutiup Imanga NMCA Inuit Impact and Benefit Agreement in accordance with section 8.4.11 of the *Nunavut Agreement*.

Commercial tourism: The practice of providing recreational activity services with the intent of generating revenue. It can involve services such as tours, charters, excursions, outfitting, accommodation, and equipment rental.

Country food: Traditional Inuit food, including game meats, migratory birds, fish, and foraged foods. In addition to providing nourishment, country food is an integral part of Inuit identity and culture and contributes to self-sustainable communities.

Cultural heritage: Includes both tangible cultural resources and intangible cultural heritage, such as cultural traditions, practices, knowledge, skills and beliefs.

Cultural resource: A human work, object, or a place that has evidence of human activity or has spiritual or cultural meaning, and that has been determined to be of heritage value and includes tangible and intangible elements. For greater certainty, intangible elements may include Inuit stories, legends, history, spirituality, practices, representations, expressions, knowledge, and skills.

Ecological sustainability: A state in which marine ecosystems are self-regulating and resilient, and whose structure, function, and capacity to provide ecosystem services are not compromised.

Ecologically sustainable use: Use of marine resources in a manner that meets the needs of present and future generations without compromising ecological sustainability.

Ecosystem: A dynamic complex of animal, plant and microorganism communities and their non-living environment interacting as a functional unit.

Fishing: Understood to mean “fishing” as defined under the *Fisheries Act*. For greater certainty, includes the harvest of any marine animal, including invertebrates, such as clams or shrimp.

Innocent passage: Passage of a vessel is considered innocent so long as it is not prejudicial to the peace, good order or security of the coastal State; such passage shall be continuous and expeditious. Full definition and context in Articles 18 and 19 of the *United Nations Convention on the Law of the Sea*.

Interim management plan: The interim management plan for Tallurutiup Imanga NMCA required under paragraph 7(1)(d) of the *Canada National Marine Conservation Areas Act*.

Inuit Impact and Benefit Agreement (IIBA): The Inuit Impact and Benefit Agreement for Tallurutiup Imanga NMCA, required under Article 8 of the *Nunavut Agreement*.

Inuit Nunangat: The homeland of the Inuit, where Inuit live and use the lands, waters and sea ice. In Canada, Inuit Nunangat includes Nunavut and the northern parts of Labrador, Quebec, Northwest Territories and Yukon.

Inuit Qaujimajatuqangit: The traditional, current, and evolving body of Inuit values, beliefs, experience, perceptions, and knowledge, regarding the environment including land, water, wildlife, and people, to the extent that people are part of the environment. This Inuit Qaujimajatuqangit definition refers to knowledge passed on from generation to generation and describes what it means to be Inuit, how to interact with others, and how to survive on the land.

Inuit use: Past, present, or future Inuit activities or endeavors related to natural, economic, social, or cultural resources and identified as Inuit rights by the *Nunavut Agreement*.

Management Advisory Committee: The advisory committee required under subsection 11(1) of the *Canada National Marine Conservation Areas Act* to advise the Minister on the formulation, review, and implementation of the Management Plan for Tallurutiup Imanga NMCA.

Management plan: The management plan for Tallurutiup Imanga NMCA required under section 8.4.13 of the *Nunavut Agreement* and Section 9 of the *Canada National Marine Conservation Areas Act*.

Marine protected area: An area in the marine environment that is defined and managed through legal and/or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values (adapted from the International Union for Conservation of Nature). In the context of NMCAs, “marine” includes both ocean environments and the Great Lakes.

National Marine Conservation Area (NMCA): A national marine conservation area of Canada named and described in Schedule 1 of the *Canada National Marine Conservation Areas Act*.

Nunavut Agreement: The *Agreement between Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* that was ratified by a vote of the Inuit of the Nunavut Settlement Area and by the enactment by Parliament of the *Nunavut Land Claims Agreement Act*, S.C. 1993 c. 29.

Parks Canada: The Parks Canada Agency, the body corporate established by the *Parks Canada Agency Act*.

Precautionary principle: Where there are threats of environmental damage, lack of scientific certainty is not used as a reason for postponing preventative measures (*CNMCAA* preamble).

Recreational activities (non-extractive): Activities that are non-commercial that individuals engage in for enjoyment and well-being. These activities do not involve extracting renewable or non-renewable resources from the environment (for example, fish, whales, minerals, seaweed, etc.). Recreational activities could include things like boating, wildlife viewing, photography, traveling by snowmobile, or underwater exploration. This definition does not apply to Inuit use.

Sensitive ecosystem element: An ecosystem element that is at risk of being lost or compromised due to its intolerance to disturbance.

Small vessel: means small vessels as described in the *Small Vessel Regulations* (<https://laws-lois.justice.gc.ca/eng/regulations/sor-2010-91>).

Special feature: A natural or cultural feature of outstanding or unique value within Tallurutiup Imanga NMCA due to its rarity or particular importance.

Stakeholder: A person or group with an interest or concern related to the establishment and/or management of Tallurutiup Imanga NMCA (for example, environmental non-government organizations, fisheries associations and unions, commercial tourism operators and shipping organizations).

List of Acronyms Used

ASI	Area of Special Importance
CNMCAA	<i>Canada National Marine Conservation Areas Act</i>
IIBA	Inuit Impact and Benefit Agreement
NMCA	National Marine Conservation Area
UNESCO	United Nations Educational, Scientific and Cultural Organization



Photo: Nicole McFadden

1.0 Introduction

Located in Nunavut, the boundaries of Tallurutiup Imanga National Marine Conservation Area (NMCA) encompass the length of Lancaster Sound, stretching from Resolute Bay in the west to Baffin Bay in the east, beyond the territorial waters into Canada's Exclusive Economic Zone (Figure 1). At approximately 108,000 km², Tallurutiup Imanga NMCA represents nearly 2% of Canada's total marine area. It is the ecological driver for much of the eastern Arctic and provides important habitat for nearly all Arctic marine species. Its waters are a migratory corridor for numerous species and essential habitat for polar bears, seals, walrus, bowhead whales, narwhal, beluga whales and migratory birds. The area has sustained Inuit for generations and is an artery connecting communities and allowing travel throughout the High Arctic. Access to wildlife resources found in the NMCA is essential to food sovereignty and Inuit well-being and is critical for the region to remain a source of healthy country food.



Photo: Hugues Michaud

The origin of the name Tallurutiup Imanga connects Inuit traditions and the land. Inuit believe that Devon Island resembles facial tattoos on a jawline. Talluruti is the Inuktitut name for Devon Island and Imanga means a body of water surrounding an area.

The establishment of Tallurutiup Imanga as a National Marine Conservation Area reflects decades of work by Inuit, and supporting partners, to conserve this magnificent place. An Inuit Impact and Benefit Agreement (IIBA) towards the establishment of Tallurutiup Imanga NMCA was signed in 2019 between the Qikiqtani Inuit Association and the Government of Canada, as represented by Parks Canada, Fisheries and Oceans Canada and the Canadian Coast Guard, and Transport Canada. The IIBA provides benefits to Inuit and directions on the management of Tallurutiup Imanga NMCA, including the inclusion of Inuit Qaujimajatuqangit in decision-making, research and monitoring, cultural heritage, management planning, exploratory fisheries, marine shipping, and the promotion of Inuit rights.

In addition to transferring benefits to Inuit, the IIBA established the governance structure for Tallurutiup Imanga NMCA. The Aulattiqatigiit Board, the consensus-based joint Inuit and Canada management board, examines all steps, decisions, initiatives, and undertakings relating to the planning, operation, and management of Tallurutiup Imanga NMCA. The Aulattiqatigiit Board consists of three members appointed by the Qikiqtani Inuit Association and three appointed by the Government of Canada. Canada's appointees include senior representatives from Parks Canada, Fisheries and Oceans Canada, and a third member as determined by the Minister responsible for Parks Canada, who is currently an official from Transport Canada. Board members for the Qikiqtani Inuit Association are two senior officials from the organization and the Chair of the Imaq Committee, an Inuit advisory committee for the Qikiqtani Inuit Association which provides the perspectives of Inuit from the communities associated with Tallurutiup Imanga NMCA. The governance structure of the NMCA is completed by the Operations Committee, a joint Inuit and Canada committee which cooperates on operational aspects of managing the NMCA following the directions set by the Aulattiqatigiit Board.

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Photo: Nicole McFadden

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The Board is responsible for the implementation of this interim management plan and future management plans. It works by consensus to make decisions on the operations and management of Tallurutiup Imanga NMCA, in accordance with the *Nunavut Agreement*, the *Canada National Marine Conservation Areas Act (CNMCAA)*, and the *Policy on the Establishment and Management of National Marine Conservation Areas* ("NMCA Policy"). The Board may consult with communities, engage with industry, and/or seek advice and expertise from any individual or organization, on any matters related to the management of Tallurutiup Imanga NMCA. The Board can also use management tools, such as temporary closure, to adapt to changing conditions, based on recommendations from subject matter experts.

1.1 Purpose and scope of the interim management plan

Consistent with the *Canada National Marine Conservation Areas Act (CNMCAA)*, this interim management plan provides guidance for the management of Tallurutiup Imanga NMCA. The vision, management objectives and targets, and zoning plan address key themes related to the protection and conservation of important habitats and biodiversity; the ecologically sustainable use and management of marine resources; protection for Inuit rights and promotion of benefits from the NMCA; recognition of Inuit cultural heritage and stewardship; the inclusion of Inuit Qaujimajatuqangit, and collaborative research and monitoring strategies.

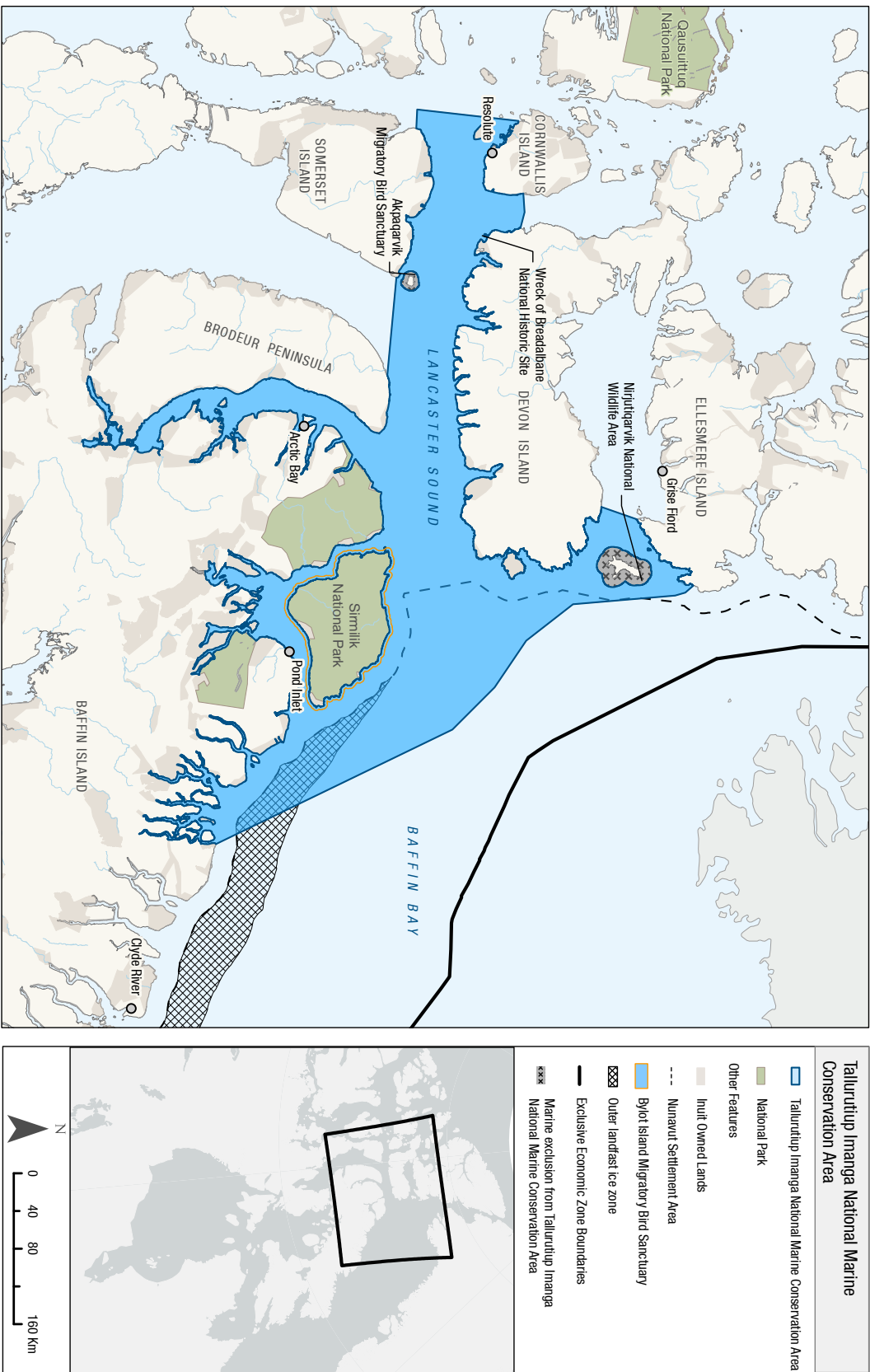


Figure 1.1 Map showing the location of Tallurutiup Imanga National Marine Conservation Area

This interim management plan was developed by a Planning Committee consisting of representatives from the Qikiqtani Inuit Association, the Government of Nunavut, and the Government of Canada (Parks Canada). The Planning Committee held extensive consultations with the five communities associated with Tallurutiup Imanga NMCA (Resolute, Grise Fiord, Arctic Bay, Pond Inlet, and Clyde River) and key stakeholders including the commercial tourism, fishing, and shipping industries, environmental non-governmental organizations, academia, and other Federal government departments in 2018 and 2019. These consultations informed the development of the content of this plan. In 2024 and 2025, consultations were again held with the associated communities to finalize this draft of the interim management plan.

This interim management plan will remain in place until a full management plan for the NMCA is developed and tabled in parliament within five years following establishment under the *CNMCAA*. The development of the full management plan will also rely on extensive consultations to identify a long-term vision for the NMCA, and provisions for ecosystem protection, human use, zoning, public awareness, and performance evaluation. The management plan will replace the interim management plan as the guiding document to manage the NMCA for up to ten years. Under the *CNMCAA*, management plans undergo review cycles at least every ten years and any amendments to the plan are required to be tabled in parliament.

Progress toward achieving the objectives and the effectiveness of the interim management plan are monitored on an ongoing basis. Reports on progress toward achieving the interim management plan objectives and targets will be shared with communities, partners, and stakeholders and made publicly available. Parks Canada shares its annual implementation report in June; this report is presented to the Aulattiqatigiit Board at a public meeting. Any feedback received is documented and used as input for the creation of the next management plan.

1.2 Establishment of Tallurutiup Imanga National Marine Conservation Area

NMCAs are established for the purpose of protecting and conserving representative marine areas for the benefit, education, and enjoyment of the people of Canada and the world (*CNMCAA* s. 4(1)). The *CNMCAA* enables Parks Canada to establish and manage a system of NMCAs that are representative of the Atlantic, Arctic and Pacific Oceans, and the Great Lakes.

The *CNMCAA* requires that marine conservation areas are:

“...managed and used in a sustainable manner that meets the needs of present and future generations without compromising the structure and function of the ecosystems...with which they are associated” (*CNMCAA* s. 4(3))

NMCAs are places where Indigenous peoples continue their traditional and cultural practices—including accessing traditional foods—and fulfill their roles as stewards. Protecting marine biodiversity and ecosystems is of primary importance.

Between 2009 and 2017, the Lancaster Sound National Marine Conservation Area Feasibility Assessment Steering Committee, comprised of representatives from the



Photo: Nicole McFadden

Qikiqtani Inuit Association, Government of Canada, and Government of Nunavut, worked together on an assessment to determine whether an NMCA was feasible and desirable in Lancaster Sound. The Steering Committee led years of consultations with local communities and stakeholders, and conducted studies related to ecological and Inuit knowledge, commercial tourism, fishing, and hydrocarbons. The committee found that the establishment of an NMCA to conserve and protect the Lancaster Sound region was both feasible and desirable. The process culminated in 2017 with *A National Marine Conservation Area Proposal for Lancaster Sound – Feasibility Assessment Report* which recommended the establishment of a NMCA and recommended a preliminary boundary of approximately 109,000 km² influenced significantly by Inuit Qaujimajatuqangit.

The recommendations included in the feasibility assessment were accepted through a Memorandum of Understanding between the Qikiqtani Inuit Association, the Government of Canada (Parks Canada) and the Government of Nunavut in August 2017. The Memorandum of Understanding also established a Planning Committee responsible for the development of this interim management plan and for recommending the final boundary for the NMCA. At the same time, Parks Canada and the Qikiqtani Inuit Association signed Terms of Reference to launch the negotiation of the IIBA towards the establishment of Tallurutiup Imanga NMCA, as required by the Nunavut Agreement. The Planning Committee finally recommended a slightly revised boundary of 108,000km², as described in the 2019 IIBA (Figures 1.1 and 1.2).

1.3 Inuit and the Environment: Cultural and Historical Background

Approximately 4,100 people currently live in communities, use camps, and access traditional sites along the shores of the NMCA. Throughout the year, the ecological abundance of this area provides for Inuit today as it has for generations. Inuit who call this place home are deeply connected to it by their history, culture, language, and traditions. Through harvesting, travel, and living within this area, Inuit have helped maintain ecological balance since the arrival of their ancestors, thousands of years ago. The many species that have co-existed with Inuit in this area continue to provide food and resources for clothing, shelter, and economic benefits. Inuit

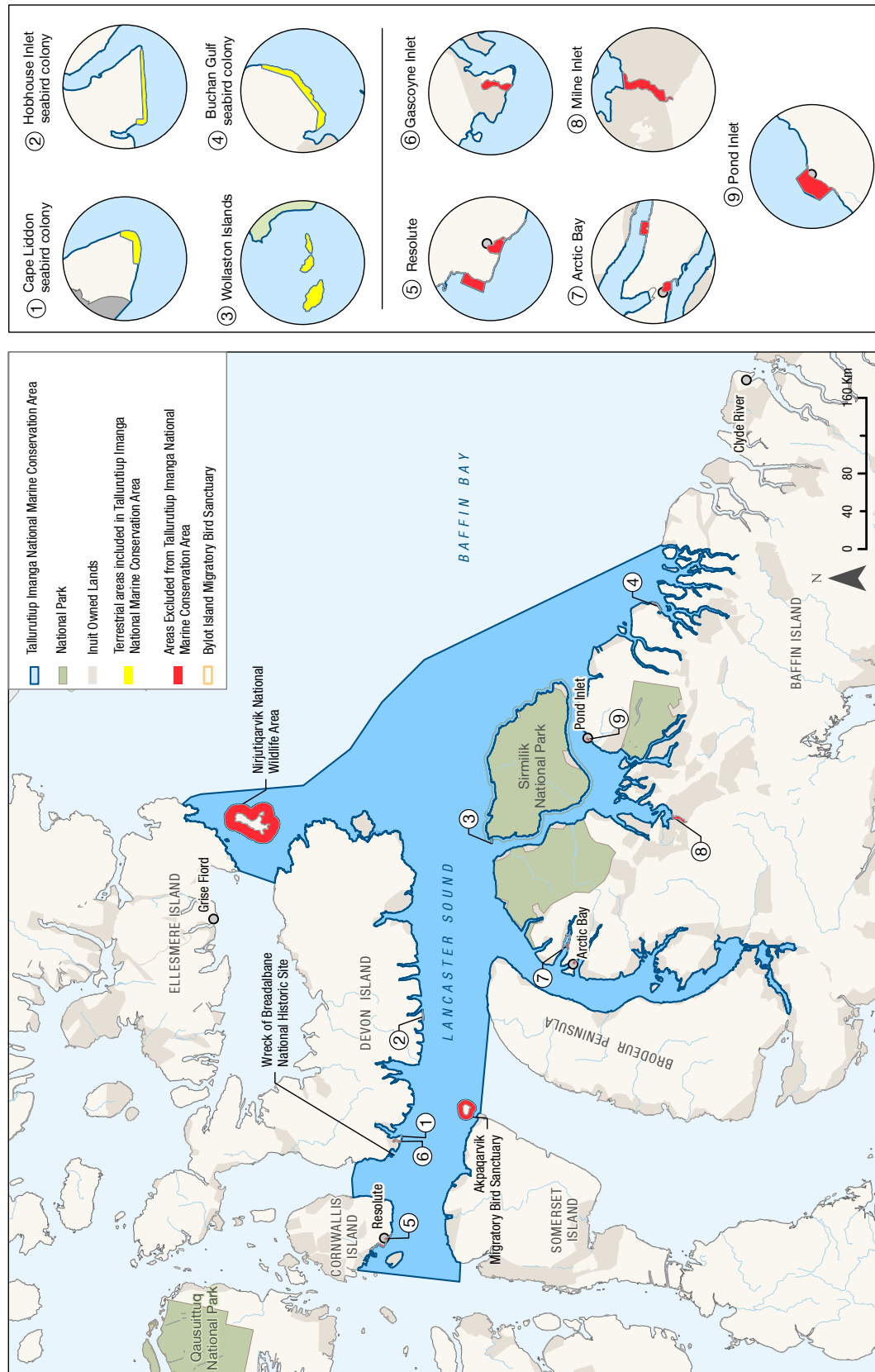


Figure 1.2 Map showing detail of the Tallurutiup Imanga NMCA boundary. Yellow areas are terrestrial areas that are included within the NMCA boundary; red areas are areas excluded from the NMCA.

have a deep knowledge of the animals of this area, as well as their habitats, biology, and behaviour. Inuit Qaujimajatuqangit encompasses all things important to Inuit relationships with the environment and, as such, is part of all decision-making. Inuit Qaujimajatuqangit is constantly generating new knowledge, and its application is critical to governance and management of Tallurutiup Imanga NMCA.

1.4 Importance of Conserving Tallurutiup Imanga

Tallurutiup Imanga NMCA is recognized as one of the most biologically productive and diverse Arctic marine areas in the world. Lancaster Sound is a major east-west waterway, encompassing significant portions of the maritime route from the North Atlantic, through the Canadian Archipelago and Arctic Ocean, and onwards to the Pacific Ocean. The region has supported Inuit year-round for millennia, as demonstrated by at least 46 known archaeological sites and continued subsistence use to this day. Inuit Qaujimajatuqangit carries the collective experience and harvesting traditions used in the area for generations.

At a national level, protecting Tallurutiup Imanga NMCA contributes to Parks Canada's long-term goal of establishing at least one NMCA in each of the 29 distinct marine regions of Canada. Tallurutiup Imanga NMCA represents the Lancaster Sound marine region in the Arctic Ocean and is the sixth region to be represented within the system of NMCAs.



"Conservation and management of Tallurutiup Imanga is important because we have to protect the marine mammals, like seals and narwhals—especially when they are our main source of food."

James Simone, Pond Inlet

Lancaster Sound was identified by an International Union for the Conservation of Nature-Natural Resource Defense Fund 2011 report as a 'Super Ecologically and Biologically Significant Area' for the Arctic. The extent of Tallurutiup Imanga NMCA includes all or part of eight Ecologically and Biologically Significant Areas identified in the Canadian Arctic by Fisheries and Oceans Canada and three Key Terrestrial Habitat Sites for migratory birds. In addition, Tallurutiup Imanga NMCA, along with Sirmilik National Park, has been added to Canada's Tentative List for UNESCO World Heritage Sites as an exceptional representation of the high Arctic coastal ecosystem.

Current scientific data for Tallurutiup Imanga NMCA are relatively limited. However, two notable components to the biological features of the area are major concentrations of nesting and migratory marine birds, and nationally and globally

significant concentrations of marine mammals including 75% of the global narwhal population. Populations of several marine mammals classified by the Committee on the Status of Endangered Wildlife in Canada as “Special Concern”, including bowhead whales, beluga, walrus, and polar bear, rely on Tallurutiup Imanga NMCA and its adjacent shores for critical life stages such as foraging, breeding, and migration to and from summer habitats. The ecological importance of Tallurutiup Imanga NMCA also extends to the sea floor: there are areas of significant concentrations of corals and sponges within the NMCA.

A major reason for the abundant marine life in Tallurutiup Imanga NMCA is the presence of polynyas, large areas of open water surrounded by sea ice. Formed by a combination of ocean currents and winds, the nutrient rich waters of these polynyas provide abundant food and productive habitat for marine mammals, Arctic birds, and other species that make the Arctic ecosystem their home.

Ice breakup also begins earlier in certain regions of the NMCA than in the surrounding area because of these currents and winds: in early spring along the ice floe edge, nutrients well up to the surface, combining with sunlight to create ‘hot spots’ of biological productivity. The resulting abundance at the base of the food chain provides critical spring foraging habitat for fish such as Arctic cod and other species such as narwhal, beluga, bowhead whales, and large aggregations of marine birds. As ice gives way to open water, critical travel routes open for marine animals and people.

1.5 Economic Activities and Uses within Tallurutiup Imanga NMCA

In addition to subsistence hunting, fishing, gathering, and other traditional uses of Inuit harvesting marine resources, the core economic activities within the NMCA include commercial shipping (resupply to local communities and marine transportation for the Baffinland Iron Mines Corporation) and the commercial tourism industry (such as cruise and yacht excursions, kayaking, sport hunting, floe edge commercial tourism, wildlife viewing, dogsledding, snowmobiling and cultural education).

Commercial and exploratory fisheries are an emerging activity within Tallurutiup Imanga NMCA and of great interest to the associated communities as an opportunity for economic development. Inuit regularly harvest Arctic char for subsistence and as part of small-scale commercial fisheries. Other marine transportation activities include research vessels, international cargo ships transiting Lancaster Sound and Eclipse Sound, government vessels (for example, Canadian Coast Guard icebreakers, Department of National Defence activities, and resupply to the Nanisivik Naval Facility), as well as local and non-local pleasure craft.

1.6 Guiding Principles for the management of Tallurutiup Imanga NMCA

1. Use of Inuit Qaujimajatuqangit

Inuit values, experience, and Inuit Qaujimajatuqangit inform and guide all aspects of management for Tallurutiup Imanga NMCA.

2. Inuit Identity and Relationship with the Physical Landscape

Inuit are part of the land and sea and Tallurutiup Imanga NMCA is part of Inuit Nunangat. The physical, mental, and spiritual health of Inuit is dependent on a healthy ecosystem and the continuity of Inuit cultural practices, such as harvesting. Inuit rely on the environment and its wildlife for physical sustenance and cultural renewal, and in turn, Inuit are stewards of the NMCA dedicated to ensuring its long-term health and sustainability.

3. Cooperative Approach to Adaptive Management

Adaptive management is both a deliberate process for dealing with uncertainty and responding to new information by adjusting management to improve operational outcomes, and also an iterative process that learns from real-world outcomes of past management actions to improve future strategies. In managing Tallurutiup Imanga NMCA and implementing the interim management plan, the Aulattiqatigiit Board will make decisions through consensus governance, taking into consideration new information about changes to the environment, about changing human use, and about needs of Inuit in the associated communities, as well as results of past management actions. As new information becomes available, the Aulattiqatigiit Board will use various tools available to them (Appendix D) to adapt management strategies and address emerging changes.

4. Precautionary Principle and Ecosystem Approach

Management of Tallurutiup Imanga NMCA will be rooted in the precautionary principle and the twelve principles of an ecosystem approach from the Convention on Biological Diversity, which considers humans to be an essential component of the ecosystem (<https://www.cbd.int/ecosystem/principles.shtml>).

5. Whole of Government Approach

A whole of government approach with relevant federal and territorial government departments will be taken towards the management of Tallurutiup Imanga NMCA to ensure integrated and consistent decision making, the efficient use of resources, and to ensure administrative processes are as streamlined as possible.

6. Alignment with Canadian and International Law

The management of Tallurutiup Imanga NMCA will be consistent with the *Nunavut Agreement*, applicable federal and territorial laws, comply with Canada's domestic and international legal obligations, and allow for the proper conduct of the external affairs of Canada.

2.0

Planning Context

2.1 Legislative and Policy Context

The *CNMCAA* provides the legal authority and framework for Parks Canada to establish and manage Tallurutiup Imanga NMCA. The Minister of Fisheries and Oceans Canada and Minister of Transport Canada maintain their respective regulatory authorities within the NMCA and must agree on any management provision that relates to their respective areas of responsibility (Table 2.1). Parks Canada ensures coordination and collaboration among federal departments who have jurisdiction in the NMCA. The management of the NMCA will also be supported through regulations under the *CNMCAA* (currently in development and expected to come into force in 2026).

All parties with jurisdiction in Tallurutiup Imanga NMCA ensure their responsibilities are carried out in accordance with the enabling legislation and regulations, consistent with the *Nunavut Agreement*, the *CNMCAA*, the *IIBA*, other

Federal Body	Responsibility
Parks Canada	• Public lands (implications for managing Species At Risk, impact assessment) • All matters not the responsibility of another Minister • Coordination of federal management efforts
Fisheries and Oceans Canada	• Fishing, aquaculture and fisheries management , safe navigation, and ocean science
Canadian Coast Guard	• Responsible for search and rescue, icebreaking, environmental response
Transport Canada	• Marine navigation and marine safety • Aviation
Environment and Climate Change Canada (Canadian Wildlife Services)	• Management of Nirjutiqarvik National Wildlife Area, Akpaqarvik Migratory Bird Sanctuary, and Bylot Island Migratory Bird Sanctuary

Table 2.1 Shared Federal Responsibility

applicable legislation, regulations, NMCA Policy, NMCA management plans, and other policy instruments (Appendix C).

The Marine Safety and Security Branch of Transport Canada has the responsibility for ensuring that marine navigation in Arctic waters is conducted to mitigate the safety and environmental risks associated with marine navigation through the *Arctic Waters Pollution Prevention Act* and the *Canada Shipping Act*. In the Arctic, both Acts, along with the *Marine Transportation Security Act*, and their associated regulations are applied to provide Canada's operational regulatory regime governing marine safety, security, and environmental protection matters. The Marine Safety and Security Branch administers and enforces these Acts and associated Regulations.

Fisheries and Oceans Canada has responsibility for fisheries management and aquaculture in NMCAs, including Indigenous fisheries. Fisheries and Oceans Canada is responsible for the provision of aids to navigation, marine communication and traffic services. The Canadian Coast Guard is responsible for icebreaking, marine pollution response, and maritime search and rescue to ensure safe and accessible waterways.

In addition to the above, Environment and Climate Change Canada is mandated to protect migratory birds according to the *Migratory Birds Convention Act*. Parks Canada is responsible for administering the *Species at Risk Act* for federal lands and waters administered by Parks Canada, including Tallurutiup Imanga NMCA.

Once the NMCA is established under the *CNMCAA*, Parks Canada will replace the Nunavut Planning Commission in conducting conformity reviews for project proposals occurring within Tallurutiup Imanga NMCA. The requirements set out by, or under, any law for which Parks Canada has authority will replace any approved

land use plans in conformity determinations. This interim management plan and subsequent full management plans will be tools used in both conformity reviews and subsequent impact assessment processes.

2.2 Roles of Other Government and Co-Management Bodies

Tallurutiup Imanga NMCA is a vast area, and cooperation with others is key for successful management.

Territorial Government

The Government of Nunavut will continue to play a role in such things as Nunavut Research Institute research permits, cultural heritage management, commercial tourism development, promotion and supports for a strong sustainable commercial tourism sector, investor confidence and promotion, wildlife management, and licensing within Nunavut.

Further to the IIBA, the Government of Nunavut shall remain involved in such matters as capacity building and training activities for Inuit (IIBA s. 10.4.1) and improving the understanding of the marine ecosystem and the potential for sustainable fishing opportunities (IIBA s. 16.1.4).



The Government of Nunavut will seek active and continuous participation in the management of Tallurutiup Imanga NMCA, including seeking a seat on the Management Advisory Committee that will be responsible for the formulation, review and implementation of the Management Plan as per s.11(1) of the CNMCAA.

Institutions of Public Government

The institutions of public government as set out in the Nunavut Agreement will continue to play an important role within Tallurutiup Imanga NMCA. The Nunavut Wildlife Management Board will continue its role in decisions related to wildlife management. The Nunavut Impact Review Board will continue its role of screening and reviewing projects. When a project is proposed to take place both within and outside of the NMCA, the Nunavut Planning Commission will consider the components of the project outside of the NMCA and the Aulattiqatigiit Board will review the portions of the project inside the NMCA.

Protected areas within and adjacent to Tallurutiup Imanga NMCA

Governance of the NMCA provides continuity and alignment between protected areas that lie adjacent to or within the NMCA boundary and their associated co-management regimes and IIBAs (for example, Sirmilik National Park administered by Parks Canada and Akpaqarvik and Bylot Island Migratory Bird Sanctuaries and Nirjutiqarvik National Wildlife Area administered by the Canadian Wildlife Service of Environment and Climate Change Canada). This alignment will not diminish protection in either the NMCA or the other protected areas.





Photo: Nicole McFadden

3.0

A Vision for Tallurutiup Imanga NMCA

Tallurutiup Imanga National Marine Conservation Area is a thriving, globally significant ecosystem that sustains and empowers Inuit for generations to come and welcomes visitors to experience, appreciate, and respect its meaning to Inuit, Canada, and the Arctic region.

The structure and function of the ecosystems of Tallurutiup Imanga NMCA are protected, remain strong and healthy, and are cooperatively managed by Inuit and the Government of Canada. The management of Tallurutiup Imanga NMCA acknowledges the key role that Inuit play as part of the Arctic ecosystem and as stewards of the NMCA. The cooperative management approach safeguards Inuit harvesting areas and activities, and supports Inuit self-determination over their general well-being, including economic, social, and cultural development. Marine resources are managed in an ecologically sustainable manner for the lasting benefit of coastal communities.

Inuit continue to directly rely on this region for sustaining their lives, enjoying year-round access to marine wildlife; practicing their culture and traditions such as hunting, being stewards of the land and waters; continuing to accumulate their vast knowledge, and maintaining strong connections with their youth, other Canadians, and the world. Ecologically sustainable and culturally respectful visitation are promoted, and Inuit play a central role in managing commercial tourism activities and sharing their knowledge with visitors.





4.0

Management Objectives

The following management objectives and targets consider the recommendations of the report resulting from the 2017 feasibility assessment and the additional consultations conducted by the Planning Committee with the five associated communities and key stakeholders during 2018, 2019, 2024 and 2025. They guide the management of Tallurutiup Imanga NMCA over the anticipated five-year lifespan of the plan. The objectives describe the broad aspirational outcomes; the targets are more specific and serve to measure and report on progress toward each objective. The years specified in the targets refer to when within the five-year lifespan of the plan the target will be completed. The managing partners of the NMCA develop their respective annual workplans using the guidance of these objectives and targets in addition to the guidance provided in the IIBA.



Objective 1: The natural and cultural heritage of Tallurutiup Imanga is protected and conserved.

Tallurutiup Imanga is the ecological driver of the eastern Canadian Arctic marine ecosystem, providing sustenance and essential habitat for a diversity of species, including species at risk. A healthy, productive marine ecosystem is critical for these marine species and for Inuit, who depend on the marine environment for livelihood, food security, and cultural continuity. Healthy ecosystems also have enhanced resilience to natural and human-induced disturbances and changes, including climate change. Tallurutiup Imanga NMCA managers will prioritize the protection and conservation of the rich biodiversity and unique ecosystems of Tallurutiup Imanga NMCA, from the flourishing colonies of marine animals living on the bottom of the ocean floor, to the sea ice on the surface that supports Inuit self-sufficiency, provides critical habitat, and drives biological productivity.

Managers will also ensure there is effective management of sites of cultural importance within Tallurutiup Imanga NMCA, which include Inuit cultural and spiritual sites, archaeological sites, and the Wreck of Breadalbane, to ensure they are cared for and protected. An effective zoning plan gives management the tools to protect natural and cultural heritage. Users must also be aware of the rules and guidelines in place to reduce impacts on wildlife habitat, sea ice, areas of importance to communities for sustenance and cultural activities, and the unique features of Tallurutiup Imanga NMCA. Clear, simple, and streamlined processes for issuing permits and authorizations will ensure users know when and where authorizations are required and ensure the impacts of activities are minimized.

Achieving the following targets will help accomplish this objective:

Target 1. The effectiveness of the interim zoning plan in protecting and conserving natural and cultural heritage is evaluated to improve the zoning plan if needed (for example, changes to zone boundaries, or the need for additional management tools to support zoning) by the end of year five.

Target 2. A plan that identifies effective communication tools to inform NMCA users about the protection and conservation of the natural and cultural heritage of Tallurutiup Imanga NMCA is completed by year two. Implementation of the identified tools begins in year three.

Target 3. Processes for issuing authorizations (such as permits or licenses) for activities in Tallurutiup Imanga NMCA are developed, and documented in a format that is publicly available, by the end of year two. These processes prioritize the protection of wildlife and Inuit use of the area in the management of other uses and activities within the NMCA. To the extent possible, these processes are streamlined with existing procedures.

Target 4. As per the Federal Marine Protected Areas Protection Standard, an assessment of the compatibility of the use of bottom trawl gear with the NMCA's conservation objectives is conducted in collaboration with communities and stakeholders, and a report delivered to the Aulattiqatigiit Board by the end of year five.

Target 5. A Cultural Resources Management Plan, or alternative management tools as directed by the Aulattiqatigiit Board (IIBA s. 12.2), is completed, and implemented by year two.

Target 6. An assessment of the need for increased protection of colonial seabirds and their habitat is completed in collaboration with the Canadian Wildlife Service, and a report with findings and recommendations delivered to the Aulattiqatigiit Board by year three.



Objective 2: The sustainable use of marine and terrestrial resources in Tallurutiup Imanga NMCA respects Inuit rights, results in economic and social benefits for Inuit, and enhances the well-being of the associated communities.

Tallurutiup Imanga NMCA has seen significant increases in ship traffic related to commercial shipping and tourism over the past 25 years, with this growth projected to continue. Communities have expressed concerns about the impacts of ship activity on wildlife habitat and behaviour, and on the use, safety, and enjoyment of hunting, camping, and travel areas. Inuit access to wildlife resources found in Tallurutiup Imanga NMCA is essential to food sovereignty and Inuit well-being, and it is critical that the region continues to remain a source of healthy country food.

Ecologically sustainable economic activities are welcomed and encouraged in Tallurutiup Imanga NMCA. These activities will be managed to minimize adverse impacts on Inuit travel and rights; to provide benefits to the communities, and overall, to increase the wellbeing of those living in and around Tallurutiup Imanga. NMCA managers will actively work with communities and partners to identify and facilitate opportunities to realize social, economic, and cultural benefits from the NMCA. Community input will also be sought to develop and assess key indicators to measure and understand the impacts of the establishment of Tallurutiup Imanga NMCA on the wellbeing of the associated communities to better inform management decisions.

Achieving the following targets will help accomplish this objective:

Target 1. As part of the development of processes to issue authorizations (Objective 1, Target 3), terms and conditions are developed that require project proponents to document how their proposals respect Inuit rights and benefit the associated communities within two years.

Target 2. The tools needed to manage visitor behaviour in Tallurutiup Imanga NMCA and associated communities (for example, guidelines for cruise ships), to reduce the impact of visitation and increase the economic benefits to communities,

are developed in collaboration with the communities and stakeholders, implemented, and communicated to users within two years.

Target 3. An assessment of effective methods of informing communities about marine vessel movements (across the range of vessel size), commercial activity, and marine navigation matters in Tallurutiup Imanga NMCA is completed within two years. Upon completion, the recommendations from the assessment are ready to be implemented.

Target 4. A strategy that outlines opportunities to build local capacity to benefit from economic opportunities in Tallurutiup Imanga NMCA, including, but not limited to, ecologically





Photo: Jovan Simic

sustainable and culturally appropriate commercial tourism activities, is developed in partnership with communities and stakeholders within five years.

Target 5. Social, cultural, and economic indicators to assess the impact of Tallurutiup Imanga NMCA on the well-being of adjacent communities are co-developed with communities. The monitoring of these indicators commences within five years.

Target 6. In collaboration with the associated communities, an infrastructure plan is developed and ready to be implemented within two years to identify infrastructure needs to support operations and management of Tallurutiup Imanga NMCA (for example cabins or visitor reception center(s)). This infrastructure plan may include guidance on the implementation of the four infrastructure agreements made in 2019 related to Tallurutiup Imanga (community harbours in Grise Fiord and Resolute, Small Craft Harbours in Clyde River and Arctic Bay, multi-use infrastructure in the five associated communities, regional training center in Pond Inlet) if requested by one or more of the parties to those agreements. Such guidance is supplementary and not a prerequisite for implementation of those agreements.



Photo: Nicole McFadden

Objective 3: Collaborative research and monitoring increases awareness of Tallurutiup Imanga National Marine Conservation Area, informs decision making, and promotes knowledge collection and sharing.

Effective conservation of Tallurutiup Imanga NMCA requires current, sound information derived from a robust and active research and monitoring program. Inuit Qaujimajatuqangit and western science together will form the basis for decision making. Inuit Qaujimajatuqangit is an active knowledge base that must be used, applied, and shared on a continual basis to evolve and realize its full value. This emphasizes the importance of establishing opportunities for Inuit to participate in research and monitoring, and to share knowledge about Tallurutiup Imanga NMCA. Inuit in the associated communities have expressed

concerns about the way research has been conducted and the impacts on their communities. The active participation of communities is key to shaping research and monitoring initiatives in the NMCA, to ensure that community concerns are addressed, and community priorities are reflected.

The Inuit Qaujimajatuqangit principle of *Ikajuqtigiinni* (working together for a common cause) will guide the work under this objective. Collaboration with communities to design and conduct research and monitoring will increase community capacity. Further, collaboration and community involvement will result in a better understanding of ecosystem health and threats, and ensure resources are used wisely. As data is collected, used, and shared, the level of awareness of Tallurutiup Imanga NMCA and its significance to the Arctic region and the world will increase. Information sharing provides an opportunity to communicate to visitors and the public the central role that Inuit have played since time immemorial, and continue to play, as stewards and knowledge keepers of this valuable area.

Achieving the following targets will help accomplish this objective:

Target 1. A minimum of three indicators to monitor ecological sustainability that are based on Inuit Qaujimajatuqangit and western science are co-developed with communities and approved by the Aulattiqatigiit Board. The monitoring of these indicators commences within five years.

Target 2. Ensure there is a Research and Monitoring Strategy for the NMCA that meets all the requirements as listed in Article 13 concerning Research and Monitoring of the IIBA. The implementation of the strategy starts in year one.

Target 3. A plan to increase Inuit participation in, and benefit from, research and monitoring activities and that further supports the implementation of Article 13 of the IIBA concerning Research and Monitoring is developed and implemented by year four.

Target 4. Beginning in year two, an annual event is held in one of the five associated communities each year on a rotating basis, in partnership with the communities, for sharing stories, knowledge, and experiences related to Tallurutiup Imanga. This event fosters direct community engagement and contributes to cultural and environmental awareness.

Target 5. Guidelines for reporting results from research and monitoring activities are co-developed with communities within four years. Aligned with guidelines, research authorizations include requirements for results to be shared with the involved communities within 12 months of the completion of the project and for community feedback to be documented so it can inform future research and monitoring activities within Tallurutiup Imanga NMCA.



Photo: Nicole McFadden

Objective 4: Collaborative and coordinated prevention, preparedness, and response planning increases safety of the associated communities and NMCA users and the protection of Tallurutiup Imanga.

Increased human activity, pollution, the threat of oil spills, and the effects of climate change all pose threats to the protection and conservation of the marine environment, and the users of Tallurutiup Imanga NMCA. Increased vessel traffic and visitation increase the likelihood of requiring search and rescue or emergency response. However, the current capacity to respond to incidents is limited. Incident response and the enforcement of rules and regulations in the NMCA is currently decentralized and must be coordinated among a variety of parties, including federal departments, the Government of Nunavut, local search and rescue teams, harvesters, the Canadian Rangers, and communities.

With the establishment of Tallurutiup Imanga NMCA, and the corresponding change in Parks Canada's responsibilities, there is an opportunity to work together to increase resourcing and reduce the challenges related to emergency preparedness and enforcement. Cooperation and coordination between parties will clarify roles and responsibilities, improve the use of resources and infrastructure, increase the capacity to respond to emergencies; allow for better enforcement of rules and regulations, and overall improve the safety of users and the protection of the environment. The knowledge and experience held in the communities associated with the NMCA are crucial to developing and implementing measures needed to protect the public and the environment. Marine safety will be further supported through clear communication of safety measures needed to reduce the chance of an emergency or search and rescue operation. Further, the implementation of appropriate navigation aids will contribute to the overall ongoing protection of the marine area, communities, and other users.

Achieving the following targets will help accomplish this objective:

Target 1. A plan to improve emergency preparedness and response is developed in collaboration with relevant partners and implemented within three years. This plan includes, at a minimum, marine environmental and hazard response, and search and rescue.

Target 2. Needed safety measures in Tallurutiup Imanga NMCA, for both open water and sea ice seasons, are identified with partners and communities and compiled in a report, and these measures are communicated to the NMCA users within two years.

Target 3. A strategy to align prevention, compliance, and enforcement across governments, agencies, and other partners, which includes stronger and increased Inuit presence and representation in compliance and enforcement roles, is developed by year three and implemented by year five.

Target 4. A method for communities to report suspicious vessel activities or observations in Tallurutiup Imanga NMCA (for example, incidents of wildlife disturbance, pollution, or illegal hunting), and inquire about shipping activities, is implemented by the end of year one.

Target 5. A plan to identify navigation and communication aids needed to improve navigational safety (for example, buoys, markers, identification of safe harbours, improved charting of navigation routes) in Tallurutiup Imanga NMCA is developed with communities and stakeholders within four years.



5.0 Zoning

5.1 Zoning Framework

Zoning is a spatial management tool that sets the management intent for different areas of an NMCA by dividing it into specific zones, each with a defined purpose and level of protection, objectives and categories of allowable uses and activities. As per the CNMCAA, each NMCA must have at least two zones, one that fosters and encourages ecologically sustainable use of marine resources, and one that fully protects special features or sensitive ecosystem elements. Ensuring that zones are of sufficient size and effective configuration is important to achieve the objectives of each zone. Zoning is implemented through a range of voluntary, policy, and regulatory measures by the appropriate authority or authorities (see section 2 and Appendix D).

Zoning provides certainty and predictability to managers and NMCA users and strives to minimize negative socio-economic impacts to Indigenous peoples,

stakeholders, and coastal communities. In addition to the primary objectives laid out for each zone, the zoning plan may incorporate objectives to reduce conflicting or competing uses. As part of Parks Canada’s regular management planning cycle, annual reporting and long-term monitoring studies are used to inform the evaluation of zoning efficacy within the NMCA and address conservation and ecosystem objectives and the needs of users.

This first zoning plan for Tallurutiup Imanga NMCA is based on the national Parks Canada NMCA zoning framework (Appendix A). The NMCA framework comprises four zones, each with a specific purpose, objectives, and set of allowable activities and uses. The purpose of each zone is described in Figure 5.1.

ZONE 1 STRICT PROTECTION	ZONE 2 GENERAL PROTECTION	ZONE 3 HABITAT PROTECTION	ZONE 4 MULTIPLE USE
PURPOSE Strictly protects special features and sensitive ecosystem elements that are susceptible to disturbance. Access and extractive uses are prohibited.	PURPOSE Protects special features, sensitive ecosystem elements and representative characteristics of the marine regions while providing for compatible access and non-extract uses. Extract use is prohibited.	PURPOSE Protects specific habitats while providing for compatible uses and extractive uses. Some uses are prohibited to support specific habitat conservation objectives.	PURPOSE Sustains the greatest range of uses that do not compromise, ecological sustainability, cultural resources, or heritage values.

Figure 5.1 The purpose of each zone in the NMCA zoning framework
(Source: Directive on the Management of National Marine Conservation Areas).

The following activities are prohibited in all zones:

- Use or disposition of public lands without authority (CNMCAA s. 12);
- Exploration and exploitation of non-renewable resources (CNMCAA s. 13); and
- Disposal of substances in waters except as authorized by a permit (CNMCAA s. 14) or as required for vessel safety and security.

In general, activities and uses that are consistent with the purpose and objectives of the zone are allowed, subject to applicable legislation, regulations, site-specific review processes, authorizations and permitting requirements. For all zones, impact assessments to assess and manage the impacts of proposed projects will be conducted as per the Nunavut Planning and Project Assessment Act and Parks Canada’s policies and guidance on impact assessment. Cumulatively, all activities and uses in an NMCA must be conducted in a manner and at a rate and scale that are ecologically sustainable. More details on the allowable activities and uses in each zone, and what additional permissions or authorizations may be required (for example a permit or license), are described in Appendix A.

Inuit rights, as set out in the Nunavut Agreement, and traditional use of the NMCA by Inuit are not subject to zone restrictions. Inuit rights are often exercised to support food sovereignty, cultural practices, and community health and well-being. The zoning regime for Tallurutiup Imanga NMCA recognizes and protects Inuit rights, particularly where use conflicts exist or are anticipated.

In addition, the zoning regime and management of Tallurutiup Imanga NMCA does not restrict, prohibit, or have the effect of restricting or prohibiting activities or uses with respect to national security or sovereignty, safe navigation, defence, law enforcement and activities allowing for the proper conduct of the external affairs of Canada, including navigation through the ice. Canadian Coast Guard activities shall not be restricted, including those related to the resupply of northern communities, icebreaking, vessel safety, marine pollution prevention and response, and in the event of an emergency or in relation to search and rescue. Additional exceptions for activities such as research, compliance monitoring and the placement of navigational aids may be warranted to avoid unintended impacts to these important activities. Resupply of northern communities by private shipping companies is not restricted. In addition, provisions are not to apply to an individual vessel movement if the sole purpose of the vessel movement is to engage in innocent passage through the waters of the Canadian Arctic, without intending to stop while engaging in said passage through the Arctic waters.

5.2 Tallurutiup Imanga NMCA Zoning Plan

The Tallurutiup Imanga NMCA zoning plan is based on currently available Inuit Qaujimajatuqangit, science, and discussions with local communities, stakeholders, Inuit organizations, and federal and territorial departments, who identified areas and ecosystems in greatest need of protection.

Given the seasonal differences between open water and sea ice coverage, and the annual migration patterns of wildlife in the area, Tallurutiup Imanga NMCA has been divided into two seasonal zoning plans: one for the time of year when the area is largely ice-covered and one for the time of year dominated by open water. This seasonal approach to zoning helps manage the range of anticipated uses and wildlife conservation needs within the NMCA throughout the year. The dates for the ice season and open water season zoning plans are based on the Inuit seasonal cycle, which in Nunavut consists of six seasons with dates varying by region (Figure 5.2) and on consultations with the five associated communities.

Both the ice and open water season zoning plans contain only zone 1, 3 and 4 areas (Figures 5.3 and 5.4). There are currently no zone 2 areas in the NMCA.

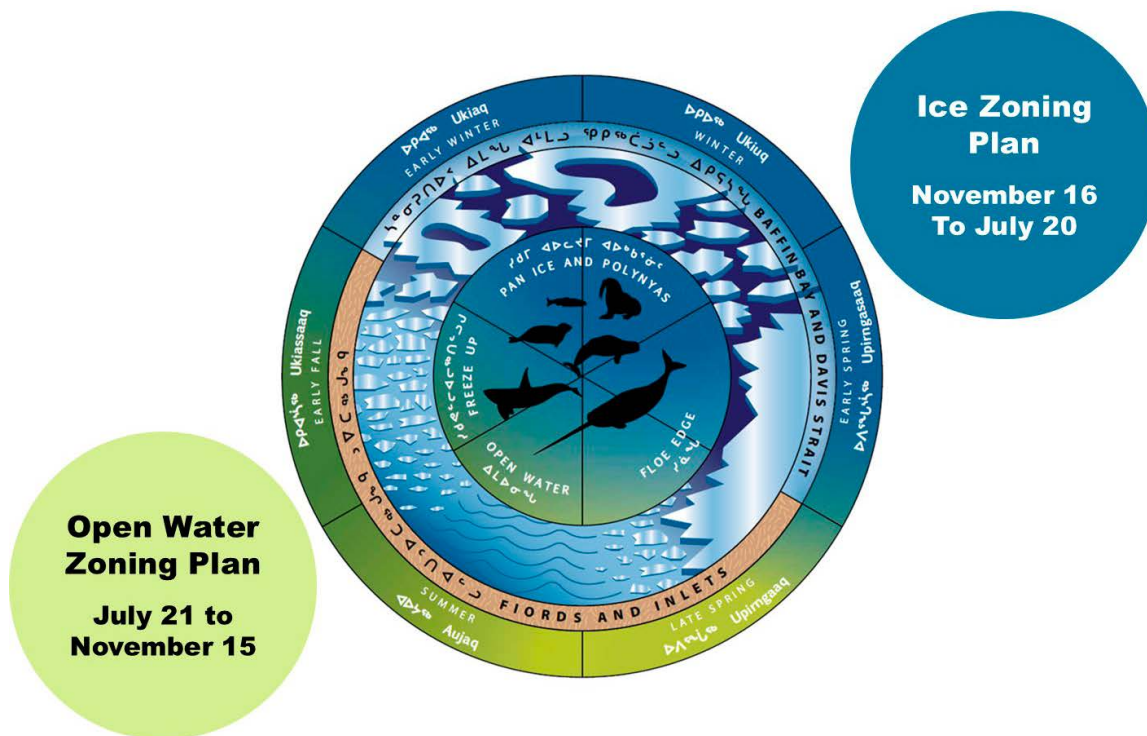


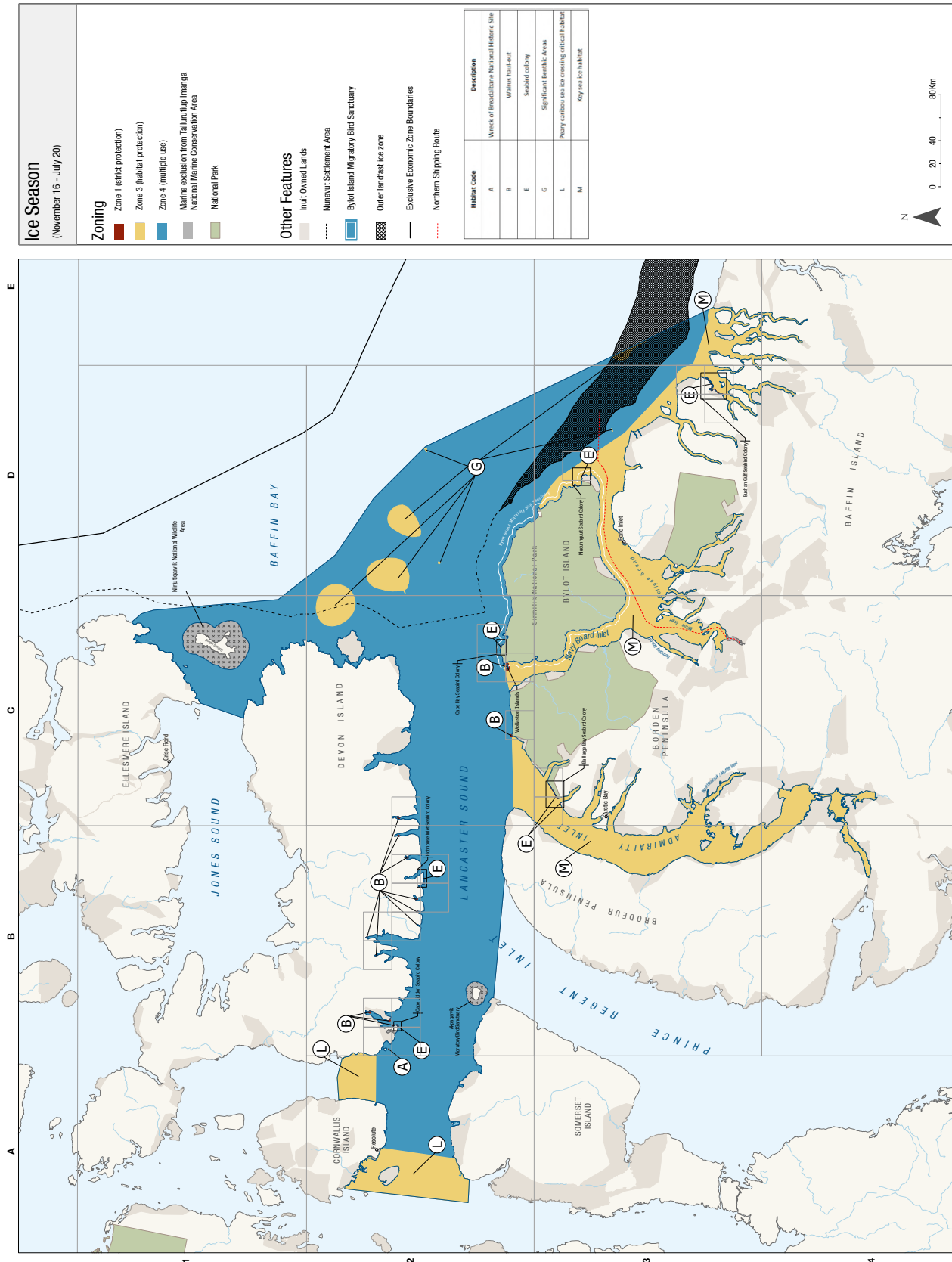
Figure 5.2 Effective dates and seasons for the ice season and open water season zoning plans for Tallurutiup Imanga NMCA based on the traditional Inuit cycle of seasons in the North Baffin region and community consultations.

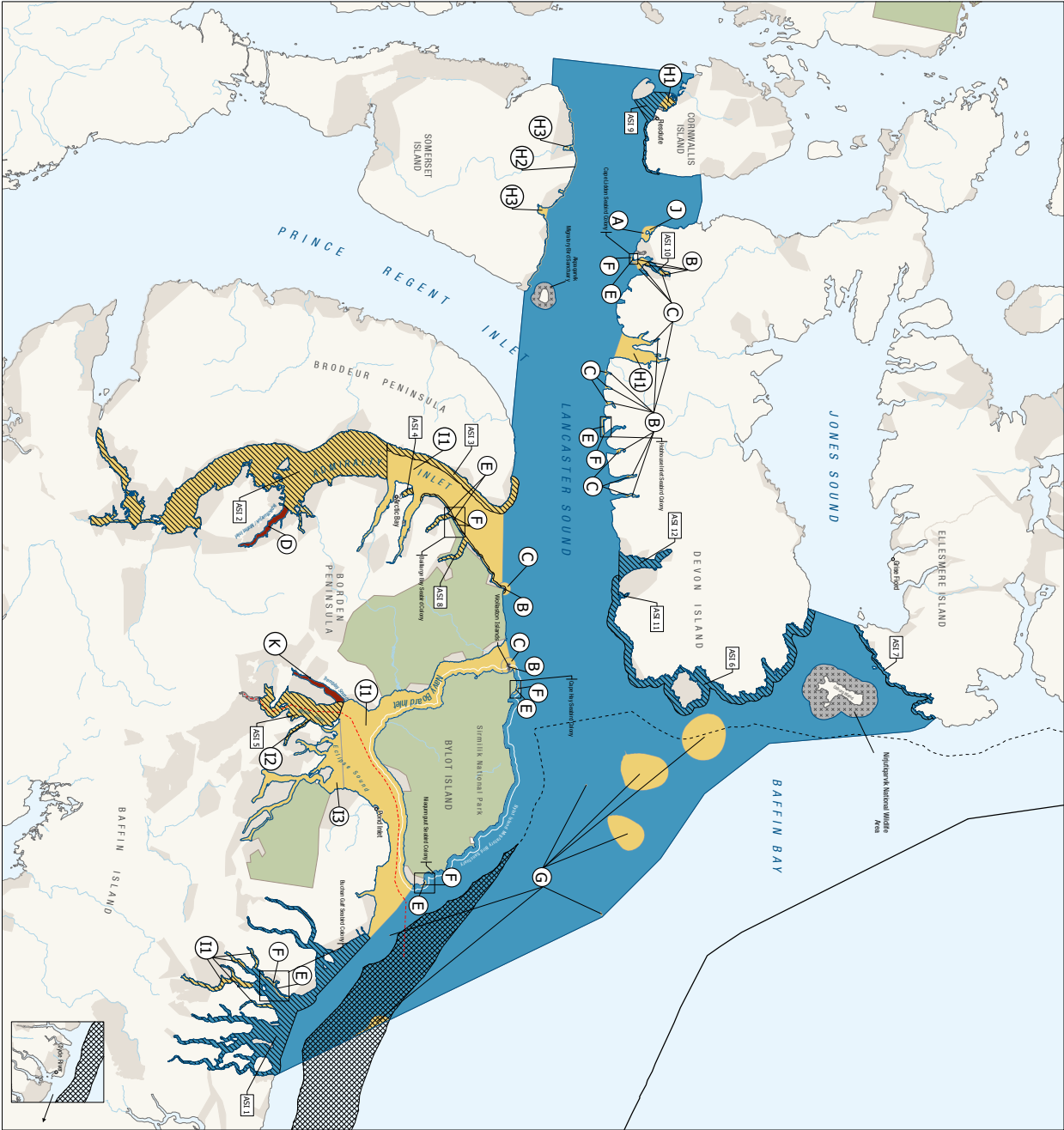
5.2.1 Zone 1: Strict Protection

Zone 1 strictly protects special features and sensitive ecosystem elements that are susceptible to disturbance. Access and extractive use are prohibited. Research and monitoring activities consistent with the purpose and objectives of the zone and supporting the protection and conservation of the site may be permitted. Inuit rights, as set out in the *Nunavut Agreement*, and traditional use of the NMCA by Inuit are not subject to zone restrictions. Refer to Appendix A for details of allowable activities and applicable authorizations.

Zone Objectives:

- To protect special features and/or sensitive ecosystem elements in as undisturbed a state as possible.
- To restore or recover depleted or degraded special features and/or sensitive ecosystem elements.
- To provide reference areas for research.
- To contribute to maintaining biodiversity.





Open Water Season

(July 21 - November 15)

Zoning

- Zone 1 (strict protection)
- Zone 3 (fisheries protection)
- Zone 4 (multiple use)
- Area of special importance to communities (AS)
- Marine exclusion from Tallurutiup Imanga
- National Marine Conservation Area
- National Park

Other Features

- land owned lands
- Nunavut Settlement Area
- Bylot Island Migratory Bird Sanctuary
- Outer landfall ice zone
- Exclusive Economic Zone boundaries
- Northern Shipping Route

Habitat Code	Description
A	Wreck of pre-colonial Inuit site
B	Waterside outfall
C	Waterside outfall
D	Highly productive / Marine life
E	Scallop colony
F	Scallop colony buffer
G	Significant benthic areas
H1, H2, H3	Ringed summer aggregation area
I1, I2, I3	Northern summer aggregation area
J	Underwater cultural resource area
K	Therapeutic Sound

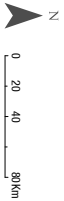


Figure 5.4 Tallurutiup Imanga NMCA open water season zoning plan.



The following areas are identified as requiring strict protection and thus have been designated Zone 1:

i. Wreck of Breadalbane National Historic Site of Canada (A in Figures 5.3 and 5.4): The Wreck of Breadalbane National Historic Site of Canada is located off the southeast coast of Beechey Island, at 74° 40' 51" north latitude and 91° 48' 57" west longitude. It is comprised of the wreckage of *Breadalbane*, a 19th-century, 500-ton sailing ship, including the hull, fragments of the vessel and the debris field caused by the sinking of the ship. It was designated a national historic site in 1983 because the ship was involved in the search for Captain John Franklin's lost expedition, and it is a well-preserved example of a mid-19th century merchant transport ship uniquely adapted for an Arctic voyage. The site is strictly protected to limit further deterioration of the archaeological site. The zone 1 area is a 250-m radius circle centered on the mid-point of the hull.

ii. Walrus haul-out sites (B in Figures 5.3 and 5.4): Walrus use pack ice for much of the year, but when suitable sea ice is unavailable, walrus haul out in herds ranging from several individuals to thousands of animals at terrestrial haul-out sites that offer easy access to the water for feeding and escape from predators or other disturbances. Walrus are known to show strong site fidelity to established haul-out sites. However, prolonged, or repeated disturbances may cause walrus to abandon their haul-outs. Their ability to recolonize these areas is unknown. Human disturbances that cause walrus to leave their haul-outs may impact population dynamics by causing stampedes (which result in mortality); interfering with feeding and increasing energy expenditures; masking walrus communications; impairing thermoregulation and increasing stress levels. Thirteen walrus haul-out sites are identified in Tallurutiup Imanga NMCA as "active" by Fisheries and Oceans Canada

and/or by associated communities. For these sites, year-round strict protection has been applied as follows:

- For the Wollaston Islands (group of islands off the northeast corner of Bylot Island), the zone 1 area includes the islands themselves, plus a 1-km buffer around the perimeter of the islands.
- For all other haul-outs, the terrestrial haul-outs themselves are located on land outside the boundary of the NMCA. In these cases, any area that is located both within 1 km of the haul-out and within the NMCA boundaries is a zone 1.

The purpose of the year-round strict protection for these areas is to protect walrus and their habitat from disturbance; maintain habitat integrity and prevent abandonment.

iii. Seabird colonies (E in Figures 5.3 and 5.4): There are six key migratory bird habitat sites within and adjacent to Tallurutiup Imanga NMCA supporting multiple species of colonial seabirds:

- Cape Liddon seabird colony (southwest coast of Devon Island):** Supports approximately 4% of the national population of Northern Fulmar.
- Hobhouse Inlet seabird colony (south coast of Devon Island):** Supports approximately 11% of the national population of Northern Fulmar.
- Baillarge Bay seabird colony (northwest coast of Borden Peninsula):** Supports approximately 13% of the national population of Northern Fulmar.
- Cape Hay seabird colony (northwest Bylot Island):** Approximately 83 000 pairs of Thick-billed Murres and 12 000 pairs of Black-legged Kittiwakes, representing about 4% and 5% of the Canadian population, respectively, nest at Cape Hay.
- Niaqunnguut seabird colony (southeast Bylot Island):** Approximately 52,000 pairs of Thick-billed Murres and 3,000 pairs of Black-legged Kittiwakes, representing 2.3% and 1.1% of the Canadian populations, respectively, nest about 7 km north of Niaqunnguut.
- Buchan Gulf seabird colony (east coast of Baffin Island, southeast of Pond Inlet):** Supports approximately 4% of the national population of Northern Fulmar.

For three of these sites, the terrestrial coastal cliffs where the seabirds breed are included within the NMCA boundary: Cape Liddon seabird colony (southwest coast of Devon Island), Hobhouse Inlet seabird colony (south coast of Devon Island) and a portion of Buchan Gulf seabird colony (east coast of Baffin Island) (Figure 1.2).

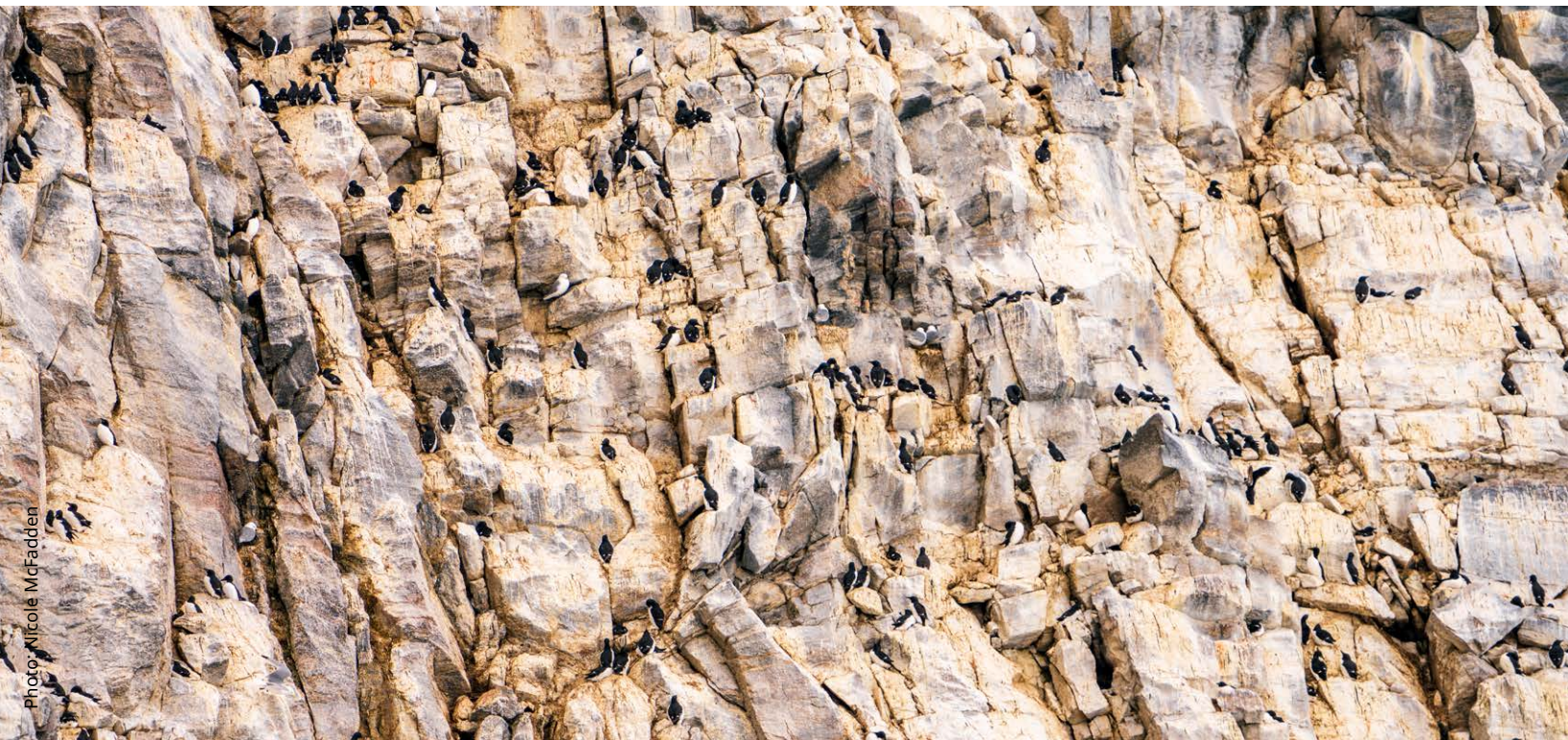
These seabird colonies have high conservation value and are moderately to highly risk-intolerant. Seabirds use these areas from their spring arrival in the Arctic (starting about April 15) until their departure at the end of summer (about October 1) for nesting, chick rearing and foraging. The high concentrations of seabirds at these discrete sites, combined with their high-energy demands and sensitivity to disturbance during this life cycle stage, means that conservation of these Arctic seabird colonies has significant implications for the long-term survival of several species. The main threats to these seabird colonies are increasing disturbances from marine ship traffic, including human disturbance related to cruise ship tourism, and

the risk of oil spills and operational releases originating from ships. A risk of bycatch from commercial fishing activities may become a future threat if fisheries expand in the Arctic and further into Tallurutiup Imanga NMCA.

To protect these seabird colonies, the nesting cliffs located within the NMCA boundary, where applicable, plus a 100-m buffer extending seaward from the cliff, for all colonies, are designated zone 1. Colonial seabirds exhibit strong nesting site fidelity, so zone 1 prohibitions are in place year-round to protect the nesting habitat for when the birds return.

iv. Ikpikittuarjuk/Moffet Inlet (D in figure 5.4): Ikpikittuarjuk/Moffet Inlet is valued by local communities, specifically Arctic Bay, for its abundance of bowhead whale, narwhal, walrus, and Arctic char. Local Inuit have observed a decline in char abundance in Ikpikittuarjuk/ Moffet Inlet. The area is zone 1 during the open water season (July 21 to November 15) to allow the population time to recover.

v. Tremblay Sound (K in figure 5.4): Eclipse Sound is used by narwhal during the open water season as a migration corridor between their summering and overwintering areas. Within the Eclipse Sound summer aggregation area, narwhal are concentrated within Milne Inlet and Tremblay Sound. These areas may provide refuge from killer whales which feed in Eclipse Sound. Tremblay Sound experiences little to no large vessel traffic and is an important harvesting area for Inuit. This is a contrast to Milne Inlet, where the Baffinland Iron Mine Corporation Mary River Port and associated vessel traffic is located. To maintain Tremblay Sound as a quiet refuge for narwhal, the area has been identified as zone 1 during the open water season (July 21 to November 15). Tremblay Sound has also been an important site for several narwhal research and monitoring studies. Research and monitoring activities consistent with the purpose and objectives of this zone and supporting the protection and conservation of the site will continue to be permitted when supported by the Aulattiqatigiit Board.





5.2.2 Zone 2: General Protection

Zone 2 protects special features, sensitive ecosystem elements and representative characteristics of the marine region while providing for compatible access and non-extractive uses. Extractive use is prohibited. Inuit rights, as set out in the *Nunavut Agreement*, and traditional use of the NMCA by Inuit are not subject to zone restrictions. Refer to Appendix A for details of allowable activities and applicable authorizations.

Zone Objectives:

- To protect representative characteristics of the marine region and contribute to maintaining biodiversity.
- To protect special features and/or sensitive ecosystem elements.
- To restore or recover depleted species or degraded habitats.
- To provide research opportunities.
- To provide opportunities for education and non-extractive recreation.
- To foster awareness, understanding and enjoyment of NMCAs.

There are currently no zone 2 General Protection areas in Tallurutiup Imanga NMCA. Through Article 16 of the IIBA for Tallurutiup Imanga NMCA, the Parties made a commitment to explore the potential for new sustainable fishing opportunities within and adjacent to Tallurutiup Imanga NMCA if compatible and consistent with management planning and the principles of conservation. Considering that there is little commercial fishing pressure in Tallurutiup Imanga NMCA at the present time, and that a prohibition on extractive uses through large zone 2 areas could negatively impact the outcome of Article 16 and potential economic opportunities stemming from sustainable fisheries, no zone 2 areas are designated in Tallurutiup Imanga NMCA.

While the Parties are implementing Article 16 commitments, an alternative approach has been taken with respect to zoning. Rather than implementing the concept of a large area with full protection as envisioned in zone 2, zone 3 has been

used to protect sensitive ecosystem elements and representative characteristics of Tallurutiup Imanga NMCA without unduly limiting potential fisheries opportunities. The use of zone 2 will be reconsidered in the next management plan when recommendations on where any future potential fishery activity may be compatible with the management objectives of the NMCA are available (IIBA s.16.4.2).

5.2.3 Zone 3: Habitat Protection

Zone 3 protects specific habitats while providing for compatible access and extractive uses. Some uses are prohibited to support specific habitat conservation objectives. Inuit rights, as set out in the Nunavut Agreement, and traditional use of the NMCA by Inuit are not subject to zone restrictions.

Zone Objectives:

- To protect, conserve or restore a specific habitat.
- To support a range of uses that do not conflict with the specific conservation objective(s) of the zone.
- To provide opportunities for research, education and appreciation of the habitat protected by the zone.

Zone 3 allows for a customizable approach to allowable uses and activities. Therefore, most of the activities and uses are identified as conditional ('C') in zone 3 in the national framework (Appendix A). The list of allowable activities was assessed during zoning development based on the habitat being protected. The list of compatible activities and uses for each zone 3 area is specific to Tallurutiup Imanga NMCA; details on the allowed and prohibited activities are identified in tables 5.1 and 5.2. The limits, permits, and exceptions outlined in Appendix A apply within zone 3. The specific prohibitions and restrictions are different between seasonal zoning plans to account for the environmental changes between the ice and open water season and corresponding wildlife migration patterns and their relationship to Inuit use of the NMCA (Figure 5.2).

1. ICE SEASON (NOVEMBER 16 TO JULY 20)

During the ice season zoning plan, the following areas have been identified as Zone 3 – Habitat Protection:

i. Key sea ice habitat (L and M in Figure 5.3): The key sea ice habitat areas described below have been identified as zone 3 to protect the structure and function of sea ice habitat important for several wildlife species (for example, seals, polar bears, Peary caribou) and the exercising of Inuit rights (such as travel, access, and harvesting). All shipping activity is prohibited in these zone 3 areas during the ice season (November 16 to July 20), subject to safe navigation, and except for:

- 1) activities and uses listed in section 5.1;
- 2) shipping activity in a project approved on or before the date the amendment to add Tallurutiup Imanga NMCA to Schedule I of the CNMCAA comes into force,

when conducted in accordance with the terms and conditions of the project certificate in effect at that date¹; and

- 3) valid conservation reasons that are assessed on a case-by-case basis (for example to free trapped whales).

The dates during which the prohibition on shipping activity is in effect may be varied to allow shipping before July 21 or after November 16 in all or part of these zones if the variation will not negatively impact:

- the structure and function of ice habitat and associated ecosystems;
- exercise of Inuit rights in the area;
- public safety; or
- recovery of species at risk².

The key sea ice areas included in the above are:

- a) **Peary caribou sea ice crossing critical habitat (L in figure 5.3):** Peary caribou are listed as threatened under the *Species at Risk Act*. The final Recovery Strategy* for Peary caribou included the identification of two sea ice crossings within Tallurutiup Imanga NMCA as critical habitat. The critical habitat in Tallurutiup Imanga NMCA is the only bridge connecting two local populations. Under the *Species At Risk Act*, it is illegal to destroy any part of the critical habitat; any activity that inhibits the safe movement of caribou between islands when needed is considered destruction of critical habitat. This includes activity that prevents ice from forming, that breaks up the critical sea ice habitat immediately prior to anticipated caribou crossings, or that leaves an open channel for a length of time that blocks caribou movement. This includes any shipping activity that breaks sea ice or prevents ice from forming.
- b) **Other key sea ice habitat (M in figure 5.3):** Admiralty Inlet, Navy Board Inlet, Eclipse Sound, and the fjords north of Clyde River have all been identified as key sea ice habitat. These areas are important wildlife habitat and valued by communities as on-ice travel routes and hunting grounds.
- **Admiralty Inlet:** Significant to Inuit especially for Arctic Bay residents who hunt narwhal, polar bear, seal, caribou, geese, and fish in the southern portions of the inlet.
 - **Navy Board Inlet:** Characterized by several short, protected bays and Sirmilik National Park on either side, this narrow inlet is lined with Inuit camps.
 - **Eclipse Sound and Milne Inlet:** Valued by communities as hunting grounds and characterized by temporal features such as the floe edge. The attraction and subsequent abundance of wildlife to the floe edge draws hunters, visitors, and tour operators alike. Ice and wildlife found here are susceptible to disturbances such as early ice breaking and disturbance through ship passage.
 - **Fjords north of Clyde River:** Valued by communities as important wildlife habitat and for hunting grounds.

1. Such as Baffinland Iron Mines Corporation Mary River Project certificate term and condition no. 185

2. Sea ice can promptly reform (within a few days) after disturbance under specific conditions (such as weather conditions, and timing and frequency of the disturbance) and as such, it may be possible to transit through sea ice within areas identified as critical habitat without destroying critical habitat, if the sea ice critical habitat is available to Peary caribou when needed.

* www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/peary-caribou-2022.html

Activities and Uses	ICE SEASON ZONE 3 AREAS			Specific prohibitions and restrictions
	Peary Caribou sea ice crossings (L)	Other key sea ice habitat (M)	Significant Benthic Areas (G)	
Indigenous traditional use	✓	✓	✓	None
Research, monitoring, and restoration	✓	✓	✓	None
Recreational activities (non-extractive)	✓	✓	✓	None
Commercial tourism (non-extractive)	✓	✓	✓	Key sea ice habitat (L and M) - Commercial tourism activities that include shipping activity (for example, cruise ships) are prohibited. - Ice-based commercial tourism activities must not disturb Peary caribou.
Coastal and in-water infrastructure	✓	✓	✓	Key sea ice habitat (L and M) - Infrastructure that significantly breaks ice or prevents/ temporarily prevents ice from forming may not be permitted. Significant Benthic Areas (G) - Bottom-contact infrastructure not permitted.
Commercial shipping	✗	✗	✓	Not applicable
Recreational fishing	✓	✓	✓	Significant Benthic Areas (G): Mobile bottom contact gear prohibited.
Commercial fisheries	✓	Recreational allowed	✓	Key sea ice habitat (L and M) - Commercial fishing activities that break ice or prevent/temporarily prevent ice from forming is prohibited. Significant Benthic Areas (G): - Mobile bottom contact gear prohibited.
Hunting, trapping, and gathering (non-rights based)	✓	✓	✓	None
Placement of artificial reefs for recreational purposes	✗	✗	✗	Not applicable
Bottom trawling	✗	✗	✗	Not applicable
Oil and gas and mineral exploration and exploitation	✗	✗	✗	Not applicable

Table 5.1 Allowable and prohibited activities and uses in ice season zone 3 areas. Applicable limits, permits and exceptions listed in Appendix A apply. Letters in column headings refer to Figure 5.3.

ii. Significant Benthic Areas (G in Figure 5.3): Seven 'Significant Benthic Areas' have been identified in Tallurutiup Imanga NMCA by Fisheries and Oceans Canada due to the presence of dense aggregations of sea pens, a type of colonial coral. Sea pen stands provide valuable structure and habitat diversity; alter flow regimes leading to nutrient retention and a more favourable environment for benthic invertebrates; and are often considered to be essential nursery habitat. Bottom contact fishing gear has been identified as a habitat threat as they can remove or damage sea pens and other species of corals and sponges. This is particularly true for organisms adapted to low natural disturbance levels, such as those found in the deep, cold waters of the Canadian Arctic. It may take some coral and sponge species decades or even centuries to fully recover from bottom trawling. Mobile bottom contact fishing gear is prohibited in these zone 3 areas to protect sea pen aggregations.

2. OPEN WATER SEASON (JULY 21 TO NOVEMBER 15)

During the open water season zoning plan, the following areas have been identified as Zone 3 Habitat Protection:

i. Walrus haul-out buffers (C in Figure 5.4): A further zone 3 buffer extending 4 km seaward from the outer edge of the zone 1 boundary is applied to walrus haul-outs to provide additional protection from disturbance during the open water season when walrus are congregating. Commercial shipping, and commercial and recreational fishing are prohibited. Recreational activities and commercial tourism are allowed in the zone 3 area, with the following restrictions based on vessel size (Figure 5.5):

- Vessels under 50 ft in length, such as kayaks and zodiacs, may navigate anywhere within the zone 3 area.
- Vessels 50 to 100 ft in length may enter the zone 3 area but must always remain at least 2 km from the haul-out (1 km from the outer edge of the zone 1 boundary).
- Vessels greater than 100 ft in length are prohibited from accessing or transiting through these zone 3 areas.

In addition, it is prohibited to pilot an aircraft at an altitude lower than 5 000 ft within walrus haul-out buffers, except as required for the safe operation of the aircraft, including take offs and landings.

Exceptions may apply for the following activities:

- Scientific research vessels or scientific research activities through the research permitting process.
- Commercial tourism operators with vessels > 100 ft seeking to enter the following areas on the southern coast of Devon Island, subject to permit conditions as stipulated in their business license. Commercial tourism operators seeking this exception must demonstrate community support for the exception.
 - o **Radstock Bay.** This exception will allow vessels to transit through the Zone 3 areas associated with the two walrus haul-outs at the entrance of Radstock Bay.

These transits must maintain the maximum possible distance from the Zone 1 areas associated with these two walrus haul-outs, subject to safe navigation.

- o **Graham Harbour, Parry Channel, and Blangley Bay.** This exception will allow vessels safe shelter in these bays. Vessel must shelter as far as possible from Zone 1 areas associated with walrus haul-outs in these bays.

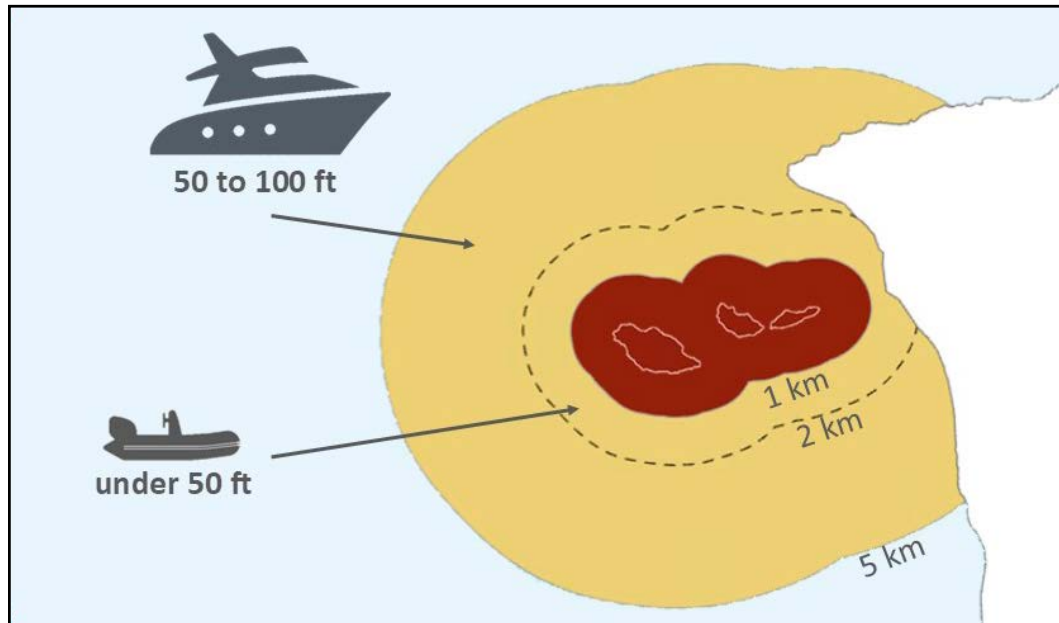


Figure 5.5 Approach distance restrictions based on vessel size for activities allowed in zone 3 walrus haul-out buffers. Dark red is zone 1, yellow is zone 3. There is no access to the zone 1 area, except with a research permit.

ii. Seabird colony buffers (F in Figure 5.4): A zone 3 buffer starting at the zone 1 boundary and extending 1.5 km seaward further protects seabird colonies during the open water season when birds are present. Commercial fishing, commercial shipping and transiting vessels are prohibited in zone 3 seabird colony buffer areas, other than as required for safety. Recreational activity, recreational fishing and commercial tourism vessels are allowed in the zone 3 area with the following restrictions based on vessel size (Figure 5.6):

- Vessels under 50 ft, such as kayaks and zodiacs, may navigate anywhere within the zone 3 area.
- Vessels 50 ft and greater in length may enter the zone 3 areas but must always remain at least 500 m from the colony.

A 500-m setback from the colony shall be observed by community resupply vessels when birds are present, except when adhering to it would prevent safe community resupply. In addition, it is prohibited to pilot an aircraft at an altitude lower than 1 100 m (3 500 ft) within the zone, except as required for the safe operation of the aircraft. Additional aerial, marine, and terrestrial migratory bird setbacks may apply for some authorized activities and uses.

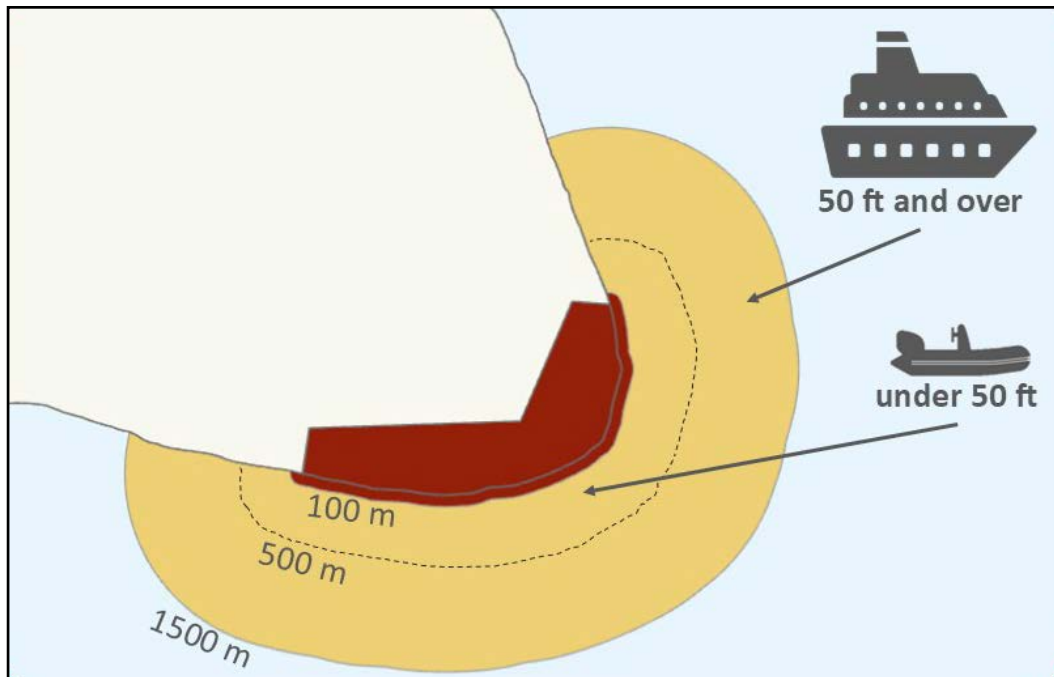


Figure 5.6 Approach distance restrictions for different vessel sizes for activities allowed in zone 3 seabird colony buffers. Dark red is zone 1, yellow is zone 3. There is no access to the zone 1 area, except with a research permit.

iii. Significant Benthic Areas (G in Figure 5.4): The seven ‘Significant Benthic Areas’ protected in the ice season are also protected in the open water season. Mobile bottom contact fishing gear is prohibited in these zone 3 areas to protect sea pen aggregations.

iv. Beluga summer aggregation areas (H1, H2, and H3 in Figure 5.4): Beluga whales from the Eastern High Arctic-Baffin Bay population spend the summer (approximately July to September) in the fiords and inlets around Somerset and Devon Islands before migrating to Sarvarjuaq (North Water Polynya) and west Greenland for the winter (approximately November to April). This beluga population has been assessed by the Committee On the Status of Endangered Wildlife In Canada as ‘Special Concern’ (November 2020). Belugas are sensitive to noise and disturbance and therefore can be negatively affected by some human activities (for example, icebreaking, boat and ship traffic, seismic surveys, low-flying aircraft). Noise propagates easily in shallow water estuaries. Four shallow estuaries known to be beluga summer aggregation areas have been identified in Tallurutiup Imanga NMCA and designated zone 3 to protect beluga habitat: Kippaarittuq/Cunningham Inlet, Garnier Bay, Maxwell Bay, and Allen Bay. These areas are important beluga molting and calving grounds that are revisited annually by large groups of belugas. In addition, a 1-km strip stretching along the entire northern coast of Somerset Island has been designated as zone 3 to protect aggregations of belugas. Activity restrictions in these areas are as follows:

- **Kippaarittuq/Cunningham Inlet and Garnier Bay (H3 in Figure 5.4):** To protect beluga in these small, shallow bays, no motorized access is permitted in these areas. Commercial shipping and commercial fishing are prohibited. It is prohibited to pilot an aircraft at an altitude lower than 2 000 ft except for safety reasons and for specified operational purposes such as take-offs and landings. The installation of coastal and in-water infrastructure is prohibited.
- **Maxwell Bay and Allen Bay (H1 in Figure 5.4):** In these larger bays, motorized access is allowed for commercial tourism and recreational activities. Commercial shipping and commercial fishing are prohibited. It is prohibited to pilot an aircraft at an altitude lower than 2 000 ft except for safety reasons and for specified operational purposes such as take offs and landings. The installation of coastal and in-water infrastructure is prohibited.
- **Northern coast of Somerset Island (H2 in Figure 5.4):** Motorized access is allowed for small vessels, so as not to impede terrestrial access along the coast. Commercial shipping and commercial fishing are prohibited. It is prohibited to pilot an aircraft at an altitude lower than 2 000 ft except for safety reasons and for specified operational purposes such as take-offs and landings. Small scale coastal and in-water infrastructure that would support access to terrestrial sites for commercial tourism or recreation activities may be permitted.



Photo: N. Boisvert



Photo: Diane Blanchard

v. Narwhal summer aggregation areas

(I1, I2, I3 in Figure 5.4): The narwhal that inhabit Tallurutiup Imanga NMCA are a part of the Baffin Bay population; the largest narwhal population in the world. Narwhals from the Baffin Bay population overwinter in Baffin Bay and Davis Strait before migrating to recurring summer aggregation areas in the fiords and inlets of northeastern Canada and northwest Greenland. For harvest management purposes, the Baffin Bay population is divided into four summering stocks (Admiralty Inlet, Eclipse Sound, Somerset Island, and East Baffin) and two tentative stocks (Jones Sound and Smith Sound) based on these recurring summer aggregation

areas. Although it was previously assumed that narwhal stayed in their summer aggregation area, more recent telemetry data suggests some mixing, especially between Eclipse Sound and Admiralty Inlet. Four summer aggregation areas fully or partially within the NMCA have been identified as zone 3:

- 1) Northern Eclipse Sound and Navy Board Inlet (I1) and Milne Inlet (I2);
- 2) the southern fiords of Eclipse Sound (I3);
- 3) Admiralty Inlet (I1); and
- 4) the portion of the East Baffin stock within Tallurutiup Imanga NMCA (fiords north of Clyde River (I1).

There is a voluntary maximum speed limit of 9 kn for all vessels of 300 GT or more in these zone 3 areas. Tremblay Sound, which is part of the Eclipse Sound summer aggregation area, has been identified as a zone 1 (see section 5.2 Zone 1). In addition, the southern fiords of Eclipse Sound (I3) and Milne Inlet (I2) have additional prohibitions to limit the level of disturbance, including a prohibition on cruise ship access in both and a prohibition on commercial shipping in the southern fiords.

vi. Underwater cultural resource area (J in Figure 5.4): There are cultural resources in the shallow waters in the waters surrounding Beechey Island. To protect known and potential cultural resources, diving and submersible use are prohibited, to prevent disturbance of the ocean floor or underwater artefacts.

Table 5.2 Allowable and prohibited activities and uses in open-water season zone 3 areas. Applicable limits, permits and exceptions listed in Appendix A apply. Letters in column headings refers to Figure 5.4.

Activities and Uses	OPEN-WATER SEASON ZONE 3 AREAS					
	Walrus haul-out buffer (C)	Seabird colony buffers (F)	Significant Benthic Areas (G)	Beluga summer aggregation areas (H1, H2, H3)	Narwhal summer aggregation areas (I1, I2, I3)	Underwater cultural resource area (J)
Indigenous traditional use	✓	✓	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: None					
Research, monitoring, and restoration	✓	✓	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: None					
Recreational activities (non-extractive)	✓	✓	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: Walrus haul-out buffer (C) • Vessels greater than 100 ft in length are prohibited. • Vessels 50 to 100 ft in length must remain at least 1 km from the outer edge of the zone 1 area around the haul-out. • Vessels under 50 ft may navigate anywhere in the zone 3 area. • A minimum flying altitude of 5000 ft (1500 m) must be maintained, except for safety reasons and for specified operational purposes such as take offs and landings. Seabird colony buffers (F) • Transiting vessels are prohibited. • Authorized vessels 50 ft in length and greater must remain at least 500 m from the colony. • Authorized vessels under 50 ft may navigate anywhere in the zone 3 area. • A minimum flying altitude of 3500 ft (1100 m) must be maintained, except for safety reasons and for specified operational purposes such as take offs and landings. Beluga summer aggregation areas (H1, H2, H3): • A minimum flying altitude of 2000 ft (610 m) must be maintained in H1, H2, H3, except for safety reasons and for specified operational purposes such as take offs and landings. • Vessel access to H2 limited to small vessels. • No motorized vessel access in H3 (Kipparittuq/Cunningham Inlet and Garnier Bay). Narwhal summer aggregation areas (I1, I2, I3): • Voluntary speed limit of 9kn for all vessels of 300 GT or more. Underwater cultural resource area (J): • Diving and submersible use are prohibited.					

Activities and Uses	OPEN-WATER SEASON ZONE 3 AREAS					
	Walrus haul-out buffer (C)	Seabird colony buffers (F)	Significant Benthic Areas (G)	Beluga summer aggregation areas (H1, H2, H3)	Narwhal summer aggregation areas (I1, I2, I3)	Underwater cultural resource area (J)
Commercial tourism (non-extractive)	✓	✓	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: Walrus haul-out buffer (C) • Vessels greater than 100 ft in length are prohibited. • Vessels 50 to 100 ft in length must remain at least one km from the outer edge of the zone 1 area around the haul-out. • Vessels under 50 ft may navigate anywhere in the zone 3 area. • A minimum flying altitude of 5000 ft (1500 m) must be maintained, except for safety reasons and for specified operational purposes such as take offs and landings. Seabird colony buffers (F) • Transiting vessels are prohibited. • Authorized vessels 50 ft in length and greater must remain at least 500 m from the colony. • Authorized vessels under 50 ft may navigate anywhere in the zone 3 area. • A minimum flying altitude of 3500 ft (1100 m) must be maintained, except for safety reasons and for specified operational purposes such as take offs and landings. Beluga summer aggregation areas (H1, H2, H3) • A minimum flying altitude of 2000 ft (610 m) must be maintained in H1, H2, H3, except for safety reasons and for specified operational purposes such as take offs and landings. • Vessel access to H2 limited to small vessels. • No motorized vessel access in H3 (Kipparittuq/Cunningham Inlet and Garnier Bay). Narwhal summer aggregation areas (I1, I2, I3): • Voluntary vessel speed limit of 9 kn for all vessels of 300 GT or more. • Cruise ships are prohibited in the southern fiords of Eclipse Sound (I3) and in Milne Inlet (I2). Underwater cultural resource area (J): • Diving and submersible use are prohibited.					
Coastal and in-water infrastructure	X	X	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: Beluga summer aggregation areas (H1, H2, H3): • The installation of coastal and in-water infrastructure in areas H1 and H3 is prohibited; coastal and in-water infrastructure for the purpose of access to terrestrial sites for commercial tourism or recreational activities may be permitted in area H2. Significant Benthic Areas (G) • Bottom-contact infrastructure not permitted. Underwater cultural resource area (J): • Bottom-contact infrastructure not permitted.					

Activities and Uses	OPEN-WATER SEASON ZONE 3 AREAS					
	Walrus haul-out buffer (C)	Seabird colony buffers (F)	Significant Benthic Areas (G)	Beluga summer aggregation areas (H1, H2, H3)	Narwhal summer aggregation areas (I1, I2, I3)	Underwater cultural resource area (J)
Commercial shipping	X	X	✓	X	✓	✓
	Activity- and use- specific prohibitions and restrictions: Narwhal summer aggregation areas (I1, I2, I3): • Voluntary vessel speed limit of 9 kn for vessels of 300 GT or more. • Commercial shipping is prohibited in the southern fiords of Eclipse Sound (I3).					
Recreational fishing	X	✓	✓	✓	✓	✓
	Activity- and use- specific prohibitions and restrictions: Seabird colony buffers (F): • Transiting vessels prohibited. • Authorized vessels 50 ft in length and greater must remain at least 500 m from the colony. • Authorized vessels under 50 ft may navigate anywhere in the zone 3 area. Significant Benthic Areas (G): • Mobile bottom contact gear prohibited. Beluga summer aggregation areas (H1, H2 H3): • No motorized vessel access in area H3. • Vessel access to H2 limited to small vessels. Underwater coastal resource areas (J): • Mobile bottom contact gear prohibited					
Commercial fisheries	X	X	✓	X	✓	✓
	Activity- and use- specific prohibitions and restrictions: Significant Benthic Areas (G): • Mobile bottom contact gear prohibited. Narwhal summer aggregation areas (I1, I2, I3): • Voluntary vessel speed limit of 9 kn for vessels of 300 GT or more. Underwater coastal resource areas (G): • Mobile bottom contact gear prohibited.					
Hunting, trapping, and gathering (non-rights based)	X	X	✓	X	X	X
	Activity- and use- specific prohibitions and restrictions: None					
Placement of artificial reefs for recreational purposes	X	X	X	X	X	X
	Activity- and use- specific prohibitions and restrictions: Not applicable					
Bottom trawling	X	X	X	X	X	X
	Activity- and use- specific prohibitions and restrictions: Not applicable					
Oil and gas and mineral exploration and exploitation	X	X	X	X	X	X
	Activity- and use- specific prohibitions and restrictions: Not applicable					

5.2.4 Zone 4: Multiple Use

Zone 4 sustains the greatest range of uses that do not compromise ecological sustainability, cultural resources, or heritage values. Inuit rights, as set out in the Nunavut Agreement, and traditional use of the NMCA by Inuit are not subject to zone restrictions.

Zone Objectives:

- To foster a range of uses that do not compromise ecological sustainability, cultural resources, or heritage values.
- To provide research opportunities in areas with multiple uses.
- To provide opportunities for education and recreation.
- To foster awareness, understanding and enjoyment of NMCAs.

All other remaining areas within Tallurutiup Imanga NMCA are zoned as Zone 4 Multiple Use. The spatial extent of this zone is different in the ice and open water season zoning plans because of variations in the extent of zone 1 and 3 areas between the two plans. A broad range of ecologically sustainable activities and uses are allowed within this zone, including fishing, shipping, and commercial tourism, subject to applicable legislation, regulations, site-specific review processes, authorizations and permitting requirements. Activities and uses that enhance opportunities for local businesses and contribute to the well-being of Inuit and the associated communities are promoted in this zone. Limits, permits and exceptions outlined in Appendix A apply within zone 4.

5.3 Area of Special Importance

Several areas have been identified as being of special importance to communities predominantly for subsistence harvesting and camping (Area of Special Importance or ASI). These activities are part of Inuit cultural practices and maintaining cultural continuity. These activities are important for passing on knowledge and skills between generations through observation and practice and for making room for new approaches or practices to achieve the same ends. The disturbance of wildlife, of traditional camping areas, and of Inuit harvesting activities by recreational activities and commercial tourism during the open water season have been identified as concerns for these areas. The management of activities in these areas require more flexibility than is provided in the zoning plan to adapt to changing conditions and patterns of use. The designation of an ASI is a way to highlight that an area is of particular importance and requires a particular management focus to reduce disturbances to Inuit activities. **ASI designation complements zoning: any prohibitions and restrictions associated with the underlying zoning also applies in an ASI.**

Initial management strategies are identified in Table 5.3. This approach may be adjusted over time, with community consultation. Strategies could range from, for example, educating visitors on best practices to respect the reasons areas are important to the communities and avoid disruption of Inuit activities, to area

closures. The approach to managing individual areas can be changed as needed. For activities requiring permits, conditions specific to an area may be added to the permit.

- **ASI 1 (fjords north of Clyde River):** Historically, this area was used by Pond Inlet and Clyde River Inuit for hunting and fishing. Currently the area is predominantly used by Inuit from Clyde River. There are also important camping sites in this area.
- **ASI 2 (southern Admiralty Inlet):** This is an area of abundant wildlife. It is significant to Inuit, especially for Arctic Bay residents, who hunt narwhal, polar bear, seal, caribou, geese and fish in the southern portions of the inlet. This area is also a Zone 3.
- **ASI 3 (strip along eastern shore of Brodeur Peninsula):** Valued by Arctic Bay residents as an important area for wildlife and as a hunting ground with traditional camping areas. The shallow waters off Cape Crawford, at the northeastern tip of Brodeur Peninsula, are a walrus feeding area. This area is also a Zone 3.
- **ASI 4 (Victor Bay):** Important hunting and camping area for Inuit from Arctic Bay. Ice stays in Victor Bay longer than in Arctic Bay, providing longer access to the floe edge. Victor Bay may become more heavily used with changing ice conditions. This area is also a Zone 3.
- **ASI 5 (Milne Inlet):** Abundant wildlife; current and historical harvesting area for Pond Inlet residents. Koluktoo Bay is a calving area, animals used to be more abundant in Milne Inlet. There are concerns that high levels of commercial shipping, low flights and use of acoustic devices are disturbing wildlife in the area; recreational use and commercial tourism add to the effects on wildlife. This area is also a Zone 3.
- **ASI 6 (southeast and northeast coasts of Devon Island):** Important hunting grounds for polar bear, narwhal, and walrus. There are also archaeological sites here.
- **ASI 7 (southeast coast of Ellesmere Island):** Abundance of wildlife in this area (walrus, polar bears, seals, narwhal, beluga). Although there is some hunting in this area, poor travel conditions limit use by Inuit. Archaeological sites show evidence of Inuit occupation; Greenlanders used this area.
- **ASI 8 (western shore of Borden Peninsula):** This area is rich in cultural resources, including traditional Inuit campgrounds (sod houses, tent rings) and ancient burial sites, demonstrating its continued use by Inuit over centuries. It is still used by Inuit today for hunting and camping. The area is used by marine mammals (bowhead, narwhal, seals, orcas) and is a polar bear denning area. This area is also a Zone 3.
- **ASI 9 (Resolute area and along coast of Cornwallis Island):** This area is used by Inuit from Resolute for harvesting and camping. The area is characterized partially by kelp beds. This area is also a Zone 3.

- **ASI 10 (Radstock Bay):** An important hunting area, both historically and at present, with an abundance of seals, walrus, and narwhal. There are also important cultural areas located on land around the bay.
- **ASI 11 (Dundas Harbour):** There is abundant wildlife in this area, and it is an important hunting area for walrus and for access to muskox. There are important cultural sites located on the shores of Dundas Harbour and it is historically important for its history with relocation.
- **ASI 12 (Croker Bay):** There is an abundance of whales (narwhal and beluga) in this area. There are also cultural resources (for example, ancient burial sites) on the shores.

Management approach	1	2	3	4	5	6	7	8	9	10	11	12
Recreational activities will be managed to reduce impact on Inuit use of area and valued components of the area	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
All permits will require registration and orientation, and area specific conditions may be added as needed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Restrictions may be developed as needed for recreational and commercial tourism activities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recreational activities, commercial tourism operators and recreational fishers are encouraged to hire a local guide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Potential impacts of vessel traffic are of concern: support enhanced communications between communities and other users to respect communities' interests	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recreational fishing: catch and release discouraged									✓	✓	✓	✓
Preferred routing to community for cruise ships and commercial shipping is identified									✓			
Closure at start of open water season	✓											
No taking of glacier ice												✓

Table 5.3 Management approach for the Areas of Special Importance (ASI). Blank cells signify that the management approach does not apply for an area.



Photo: Diane Blanchard

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Appendix

APPENDIX A – NMCA Zoning Framework

The NMCA zoning framework is comprised of four zones, each with a specific purpose, objectives and set of allowable activities and uses. Table A1 indicates the allowable activities and uses in each zone, and Table A2 lists the limits, permits, and exceptions to these activities and uses. Indigenous traditional use and rights-based activities consistent with section 35 of the *Constitution Act* continues in all zones.

Table A1. NMCA Allowable Uses and Activities³

✓ **Allowed.** Activity or use is generally consistent with the purpose and objectives of the zone and is allowed, subject to applicable legislation, regulations, site-specific review processes, authorizations and permitting requirements.

C Conditional. Activity or use is assessed at the site level during zoning development. Activity may be allowed (✓) if it aligns with the purpose and objective(s) of the zone. Section 5 describes what conditional activities (marked with **C** in the tables below) are allowed (✓) or not (X) in Tallurutiup Imanga NMCA zones.

X Not allowed. Activity is inconsistent with the purpose of the zone or the NMCA and is not allowed.

Activities and Uses	FULL PROTECTION ZONES		ECOLOGICALLY SUSTAINABLE USE ZONES		Limits/Permits/Exceptions
	Strict Protection	General Protection	Habitat Protection	Multiple Use	
	Zone 1	Zone 2	Zone 3 ⁴	Zone 4	
Indigenous traditional use	✓	✓	✓	✓	Traditional use of an NMCA by Indigenous peoples will not be subject to zoning restrictions except for conservation, public health or public safety reasons, determined in consultation with Indigenous rights holders.
Research, monitoring, and restoration	C	✓	✓	✓	A research and collection permit from Parks Canada, and other applicable permits, are required.
Recreational activities (non-extractive)	X	✓	✓	✓	Permits may be required.
Commercial tourism (non-extractive)	X	✓	C	✓	A business license is required.
Coastal and in-water infrastructure	X	C	C	✓	Authorization from Parks Canada is required.
Commercial shipping	X	✓	C	✓	Conducted in accordance with Transport Canada's legislative and regulatory framework and consistent with international maritime law. Anchoring may be restricted to ensure bottom protection.
Recreational fishing	X	X	C	✓	Conducted in accordance with Transport Canada's legislative and regulatory framework and consistent with international maritime law. Anchoring may be restricted to ensure bottom protection.
Commercial fisheries	X	X	C	✓	Conducted in accordance with the Fisheries Act and its regulations, provincial/territorial regulations (for example, stated limits and licensing requirements) and the Interdepartmental Principles for Fisheries Management in Federal Marine Protected Areas.
Hunting, trapping, and gathering (non-rights based)	X	X	C	✓	Conducted in accordance with applicable regulations, including stated limits and licensing requirements.
Placement of artificial reefs for recreational purposes	X	X	X	X	Not permitted in NMCAs.
Bottom trawling	X	X	C	✓	Bottom trawling is not permitted in all zones in the national NMCA zoning framework as per the Government of Canada marine protected areas protection standard. The bottom trawling protection standard currently does not apply within Tallurutiup Imanga NMCA.
Oil and gas and mineral exploration and exploitation	X	X	X	X	Prohibition under the <i>Canada National Marine Conservation Areas Act</i> .

3. Activities related to Canadian sovereignty or security, other activities that are consistent with the purposes of the CNMCAA (for example, public safety, environmental protection, law enforcement) and emergency activities are not restricted by NMCA zoning.

4. Zone 3 is a customizable zone. The list of allowable activities depends on what habitat is being protected. Therefore, most of the activities and uses are identified as conditional (C) in zone 3 in the national framework. Refer to tables 5.1 and 5.2 for list of allowable activities and uses within each zone 3 area in Tallurutiup Imanga NMCA.

APPENDIX B – Summary of Environmental Assessment

A strategic environmental assessment (SEA) was conducted on the Tallurutiup Imanga National Marine Conservation Area interim management plan. The purpose of the SEA is to incorporate environmental and socio-cultural considerations into the development of the interim management plan. Individual projects undertaken to implement management statement objectives at the site will be evaluated separately to determine if an impact assessment is required under the appropriate impact assessment regime.

The scope of this assessment includes the area within the boundary of Tallurutiup Imanga NMCA, and the period considered is five years from the date of the plan, at which time the interim plan will be replaced by the first management plan. The valued components considered include natural and cultural resources, visitor experience and the well-being of the associated communities.

The primary effects of this plan will be to increase protection in the marine area, and increase Inuit involvement, capacity, and benefit from the implementation of the NMCA objectives. Multiple customized processes, and guidelines will be developed in the next few years. All these tools will be developed collaboratively to inform decision-making and promote knowledge collection and sharing. The zoning in the interim management plan or new authorization of activities may be perceived as restrictive to some users, however, predictability in authorization processes or land or seabed use is beneficial for all users. This will protect and conserve the natural and cultural heritage of Tallurutiup Imanga and assure that sustainable use of marine and terrestrial resources in Tallurutiup Imanga NMCA respects Inuit rights, results in economic and social benefits for Inuit, and enhances the well-being of the associated communities.

There are positive environmental or sociocultural effects from providing a holistic vision and protection for Tallurutiup Imanga NMCA and no important negative environmental or sociocultural effects anticipated from the implementation of the interim management plan.



Photo: Hugues Michaud

APPENDIX C – Supporting Regulations

Adapted from NMCA Policy document.

This appendix outlines the major pieces of Government of Canada legislation, formal agreements, regulations, and other policy instruments that inform or guide general NMCA establishment and management, as well as documents that guide the establishment of Tallurutiup Imanga NMCA establishment and management more specifically.

Legislation and Regulations

Arctic Waters Pollution Prevention Act and associated regulations
Canada National Marine Conservation Areas Act and associated regulations
Canada Shipping Act, 2001 and associated regulations
Canadian Environmental Protection Act, 1999 and associated regulations
Canadian Navigable Waters Act and associated regulations
Coastal Fisheries Protection Act and associated regulations
Fisheries Act and associated regulations
Migratory Birds Convention Act, 1994 and associated regulations
Nunavut Planning and Project Assessment Act
Species at Risk Act and associated regulations
United Nations Declaration on the Rights of Indigenous Peoples Act
Wrecked, Abandoned or Hazardous Vessels Act

Among the regulations that deal with shipping in the Canadian Arctic, the following are of note for Tallurutiup Imanga NMCA:

- *Arctic Shipping Safety and Pollution Prevention Regulations*
- *NordREG (Arctic Canada Traffic Zone)*
- *Arctic Waters Pollution Prevention Regulations*
- *Navigation Safety Regulations*

Formal Agreements

Nunavut Land Claims Agreement (1993)
Tallurutiup Imanga National Marine Conservation Area Inuit Impact and Benefit Agreement (2019)
Inuit Impact and Benefit Agreement for National Wildlife Areas and Migratory Bird Sanctuaries in the Nunavut Settlement Area (2016)
Inuit Impact and Benefit Agreement for Auyuittuq, Quttinirpaaq and Sirmilik National Parks (1999)

Parks Canada Policy Instruments

Directive on the Management of National Marine Conservation Areas (2022)
Directive on Impact Assessment (2019)
Mapping Change: Fostering a Culture of Reconciliation within Parks Canada (2019)
Policy and Directive on Partnering, Sponsorship and other Forms of Collaboration (2019)
Policy on the Establishment and Management of National Marine Conservation Areas (2022)

Other Policy Instruments

Government of Canada marine protected areas protection standard (announced in 2019)
Interdepartmental Principles for Fisheries Management in Federal Marine Protected Areas (2019)
Principles Respecting the Government of Canada's Relationship with Indigenous Peoples (2018)
Canada's Arctic and Northern Policy Framework (2019)
Inuit Nunangat Policy (2022)

APPENDIX D – Zoning and Management Tools

A variety of management tools may be used in the management of Tallurutiup Imanga NMCA in addition to zoning. These tools include:

- Regulatory tools administered by other federal departments (for example, *Fisheries Act*, *Oceans Act*, *Canada Shipping Act (2001)* or *Arctic Waters Pollution Prevention Act*)
- NMCA regulations under the CNMCAA. General regulations are nationally consistent and enforceable tools that will apply to all NMCAs established under the *Act* from coast to coast to coast and including the Great Lakes. These regulations are anticipated to come into force during the life of this interim management plan.
- Permits and other authorizing instruments that give individuals, organizations, or businesses the authority to carry out an activity or use in an NMCA, subject to conditions.
- The designation of special management areas to allow for customized activity prohibitions or restrictions within a specific part of an NMCA to manage specific activities on a temporary, seasonal, or longer-term basis. Special management areas are identified and implemented with Indigenous governing bodies, relevant government departments and other partners in NMCA management.
- Temporary closures to restrict specific activities or access to certain areas on a case-by-case basis in response to an urgent issue (for example, temporary prohibition on access to an area due to a temporary public safety hazard).
- Voluntary measures (for example voluntary vessel speed reduction).
- The development and publication of best practices and guidelines (for example, Cruise Industry guidelines, mariner's guides) to guide user behaviour.
- Pro-active education, awareness, and communication with users.
- Notice to Mariners (NOTMAR): monthly and annual publications for mariners that provide important information for marine navigation in Canada, published by Canadian Coast Guard.
- NAVWARNs (Navigational Warnings) – information for mariners about changes to navigational aids and current marine activities or hazards, published by Canadian Coast Guard.
- Ship Safety Bulletins published by Transport Canada.
- Program development for users such as mariners, cruise ship operators, resupply companies, and private vessels.
- Other information products for mariners – for example Low Impact Shipping Corridor charts from the Canadian Hydrographic Services, electronic navigational charts, GPS shapefiles showing zoning.
- International Maritime Organization protocols and guidance for mariners.



Summary Statement

National Marine Conservation Areas are established and managed to protect and conserve representative marine areas for the benefit, education and enjoyment of the people of Canada and the world. They create enjoyable experiences for visitors, promote awareness and understanding among Canadians, and provide benefits for Indigenous peoples and coastal communities.

Tallurutiup Imanga National Marine Conservation Area (NMCA) Interim Management Plan (IMP) establishes the initial framework for the protection and management of one of the most ecologically and culturally significant marine regions in the Canadian Arctic. Located in Nunavut, Tallurutiup Imanga NMCA encompasses approximately 108,000 km² of marine waters stretching from Resolute in the west to Baffin Bay in the east and extending into Canada's Exclusive Economic Zone. The area plays a critical ecological role within the eastern Arctic marine ecosystem, and it has sustained Inuit for generations by providing access to wildlife resources, essential to food sovereignty and Inuit well-being. The interest in protecting international, national, and regional values of Tallurutiup Imanga by community members has been a recurring theme since the late 1970's, largely due to Inuit concerns over the prospect of future oil and gas development at that time.

This IMP provides strategic direction for the management of Tallurutiup Imanga NMCA while a ten-year management plan is developed within five years after the establishment of the NMCA. The interim plan outlines the vision, guiding principles, management objectives and associated targets and a zoning plan that will guide operations and consensus-based decision-making for Tallurutiup Imanga by the Inuit-Canada joint management board, the Aulattiqatigiit Board.

The plan was developed collaboratively by the Qikiqtani Inuit Association, the Government of Nunavut, and the Government of Canada (Parks Canada with support from Transport Canada and Fisheries and Oceans Canada). Extensive consultations were conducted from 2018 to 2025 with the five associated communities—Resolute, Grise Fiord, Arctic Bay, Pond Inlet, and Clyde River - as well as with stakeholders including industry representatives, environmental organizations, researchers, and the Canadian public.

Purpose and Scope

The IMP aims to protect Tallurutiup Imanga NMCA's ecosystems and cultural heritage while supporting sustainable use and respecting Inuit rights. It provides guidance for managing marine ecosystems, regulating activities, and supporting collaborative research, monitoring, and stewardship.

Key priorities include:

- Protecting marine biodiversity and critical habitats
- Supporting ecologically sustainable use of marine resources, in a manner consistent with the *Nunavut Agreement* and the *Canadian National Marine Conservation Areas Act*
- Protecting Inuit rights and harvesting practices
- Integrating Inuit knowledge in management decisions

- Supporting responsible economic activity and tourism while promoting community wellbeing
- Promoting collaborative research and monitoring

Ecological and Cultural Importance

Tallurutiup Imanga NMCA holds deep cultural and historical significance for Inuit communities. Inuit have relied on the region's marine resources for thousands of years. Today, communities adjacent to the NMCA continue to use the area for subsistence harvesting and travel. Access to wildlife resources within the NMCA remains essential to food security, cultural continuity, and community well-being.

Tallurutiup Imanga NMCA is widely recognized as one of the most biologically productive marine ecosystems in the Arctic and serves as an ecological driver for the eastern Canadian Arctic. The region supports a wide range of marine species and provides essential habitat for polar bears, walrus, seals, bowhead whales, beluga whales, narwhal, and migratory seabirds.

Governance and Co-Management

Management of Tallurutiup Imanga NMCA is based on a collaborative governance model established through the Inuit Impact and Benefit Agreement (IIBA) signed in 2019 between the Qikiqtani Inuit Association and the Government of Canada. The agreement ensures that Inuit rights, knowledge, and interests are central to the management of the NMCA.

A key component of the co-governance structure is the Aulattiqatigiit Board, a joint Inuit–Canada management board composed of equal representation from the Qikiqtani Inuit Association and the Government of Canada. The Board operates through consensus and is responsible for overseeing the planning, operation, and management of the NMCA.

Management also involves coordination with the Government of Nunavut and among several federal departments, including Parks Canada, Fisheries and Oceans Canada, the Canadian Coast Guard, Transport Canada, and Environment and Climate Change Canada, each of which retains responsibilities related to fisheries management, marine safety, environmental protection, and wildlife conservation.

Vision, Management Objectives and Zoning

The long-term vision for Tallurutiup Imanga NMCA is a thriving, globally significant ecosystem that sustains and empowers Inuit for generations to come and welcomes visitors to experience, appreciate, and respect its meaning to Inuit, Canada, and the Arctic region. Through collaborative governance, responsible stewardship, and ongoing research and monitoring, the NMCA will continue to support biodiversity, cultural heritage, and sustainable livelihoods for generations to come.

The IMP establishes four management objectives and associated targets to guide activities over the next five years. The objectives focus on the protection of Tallurutiup Imanga's natural and cultural environment; the sustainable use of natural resources while protecting Inuit rights and promoting community well-being; collaborative research and monitoring; and prevention, preparedness and response planning to increase public safety and the protection of the NMCA. In addition, a zoning framework is utilized as a spatial management tool that sets the management intent for different areas of the NMCA by dividing it into specific zones, each with a defined purpose and level of protection, objectives, and categories of allowable uses and activities.

As per the *Canada National Marine Conservation Areas Act*, the following activities are prohibited in all zones: use or disposition of public lands without authority; exploration and exploitation of non-renewable resources; and disposal of substances in waters except as authorized by a permit or as required for vessel safety and security.

Inuit rights, as set out in the *Nunavut Agreement*, and traditional use of the NMCA by Inuit are not subject to zone restrictions. The zoning regime for Tallurutiup Imanga NMCA recognizes and protects Inuit rights, particularly where use conflicts exist or are anticipated. In addition, the zoning regime does not restrict activities with respect to national security or sovereignty, safe navigation, defense, law enforcement, innocent passage and resupply of communities.

Guiding Principles

Management of Tallurutiup Imanga NMCA is guided by several key principles identified in the IMP:

- **Integration of Inuit Knowledge:** Inuit Qaujimajatuqangit (Inuit knowledge, values, and experience) informs research, monitoring, and management decisions.
- **Inuit Stewardship:** Inuit are part of the land and sea where healthy ecosystems sustain Inuit physical, mental and spiritual well-being and support cultural practices. Inuit are recognized as long-standing stewards of the region whose cultural practices support ecological sustainability.
- **Adaptive and Collaborative Management:** Management approaches will evolve in response to new scientific information, Inuit knowledge, and environmental change.
- **Precautionary and Ecosystem-Based Approaches:** Decision-making prioritizes ecosystem and human health and applies precaution where uncertainty exists.
- **Whole of Government Approach:** A coordinated approach involving federal and territorial departments to guide the management of Tallurutiup Imanga NMCA and support consistent decision-making, efficient resource use, and streamlined administration.
- **Alignment with Legal Frameworks:** Management is consistent with the Nunavut Agreement, the Canada National Marine Conservation Areas Act, and other applicable legislation.

Conclusion

The IMP for Tallurutiup Imanga NMCA is based on currently available Inuit Qaujimajatuqangit, western science, and discussions with local communities, stakeholders, Inuit organizations, and federal and territorial departments. The associated communities played an essential role in the development of the plan, by identifying their vision for the area, the values important to them and the potential threats to these values. The IMP also balances the protection of the environment and the respect of Inuit rights with the interests of stakeholders, where collaboration and adaptive management will be central to the ongoing management of Tallurutiup Imanga. The Aulattiqatigiit Board will work directly with the associated communities for the ongoing implementation the IMP, to ensure that their input inform the collaborative and adaptive management of Tallurutiup Imanga.

**What We Heard:
Tallurutiup Imanga
National Marine Conservation Area
Interim Management Plan**

Consultation Report

January 2026

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1.0 Introduction

This report provides a summary of consultation process conducted between May 2018 and November 2025 while developing the Interim Management Plan (IMP) for Tallurutiup Imanga National Marine Conservation Area (NMCA), located in Nunavut. The development of an IMP for Tallurutiup Imanga NMCA is required by the *Canada National Marine Conservation Areas Act* (the Act) to finalize the establishment of Tallurutiup Imanga as an NMCA through an Order in Council. It will remain in place until a full management plan for the NMCA is developed and tabled in parliament, within five years following establishment under the Act, as required per section 9(1).

This Interim Management Plan (IMP) was developed by a Planning Committee consisting of representatives from the Qikiqtani Inuit Association, the Government of Nunavut, and the Government of Canada (Parks Canada with Fisheries and Oceans Canada and Transport Canada playing a supporting role). To draft the IMP, extensive consultation with Inuit, partners, stakeholders, and the Canadian public was conducted by the Tallurutiup Imanga NMCA Planning Committee. Perspectives shared through the various meetings, workshops, open houses, and community events played an integral role in the development of the IMP and associated vision, management objectives, and interim zoning plan. The consultation process for the Interim Management Plan is complete. However, the Aulattiqatigiit Board, the Inuit-Canada management board for Tallurutiup Imanga, will continue to work closely with rights holders, stakeholder groups, partners, and the associated communities (see Table 1), on the implementation of the Interim Management Plan and the overall management of Tallurutiup Imanga NMCA.

2.0 Background

Located in Nunavut, the boundaries of Tallurutiup Imanga NMCA encompass the length of Lancaster Sound, stretching from Qausuittuq (Resolute) in the west to Baffin Bay in the east, beyond the territorial waters into Canada's Exclusive Economic Zone. At approximately 108,000 km², Tallurutiup Imanga NMCA represents nearly 2% of Canada's total marine area. This area is the ecological driver for much of the eastern Arctic and provides important habitat for nearly all Arctic marine species. Its waters are a migratory corridor for numerous species and essential habitat for polar bears, seals, walrus, bowhead and beluga whales, narwhal, and migratory birds. The area has sustained Inuit for generations and is an artery connecting communities and allowing travel throughout the High Arctic. Access to wildlife resources found in Tallurutiup Imanga NMCA is essential to Inuit food sovereignty and Inuit well-being and is critical for the region to retain a source of healthy country food.

As required by the *Nunavut Agreement*, an Inuit Impact and Benefit Agreement (IIBA) for Tallurutiup Imanga NMCA was signed in 2019 between the Qikiqtani Inuit Association (QIA) and the Government of Canada, as represented by Parks Canada, Fisheries and Oceans Canada, and Transport Canada. In addition to providing benefits to Inuit (e.g. QIA's Inuit Stewardship Program, Nauttiqsuqtiit), the IIBA establishes a consensus-based Canada-Inuit governance structure for Tallurutiup Imanga NMCA: the Aulattiqatigiit Board. This Board advises the Minister on any matters pertaining to NMCA management.

The Planning Committee conducted extensive consultations with the five communities associated with Tallurutiup Imanga NMCA identified in the IIBA, as seen in Table 1: Mittimatalik (Pond Inlet), Ikpiarjuk (Arctic Bay), Kangiqtugaapik (Clyde River), Qausuittuq (Resolute), and Aujuittuq (Grise Fiord) in 2018, 2019, 2024, and 2025.

Table 1: Communities associated with Tallurutiup Imanga NMCA

Qausuittuq Resolute	Aujuittuq Grise Fiord	Mittimatalik Pond Inlet	Ikpiarjuk Arctic Bay	Kangiqtugaapik Clyde River
<i>the place with no dawn</i>	<i>the place that never thaws</i>	<i>the place where the landing place is</i>	<i>the pocket</i>	<i>nice little inlet</i>
Located on Cornwallis Island. One of Canada's northernmost inhabited communities.	Located on Ellesmere Island, the northernmost inhabited community in Canada.	Located in northern Qikiqtaaluk, on the shores of Tasiujaq (Eclipse Sound).	Located in northern Qikiqtaaluk, on the shores of Admiralty Inlet.	Located in the Baffin Mountains along the northeastern coast of Baffin Island
Population (2021 Census)				
183	144	1,555	994	1,181
91.7% Inuit 67.7% Inuktitut-speaking	93.1% Inuit 85.7% Inuktitut-speaking	93.2% Inuit 92.9% Inuktitut-speaking	96.5% Inuit 97.5% Inuktitut-speaking	97.5% Inuit 97% Inuktitut-speaking
Average Age				
31.8 years	30.8 years	26.6 years	24.8 years	26.3 years

3.0 Consultation and Engagement Process

Consultation has been a core priority of the work to draft the Tallurutiup Imanga NMCA Interim Management Plan. Open and transparent consultations have facilitated awareness and understanding, fostering respect, and enhancing informed and balanced decision-making. Inclusive planning processes established important channels for ongoing dialogue, which in turn strengthened relationships between various levels of government, Inuit communities, partners, stakeholders, and the public. Legislative requirements for consultation are found in the Act (2002).

3.1 Phase I: Drafting the Interim Management Plan (2018- 2019)

3.1.1 Community Consultation

3.1.1.1 How We Consulted

Between May and July 2018, a series of community consultations were organized with the goal of gathering initial community input for the development of the IMP. In-person meetings were held in Mittimatalik (Pond Inlet), Ikpiarjuk (Arctic Bay), Kangiqtugaapik (Clyde River), Qausuittuq (Resolute), and Aujuittuq (Grise Fiord) with community representatives from Hamlet Councils, Hunters and Trappers Organizations, and the QIA established Community Lands and Resources Committees (CLARC). Meetings included

ample time for discussion and comments. Open houses were also held at public spaces in each of the communities. These meetings were flexible, informal sessions where community members could drop in, view a short presentation, ask questions, and meet with Planning Committee members. In total, the Tallurutiup Imanga NMCA Planning Committee met with 181 community members.

In April and May 2019, a second in-person consultation updated community members on the IMP process, confirmed what was heard in the initial round of consultations, and asked for feedback on the vision, the draft management objectives and interim zoning. Similar to the 2018 consultations, the Planning Committee visited Mittimatalik (Pond Inlet), Ikpiarjuk (Arctic Bay), Kangiqtugaapik (Clyde River), Qausuittuq (Resolute), and Aujuittuq (Grise Fiord) and met with community representatives from Hamlet Council, Hunters and Trappers Organizations, and CLARC. There were also in-person open houses held in each community. In total, the Tallurutiup Imanga NMCA Planning Committee met with 158 community members through this round of engagement.

A full list of community consultation details for engagements in 2018 and 2019 can be found in Appendix A.

3.1.1.2 What We Heard

Discussions throughout consultations in Phase I revealed a strong community desire to use Inuit Qaujimajatuqangit (traditional knowledge) in management and decision-making and that an increased understanding of Tallurutiup Imanga NMCA would be important to move forward and guide research priorities. Climate change was identified as a driver for information gathering and research. In addition, the following key issues were identified:

3.1.1.2.1 Wildlife and Ecosystems Protection/Conservation

Numerous discussions with Mittimatalik (Pond Inlet) community members highlighted the importance of Tremblay Sound, Koluktoo Bay, Navy Board Inlet, and Milne Inlet as having high conservation value for narwhal calving grounds, post-calving and harvesting areas, and a desire to restrict or reduce shipping in these areas. Communities expressed that they were seeing wildlife declines and varying population levels associated with human industrial activities and would like those impacts to be reduced. . There were also concerns related to the effects that climate change was having on habitat and wildlife populations over the decades.

Many comments were heard in support of actions to reduce impacts on mammal migration routes, to prevent chasing/harassment of wildlife and intrusion into breeding areas. Research studies were also identified as being intrusive to communities and impacting wildlife populations; communities felt that research study methods tended to scare away wildlife and that these activities would impact both wildlife and hunting activities.

There was a direct relationship seen between the protection of wildlife and protection of the Inuit way of life. Food security was recognized as an important issue for communities along with access to healthy country meat for consumption. Communities want to ensure that wildlife continue returning and do not get diverted beyond community hunting grounds, which they have come to rely on. Communities specifically wanted to see

better protection for walrus and other marine mammals, which they depend on for their livelihood.

There was a concern over the noise created by marine vessels and there is a perception that sonar devices in the ocean, as part of research studies, tend to scare off wildlife. It was felt that the noise resulted in reductions in population levels especially within seal populations. Many of the communities reported apparent declines in seal populations.

Marine mammals in the Qausuittuq (Resolute) area share migratory routes with Mittimatalik (Pond Inlet) and other communities. However, these wildlife routes also share the same pathway as shipping routes. These communities identified a need for more research monitoring related to wildlife populations in Tallurutiup Imanga NMCA calving areas, marine mammal migration, timing of migration, and associated changes over time. Community members warned against using historical data to describe current conditions since both physical and biological environments have changed.

Community members suggested using temporary/seasonal closures for portions of the year to protect important habitats or to protect wildlife at critical life stages. Critical areas were identified including polynyas where wildlife tended to congregate for feeding. Marine setbacks for ships from coastal migratory birds, including seabirds and sea ducks, were also recommended.

3.1.1.2.2 Management of Marine Shipping/Increased Vessel Traffic

Communities saw ship activities as a disturbance to the peaceful mind of the hunter and the natural activities of marine animals. Concern was expressed over the opening of Lancaster Sound to increased national and international shipping traffic and recommended improved monitoring, vessel speed restrictions, ice-breaking limitations, concentrated shipping routes, and other preventative measures. Communities were uncertain how to manage shipping traffic and wanted to ensure that a good plan is developed to address shipping-related concerns. There was also a desire by communities to be involved and aware of vessel and small craft movement within Tallurutiup Imanga NMCA and recommended improving communications and monitoring capabilities.

Communities expressed strong concern over potential spills, anchoring, ballast water release, and grey and black water dumping both inside and outside of NMCA boundary. There was strong concern with the proposed increase of the number of ships transiting between the Milne Port and Mittimatalik (Pond Inlet) and the disturbance of hunting areas due to the congregation of vessels waiting to dock at the Milne Inlet port. There was recognition that at that time many vessels were transporting iron ore through waters adjacent to their communities and there was worry over the potential increased number of vessels proposed in Phase 2 of the Baffinland project.

The communities saw a need for greater management of small boats (sailboats, yachts and zodiacs) and a desire to see ships using corridors to help reduce the negative impacts on marine mammals from vessel sounds. Other concerns included the production of wakes by large or fast-moving vessels that can be dangerous to hunters.

The community outlined concern that conditions and marine life in Oliver Sound and other areas, have changed due to shipping traffic. They had observed changes in

migration routes and habitat and indicated that fewer species were moving through their usual areas, and that overall, fewer species were observed while hunting. There was fear that this would also happen in Ikpiarjuk (Arctic Bay), especially with cod and marine mammals. Community participants suggested that camera-based monitoring should increase to monitor vessel traffic.

The Aujuittuq (Grise Fiord) community observed more whales in their area. It was perceived that whales were taking an alternate route through the Aujuittuq area due to ship traffic.

3.1.1.2.3 Ice Breaking/Sea Ice Protection

Mittimatalik (Pond Inlet) community members expressed that their area was suffering the most impacts from shipping activities and as a result were extremely concerned with ice breaking activities and associated impacts. Inuit use the ice from freeze-up to break-up for seasonal outings, on-ice transportation routes/travel between communities, hunting, etc. The community viewed ice breaking as interfering with ice-related activities (due to loss of ice) and decreased opportunities for and the length of time available to utilize the ice.

Navy Board Inlet was identified as an area where a seasonal zone restricting ice breakers is desired. Some suggested not allowing any ice breakers within the NMCA to protect and maintain floe edges.

Concern was expressed related to the continuity of the floe edge, which prevents marine mammals from going west. Ice blocks movement of marine mammals who therefore do not go west but stay on the eastern side of the floe. The community indicated that they would like to prevent ships from going through these iced areas as ice breaking could allow the animals to continue west rather than stay in the area. Communities suggested restricting ships from ice breaking in the area during May and June.

3.1.1.2.4 Management of Cruise Tourism

There was concern over increased tourism and zodiac traffic associated with the cruise ship industry. Communities felt that many cruise ships do not follow speed limits and often chase or harass wildlife and interfere with hunting activities.

Community members from Mittimatalik indicated that recently there had been a lot of cruise ship activity along the southern Eclipse Sound fjords. Members wanted to see cruise ships excluded from these areas throughout the summer months. Mittimatalik (Pond Inlet), Kangiqtugaapik (Clyde River), and Ikpiarjuk (Arctic Bay), communities were concerned about the increasing cruise tourism activities.

Community members indicated that they would prefer not to see tourists in the area at all during bird nesting season, however at the time, tourists and vessels were allowed to approach nesting birds (Murres). Cape Hay and Croker Bay were identified as areas where cruise ships visit, and as a result, community members are concerned about potential impacts.

It was emphasized that community members do not go to an area if it has been disturbed by a cruise ship passing by because they know that the whales would be gone as a result of the disturbance. At the time, the Mittimatalik (Pond Inlet) Hamlet was being pro-active by working with the Parks Canada regional office to raise concerns about

cruise ships. It was also felt that walrus haul-out sites have also been affected due to cruise ship activities.

3.1.1.2.5 Coordination of Emergency Response

Communities indicated that they were unsure of what to do if there was an incident with a ship, an oil spill or leak, or if a cargo ship became punctured. They identified a need for better spill response planning and training and community emergency management plans. An interest was expressed by communities to be involved in emergency responses near their communities, especially as they are often seen as first responders due to their proximity. They felt that better delineation of responsibilities could help with improved emergency response.

3.1.1.2.6 Improved Communications with Local Communities

Community members felt that they were not made aware of vessels coming into their areas, which was an ongoing concern. Improved communication between communities and users of the marine environment was recommended. Cruise ships and small vessels/sail boats often appear unannounced and usually provide no information prior to their arrival. Several communities indicated that they only find out about their presence when vessels are spotted or if they get into trouble and need assistance. This is thought to result from shifts in cruise ship itineraries, or inconsistent communication about these itineraries within communities.

Permitting was another concern raised. Communities indicated that they often do not know who has a permit and who is required to have a permit. Communities were keen to see organizations cooperate in this regard.

3.1.1.2.7 Enforcement/Pollution Control

Communities were concerned that regulations for the NMCA would not be enforceable and that infractions would go unnoticed (i.e. no consequences for people who do not follow regulations). For example, different regulations govern different parties transiting through and within Navy Board Inlet/Baffin Bay. Though Transport Canada regulations exist, the application of these rules varies by vessel groups (e.g., ships associated with industry/mining companies). Also, often research vessels were able to transit with no issues, while local search and rescue vessels were not allowed (or appear not to be allowed) in some areas. Community members were seeing activities that should not be occurring and felt that all vessel-types should be required to follow the rules without exemptions.

Communities were very concerned over enforcement on spills, ballast water, and dumping. They suggested introducing local community monitors and observation posts, which would be beneficial to enforcement goals.

Communities noted an increase in vessel traffic entering or transiting through Canadian waters. Foreign sailboats had been observed fishing (recreationally) in Ikpiarjuk (Arctic Bay) and in community fishing areas. These activities were a major concern for communities, particularly since it appeared to many that there was no regulation, enforcement, or permitting involved. Vessels were anchoring and were engaging in whatever activities they wanted with no consequences. As a result, the community recognized the need for monitoring and photo evidence of infractions or suspicious

activity. There was strong support to have more on-site community observers through improved stewardship programs and increased powers to enforce restricted activities.

3.1.2 Stakeholder Consultation

A record of meeting dates and consulted stakeholder groups was established in 2018 and maintained throughout Phase I, while developing the draft IMP.

3.1.2.1 How We Consulted

From 2018 to 2020, stakeholders in the cruise, shipping, mining, fishing and tourism industries along with Nunavut Institutions, were engaged through presentations, meetings, and workshops. NGOs, research groups and academia were also similarly engaged to obtain input for the development of the IMP.

Nineteen engagement workshops, presentations, and meetings were held during Phase I with 81 attending organizations. Fourteen email exchanges were sent and received, with 64 organizational contacts who expressed support and concern for the types of restrictions that were being considered for inclusion in the IMP. Overall 443+ individual engagements were tracked during Phase I stakeholder consultation.

An overview of the stakeholders engaged, and the consultations undertaken in Phase I can be found in Appendix B.

3.1.2.2 What We Heard

Industry stakeholders brought forth the following key themes and topics:

- Concern about permitting processes with added layers of regulation, increased timing for issuing permits, and increased administration, costs and complexity
- Wanting anchoring restrictions that allow for flexibility due to safety reasons
- Ensuring proper and adequate enforcement
- Looking for flexibility with travel due to changing weather and ice conditions, for safety reasons
- Vessel size restrictions for inlets
- Assurance that zoning will not be overly restrictive to fisheries and future fisheries operations
- Clarification of the role of the Government of Nunavut for economic decisions in the area

NGOs and academia brought forth the following key themes and topics:

- Avoiding shipping industry breaking sea ice and crossing community transportation routes
- Inclusion of buffers and restrictions around areas where walrus, caribou, seal, seabird and narwhal live, and in consideration of these locations across the seasons
- Respect for community right of way, hunting rights by restricting area entry, uses, and activities allowed
- Vessel speed restrictions
- Bottom trawling

3.1.3 Developing the First Draft of the Interim Management Plan (IMP)

Development of the IMP slowed between Phase I and Phase II due to restrictions imposed during the Covid-19 pandemic. During this period, QIA and the Government of Canada continued discussions about the intended use of the IMP, reaching a resolution in 2023 before preparing the first draft.

Feedback gathered from communities and stakeholders during Phase I consultations informed the Planning Committee's work in developing this initial draft. The draft IMP outlined a vision, management objectives and targets, and a proposed zoning framework.

3.2 Phase II: Reviewing the Interim Management Plan (2024-2025)

Phase II involved another round of consultations with the five associated communities, as well as additional validation meetings to ensure that community and partners' goals and objectives for the IMP were correctly reflected in the draft. Phase II also included stakeholder and public consultation.

3.2.1 Community Consultation

3.2.1.1 How We Consulted

In March 2024, the Tallurutiup Imanga NMCA Planning Committee returned to each of the five communities with a first draft of the IMP: Mittimatalik (Pond Inlet), Ikpiarjuk (Arctic Bay), Kangiqtugaapik (Clyde River), Qausuittuq (Resolute), and Aujuittuq (Grise Fiord).

In-person meetings with community representatives from Hamlet Council, Hunters and Trappers Organizations, Nauttigsuqtiit (Inuit stewards) and Community Land and Resource Committees (CLARC) were undertaken in each community. These meetings were in-depth, 2-day sessions that covered the entire IMP with the majority of time allotted for discussion and comments. Participants were asked to identify what values they would like to see protected and what were the threats to these values. In-person open houses were held at public spaces in each of the communities. These meetings were flexible, informal sessions for community members to drop in, view a short presentation, ask questions, and meet with Planning Committee members regarding the IMP. A total of 103 people were engaged at these sessions. A number of additions and changes were made to the IMP following this round of consultations.

The revised IMP was then taken back to the five communities again in December 2024/January 2025. The purpose of these meetings was to validate that what was said in the March 2024 consultations had been properly understood and correctly addressed in the revised IMP. These in-person validation meetings were attended by community representatives from Hamlet Councils, Hunters and Trappers Organizations, and Nauttigsuqtiit, for a total of 51 people. These community representatives asked questions and provided insights on the management of Tallurutiup Imanga NMCA. No further concerns were raised on the revised draft of the IMP.

A full list of consultation details from Phase II can be found in Appendix C.

3.2.1.2 What We Heard

Feedback and input gathered during the March 2024 consultations raised the following key points:

3.2.1.2.1 Changes to Vision and Management Targets

The Vision is an inspiring description of what Tallurutiup Imanga NMCA should be like in 15-20 years. The key feedback heard on the Vision was that Tallurutiup Imanga NMCA is a special place, where visitors can come but need to be respectful of the natural and cultural environments, and that mental health benefits from the NMCA should be mentioned.

Based on community feedback, changes were made to the Vision to better emphasize that visitation must be respectful, and that Inuit must help to shape and manage tourism activities. A statement was added to make it clear that the NMCA must support Inuit self-determination and enhanced wellbeing, which includes mental health along with economic, social, and cultural development.

Management targets are a list of specific actions that need to be accomplished over the first five years. They were designed to address community priorities. When asked if anything was missing from the targets, participants expressed that programs and infrastructure for hunters were needed, including visitor centre or a food processing centre. The IIBA for Tallurutiup Imanga and related infrastructure agreements already commit to establishing QIA's Nauttiqsuqtiit program and the construction of harbours and multi-use facilities. However, the Planning Committee added targets to the Interim Management Plan to support the implementation of these commitments. The communities also raised concerns about the enforcement of rules, especially on matters related to visitors and shipping, and the need for better coordination between the law enforcement agencies. Similarly, the Planning Committee added a target in the Interim Management Plan to address this issue.

3.2.1.2.2 Ice and Open Season Zoning Date Adjustments

There are differences in the environment, uses/activities, and wildlife migration between the time of the year when the area is mostly ice-covered and when open water dominates. A two-season zoning plan for each of the ice and open water seasons was presented at the community consultations in March 2024. Communities shared that it is getting harder to predict when freeze up and break up happens and there is a lot of variability from year to year. Most communities said freeze up and break up is happening a bit earlier than the proposed dates. Therefore, based on this community input, the dates for each zoning plan were adjusted to November 16 – July 20 for the ice zoning plan and July 21 – November 15 for the open water plan, with the Field Unit Superintendent having flexibility to change the dates if conditions warrant it and with the support from the communities.

3.2.1.2.3 Changes to Protection for Sea Ice

Icebreaking was listed in the draft as being prohibited during the ice season in certain areas, to protect species and critical ice habitat. Community consultations in March 2024 revealed that there was a need to extend the protection for sea ice further east off the entrance of Eclipse Sound to better protect the floe edge.

The draft IMP also had a list of exceptions for when travel through ice during the ice season could be allowed in certain circumstances in those areas. As a result of community input, an additional exception was added to the IMP to allow ice breaking for valid conservation reasons, such as freeing trapped whales.

3.2.1.2.4 Expanded Bird Colony Protection

In the draft IMP, bird colonies were given a strict year-round protection for nesting areas and additional habitat protection for foraging areas in the open water season. The Mittimatalik (Pond Inlet) community advised that the protection for bird colonies should be expanded along the coast of Buchan Gulf as there were additional bird nesting areas there. The IMP was revised to expand protection along the coast in the Buchan Gulf with a 100m strip of strict protection seaward of the cliffs, based on this community input.

We also heard that ballast water exchange should not be allowed in bird foraging areas, and that ships should be required to do ballast exchange before entering Nunavut. There was agreement with the proposed zoning, that there should be no sport hunting within 100 m of bird cliff at Cape Liddon.

3.2.1.2.5 Protection for Additional Walrus Haul-Out Areas

Within the draft IMP, there were habitat protection measures proposed for one walrus haul-out within the NMCA. Feedback was received that all additional walrus haul-out areas within the NMCA classified as 'confirmed' or 'uncertain' by DFO should be protected with the same measures to ensure that walrus are not disturbed. Hunters were concerned that there should be no access to haul-outs when hunting is in progress.

Based on community input, the IMP was revised to include protection for thirteen haul-outs including all known active haul-outs and three additional ones, as identified during the Qikiqtaaluk Wildlife Board consultations.

3.2.1.2.6 Increased Protection for Beluga Habitat

In the draft IMP, protection for beluga habitat including no commercial shipping, no installation of in-water infrastructure, no commercial fisheries, no non-rights-based hunting or trapping, was outlined for several areas in the NMCA. During consultations, communities told us that there was an additional beluga aggregation area along the northern coast of Somerset island. Further, participants recommended that there be no motorized access during the open water season to prevent disturbance of beluga in the shallow waters. Based on this community input, the IMP was revised to add a new 1 km buffer along the north Somerset coastline. An aircraft buffer was also put in place in these zones, to reduce noise disturbance.

3.2.1.2.7 Increased protection for Narwhal

Concerns were raised at the March 2024 consultation sessions about increasing protection for narwhal. Communities recommended the addition of speed restrictions to narwhal habitat areas.

Based on what was heard from communities, the IMP was revised to include increased protection for areas where narwhal gather in the open water season. A speed recommendation of 9 knots was added for all identified narwhal habitat areas. Cruise ships were prohibited in Milne Inlet. Cruise and commercial ships were prohibited south

of Eclipse Sound. Trembley Sound was designated as zone 1 with strict protection as a quiet refuge area for narwhal.

3.2.1.2.8 Addition of Areas of Special Importance (ASI)

During Phase I community meetings, specific areas were identified by communities for their importance to camp and hunt. During Phase II of consultations, the Planning Committee asked community members for more information about why the areas are important and what the threats to these areas were. All communities identified concerns about the disturbance of wildlife, traditional camping areas, cultural artefacts, and Inuit harvesting activities due to recreational activities and commercial tourism during the open water season.

Based on what was heard from communities about these important areas, the Planning Committee determined that these areas required a more tailored management approach and more flexibility than zoning could offer. As a result, the IMP was revised to designate these areas as 'Areas of Special Importance' (ASIs). ASIs were then added to the zoning maps to highlight their importance. The aim of these measures is to reduce impacts and to mitigate wildlife disturbances near areas of cultural significance, traditional campsites, and Inuit use of the area (e.g. harvesting, camping activities). The approach to managing ASIs will be ongoing and can be monitored and adapted with input from the individual communities.

In March 2024, communities recommended that Croker Bay and Dundas Harbour be strictly protected as zone 1, due to community concerns about damage to cultural areas on the shores of these bays, and general disturbance to wildlife. However, Parks Canada and the Aulattiqatigiit Board have no control over areas outside Tallurutiup Imanga NMCA jurisdiction and it would not be appropriate to use zoning to cut off access to land that is not under Parks Canada or QIA's administration. Therefore, it was determined that zoning was not an appropriate tool in these cases. This was explained to communities at the follow up validation meetings in December 2024 and January 2025 and there was understanding about why the request could not be addressed through zoning.

To address some concerns by communities, the IMP was revised to include Dundas Harbour as an ASI where visitors will require an orientation, be encouraged to hire a local guide, and discouraged from catch and release fishing. Ships will be encouraged not to travel into the area unless for safety reasons. Also, support will be provided for enhanced communication between communities and users so that the area will be used in a way that is respectful to the needs of the communities.

3.2.2 Stakeholder Consultation

3.2.2.1 How We Consulted

In Phase II, stakeholder consultation was open from May 22 until August 1, 2025. This included sector-specific meetings with stakeholder groups from mining, shipping, cruise ship, tourism, and fisheries industries. These industry groups were categorized as Teir 1 stakeholders. Prior to meetings, a draft copy of the IMP was distributed to 78 Teir 1 stakeholders across these industries.

During Tier 1 stakeholder meetings, a comprehensive presentation provided attendees with a walk-through of the draft IMP including an overview of Tallurutiup Imanga NMCA, key management goals/tools, and activities that are allowed/not allowed. The presentation also covered the work that took place to develop the draft IMP and an overview of the IMP contents (vision, objectives targets, and zoning). An explanation of inclusions and exclusions for Tallurutiup Imanga NMCA and the co-governance model was also provided. An overview of zoning was provided with some specific implications for each industry. There were 38 attendees to the draft IMP walk-through meetings.

Tier 2 stakeholder groups included non-government organizations (NGOs) and academia. They were sent an email with the draft IMP and asked to submit their feedback.

All stakeholders were encouraged to send feedback on all aspects of the draft IMP, for consideration by the Planning Committee.

At the request of the Association of Arctic Expedition Cruise Operators (AECO) and Baffinland Iron Mines Corporation, subsequent meetings were held to discuss their feedback and to ask questions of clarification regarding the draft IMP.

3.2.2.2 What We Heard

The Planning Committee heard back from 15 stakeholders in 8 industry sectors with feedback on the draft IMP. In total, 125 comments were submitted, that included the following key themes:

- Uncertainty about permitting
- Interest in being involved in other aspects of TI, especially research, search & rescue and ASI management
- Request to be consulted for future developments in TI
- Concerns about wildlife and habitat buffers
- Protection for marine mammals and limiting underwater noise
- Request for more bottom trawling restrictions
- Concerns about the level of restrictions on potential future industrial activities
- Comments about adaptive management approach
- Comments about conformity process (regulations, wastewater discharge, innocent passage)
- Request for more climate change planning

A full list of stakeholder consultation details for Phase II can be found in Appendix D.

3.2.3 Public Consultation

3.2.3.1 How We Consulted

The draft IMP was posted online for public consultation from June 23 to July 21, 2025. It was available at parks.canada.ca in English, French, and Inuktitut. The IMP website was visited 258 times and 173 of those views were considered, 'engaged' with a pageview lasting longer than 10 seconds. The Inuktitut version was visited 25 times.

The public was encouraged to review the draft IMP and send comments/feedback. It was posted on the Consulting with Canadians website and three Facebook and 'X' (formerly Twitter) posts were published during the consultation period via the

@ParksCanadaNunavut profile in both English and Inuktitut. These posts were also shared with @ParksCanada @QikiqtaniInuit @GovofNunavut profiles to extend coverage and reach. On the @ParksCanadaNunavut Facebook profile, the posts received 13,589 post views, 31 shares, and 43 link clicks through to the website.

3.2.3.2 What We Heard

One comment was received during public consultation that did not result in changes to the IMP.

“Please ban all sport and commercial hunting, trapping, and fishing and create this park as a safe place for animals.”

3.2.4 Recommended Final Changes to IMP

After consideration of all stakeholder and public comments, the Planning Committee recommended the following eight changes to the IMP:

- Added the terms “Commercial tourism” and “Recreational activities” to the Glossary of Terms
- Clarified role of the Aulattiqatigiit Board (AB) in the Introduction
- Clarified Guiding Principle #3 about adaptive management and how it will be done cooperatively
- Clarified the responsibilities of the Canadian Coast Guard in Table 2.1
- Changed the zoning of Significant Benthic Areas during the ice season, so they have the same protection as during the open water season
- Added an exception to the zoning of Walrus Haul-out buffers to allow cruise ships to enter Radstock Bay and 3 other small inlets on the southern coast of Devon Island, with community support
- Changed the flight altitude restriction over Beluga summer aggregation areas during the Open Water Season from 5,000 ft to 2,000 ft
- Made the 9-knot speed limit voluntary in Narwhal summer aggregation areas

3.2.5 Community Check-ins

Before changes were accepted by the Aulattiqatigiit Board to the draft IMP, the Planning Committee connected back with communities in Fall 2025 to validate that these changes were accepted by communities.

3.2.5.1 How We Consulted

Each of the five community’s Hamlet Councils and Hunter & Trapper Organizations (HTO) were sent a letter that provided an overview of the proposed changes. They were also offered an opportunity to meet and discuss the changes with the Planning Committee, ask questions, and clarify any of the edits.

Meetings were arranged with the Mittimatalik (Pond Inlet) Hamlet Council and HTO, the Qausuittuq (Resolute) Hamlet Council, and Kangiqtugaapik (Clyde River) HTO to discuss the recommended changes. The Planning Committee received confirmation from all five community Hamlet Councils that the changes were agreeable.

Confirmations were also received from four HTOs that the changes were agreeable. The Planning Committee made many attempts to engage the Qausuittuq (Resolute) HTO and was able to confirm they received our message and passed it on to their members.

4.0 Next Steps / Conclusion and Recommendations

The Aulattiqatigiit Board, the Inuit – Canada joint management board for Tallurutiup Imanga, is satisfied with the amount of consultation conducted and has agreed to the changes made to the IMP in response to feedback received. On December 3, 2025, the Aulattiqatigiit Board approved the final version of the IMP to be submitted to the Nunavut Wildlife Management Board (NWMB) and forwarded to the Minister. Internal approvals have also been obtained from the Qikiqtani Inuit Association, Parks Canada, Transport Canada, Fisheries and Oceans Canada, and the Government of Nunavut (including cabinet approval).

The IMP will be forwarded to the NWMB for their review and approval at their regular meeting scheduled for June 24, 2026. In accordance with the *Nunavut Agreement*, the decision made by the NWMB will be forwarded to the Minister responsible for Parks Canada. The IMP will then be signed by the President of QIA, the Ministers for Parks Canada, Transport Canada and Fisheries and Oceans Canada, and the Minister of Environment for the Government of Nunavut.

The IMP will guide the management of Tallurutiup Imanga NMCA while a comprehensive 10-year Management Plan is developed within five years of the establishment of Tallurutiup Imanga NMCA. It will also be part of the report submitted to Parliament to finalize the establishment of Tallurutiup Imanga NMCA under the *Canada National Marine Conservation Areas Act*, by adding the boundary of Tallurutiup Imanga NMCA to Schedule 1 of the Act. Throughout the implementation of the IMP, the Aulattiqatigiit Board will continue collaborating with communities, partners, and stakeholders.

5.0 Appendix

Appendix A – Who We Heard From: Phase I Community Consultations

Table 1. Community members consulted from May to July 2018

Location	Date	Group	Type of Consultation	Estimated Number of Individuals
Clyde River	2018-07-04	Community Land and Resource Committee (CLARC)	In-person	4
Clyde River	2018-07-04	Hamlet Council	In-person	13
Clyde River	2018-07-05	CLARC and Hunters and Trappers Organization, QIA community liaison officer	In-person	7 (11-4 from previous CLARC meeting)
Clyde River	2018-07-05	Open house*	In-person	41
Arctic Bay	2018-05-25	Hunters and Trappers Organization, QIA community liaison officer, Inuit knowledge working group, Sirmilik National Park Joint Inuit/Government Park Planning and Management Committee	In-person	9 (11-2 overlapping with the open house)
Arctic Bay	2018-05-25	Hamlet Council	In-person	6
Arctic Bay	2018-05-25	Open house*	In-person	33
Resolute	2018-06-05	Hamlet Council, Hunters and Trappers Organization	In-person	7 (12-5 overlapping with the open house)
Resolute	2018-06-05	Open house*	In-person	8
Pond Inlet	2018-05-23	Hunters and Trappers Organization, CLARC, QIA community liaison officer, Sirmilik National Park Joint Inuit/Government Park Planning and Management	In-person	11

		Committee		
Pond Inlet	2018-05-24	Asungasungaat Area Co-Management Committee	In-person	12
Pond Inlet	2018-05-24	Open house*	In-person	13
Grise Fiord	2018-06-06	Hamlet Council, Hunters and Trappers Organization, Nirjutiqarvik National Wildlife Area Co-Management Committee	In-person	5 (10-5 overlapping with open house)
Grise Fiord	2018-06-06	Open house*	In-person	12
TOTAL				181

**Indicates events that were open to the public.*

Table 2. Community members consulted in April to May 2019

Location	Date	Group	Type of Consultation	Estimated Number of Individuals
Clyde River	2019-04-15	Hamlet Council, Hunters and Trappers Organization, QIA community director	In-person	11 (13-2 overlapping with CLARC)
Clyde River	2019-04-16	CLARC, QIA community liaison officer	In-person	7
Clyde River	2019-04	Open house*	In-person	Unknown
Arctic Bay	2019-04-26	CLARC, Sirmilik National Park Joint Inuit/Government Park Planning and Management Committee, QIA community liaison officer, Nauttiqsuqtiit	In-person	19 (21-2 overlapping with Hamlet Council)
Arctic Bay	2019-04-25	Hamlet Council	In-person	15 (16-1 overlapping with Hunters and Trappers)

Arctic Bay	2019-04-25	Hunters and Trappers Organization	In-person	8
Arctic Bay	2019-04-26	Open house*	In-person	20
Resolute	2019-05-02	Hamlet Council, Hunters and Trappers Organization, Qausuittuq National Park Joint Inuit/Government Park Planning and Management Committee, QIA community liaison officer	In-person	11 (14-3 overlapping with the open house)
Resolute	2019-05-02	Open house*	In-person	17
Pond Inlet	2019-04-24	Hunters and Trappers Organization, Sirmilik National Park Joint Inuit/Government Park Planning and Management Committee, Inuit knowledge working group	In-person	8 (9-1 person overlapping with Hamlet Council)
Pond Inlet	2019-04-24	Hamlet Council	In-person	5
Pond Inlet	2019-04-24	Open house*	In-person	20-25
Grise Fiord	2019-04-30	Hamlet Council, Hunters and Trappers Organization, QIA community liaison officer	In-person	9
Grise Fiord	2019-04	Open house*	In-person	8
TOTAL				158

**Indicates events that were open to the public.*

Appendix B – Who We Heard From: Phase I Stakeholder Consultations

Table 2. Stakeholders who were engaged in Tallurutiup Imanga NMCA IMP development sessions from 2018-2023

Date	Engagement Type	Industry Sector	Attending Organizations	# of Attending Organizations (#Attendees/ Contacts)
2018-04-23	Meeting (In person) Iqaluit, NU	NGO	WWF	1 (3 attendees)
2018-05-28	Workshop (Virtual)	NGO	Nature Conservancy of Canada Canadian Wildlife Service	2 (5 attendees)
2018-07-13	Meeting (In person) Iqaluit, NU	Nunavut Institutions	Nunavut Impact Review Board	1 (2 attendees)
2018-08-30, 31	Workshop (In-person) Dalhousie University, Halifax, NS	Academia	Dalhousie University Researchers ENGOS Indigenous Organizations	(50+ attendees)
2019-09-04	Meeting (In person) Iqaluit, NU	Nunavut Institutions	Nunavut Wildlife Management Board Submission and Presentation	1
2018-09-04	Meeting (Virtual)	Cruise	Adventure Canada AECO (Denmark) One Ocean Expedition Travel Nunavut Crystal Cruises (west coast) Arctic Adventures	5 (9 attendees)
2018-09-05	Meeting (Virtual)	Mining	Baffinland	1 (3 attendees)
2018-09-12	Workshop (In person) Iqaluit, NU and Gatineau, QC	Shipping	Aporta (Dalhousie University) NEAS Petronav Desgagnes Shipping Federation of Canada Fednav Woodwards Martech Polar Tactical Marine Solutions Ltd.	9 (12 attendees)
2018-09-17	Meeting	Fisheries	Nunavut Fisheries Association	4

	(Virtual)		AFA Qikiqtaaluk Corporation Baffin Fisheries	(9 attendees)
2018-10-17	Presentation (In person) Iqaluit, NU	Tourism	Travel Nunavut Industry Association AGM: Travel and tourism operators	10 (40+ attendees)
2018-10-17	Presentation (In person) Iqaluit, NU	Tourism	Association of Arctic Expedition Cruise Operators (AECO) Forum at Travel Nunavut AGM: AECO Travel and tourism operators	10 (25+ attendees)
2018-10-18	Letter to Minister	Nunavut Institutions	Asungasungat Area Co-Management Committee (Bylot Island Migratory Bird Sanctuary)	1
2018-10-18	Letter to Minister	Nunavut Institutions	Nirjutiqarvik Area Co-Management Committee (Nirjutiqarvik National Wildlife Area/Coburg Island)	1
2018-10-30	Workshop (In person) Montreal, QC	Cruise and Shipping	Fednav Desgagnes Nunavut Eastern Arctic Shipping Inc. (NEAS) Shipping Federation of Canada Petro Nav Inc. Northwest Passage Marine (NWP) Hurtigruten Association of Arctic Expedition Cruise Operators (AECO) Baffinland Crystal Cruises Tactical Marine Solutions Ltd. Arctic Kingdom One Ocean Expeditions Adventure Canada Woodwards	16 (18 attendees)
2019-02-15	Letter to Minister	Nunavut Institutions	Sulukvaut Area Co-Management Committee (Prince Leopold Migratory Bird Sanctuary)	1
2019-03-07	Meeting (In person) Iqaluit, NU	Nunavut Institutions	Nunavut Wildlife Management Board Submission and Presentation	1
2019-04-14	Workshop (In person) Iqaluit, NU	Cruise	Quark Expeditions Adventure Canada Spirit of the Arctic Tourism Summit:	13 (20 attendees)

			One Ocean Expeditions Silversea Cruises Seabourn Holland America Abercrombie and Kent Eyos Expeditions Hurtigruten Lindblad Expeditions Association of Arctic Expedition Cruise Operators (AECO) Travel Nunavut Nunavut Development Corporation	
2019-04-16	Email (Incoming)	Nunavut Institutions	Qikiqutaaluk Wildlife Management Board Nunavut Inuit Wildlife Secretariat Grise Fiord, Arctic Bay, Pond Inlet, Clyde River, Resolute HTOs	6 (8 contacts)
2019-05-15, 16	Presentation (In person) Montreal, QC	Shipping	Canadian Marine Advisory Council (CMAC) Prairie and Northern Region: Shipping, resupply, navigational captains, operators, and Indigenous organizations	(80+ attendees)
2019-05-17	Meeting (Virtual)	Mining	Baffinland	1 (3 attendees)
2019-06-11	Email (Outgoing)	All	TriNav Mining North NWT & Nunavut Chamber of Mines Baffin Fisheries Arctic Fishery Alliance Eyos (cruise industry) Arctic Watch Arctic Kingdom (tourism) Arctic Bay Adventures Travel Nunavut Tides Canada Canadian Parks And Wilderness Society (CPAWS) Inuit Heritage Trust Nunavut Marine Council	14
2019-06-11	Letter (Outgoing)	Nunavut Institutions	Nunavut Wildlife Management Board	1
2019-06-18	Email (Incoming)	Fisheries	Nunavut Fisheries Association	1
2019-08-02	Email (Outgoing)	All	Travel Nunavut Industry Assoc. Arctic Bay Adventures Ltd.	33 (60+ contacts)

			Arctic Kingdom Arctic Watch/Weber Arctic Black Feather Polar Sea Adventures Quest Nature Tours Complete Expeditions EYOS – Yacht Expeditions Canada North Outfitting Association of Arctic Expedition Cruise Operators (AECO) One Ocean Expeditions Adventure Canada Oceans North Hurigruten Crystal Cruises Quark Expeditions Tactical Marine Solutions Ltd. Baffinland NWT-Nunavut Chamber of Mines Arctic Fishery Alliance Baffin Fisheries Coalition Nunavut Fisheries Association TriNav Fisheries FedNav Nunavut Eastern Arctic Shipping Inc. (NEAS) Desgagnes Transarctik, Inc Woodward Petro-Nav Inc. Northwest Passage Marine Students on Ice University of Ottawa Quluq School	
2019-12-04	Letter (Outgoing)	Nunavut Institutions	Nunavut Wildlife Management Board Submission	1
2020-03-11	Letter (Outgoing)	Nunavut Institutions	Nunavut Wildlife Management Board Submission	1
2020-03-18	Meeting (Virtual)	Mining	NWT and Nunavut Chamber of Mines Baffinland Agnico Eagle Mines Ltd.	3 (7 attendees)
2020-11-03	Presentation (Virtual)	Shipping	Canadian Marine Advisory Council (CMAC) Prairie and Northern Region: Shipping industry, resupply, navigational captains, operators, and Indigenous organizations	(80+ attendees)
2021-01-28 – 2021-04-26	Emails (Incoming)	NGO	Oceans North	1 (3 contacts)

2021-04-29	Email (Incoming)	Tourism	Weber Arctic	1
2022-01-19	Letter (Outgoing)	Nunavut Institution	Nunavut Tunngavik Incorporated	1
2022-03-22	Presentation (Virtual)	Fisheries	Eastern Arctic Groundfish Stakeholder Advisory Committee: Northern Coalition Oceans North Qikiqtaaluk Corp	3 (4 attendees)
2023-03-31	Letter (Incoming)	NGO	Oceans North (with Mittimatalik HTO)	1
	TOTAL			145 (443+ attendees)

Appendix C – Who We Heard From: Phase II Community Consultations and Validation

Table 1. Community members consulted in March 2024

Location	Date	Group	Type of Consultation	Estimated Number of Individuals
Clyde River	2024-03-18 2024-03-19	Hamlet Council, Hunters and Trappers Organization, Nauttiguqtiit	In-person	10
Clyde River	2024-03-18	Open House*	In-person	12
Arctic Bay	2024-03-27 2024-03-28	Hamlet Council, Hunters and Trappers Organization, Nauttiguqtiit	In-person	12 (14-2 people overlap with the open house)
Arctic Bay	2024-03-27	Open House*	In-person	20
Resolute	2024-03-30 2024-03-21	Hunters and Trappers Organization, Nauttiguqtiit, CLARC**	In-person	8
Resolute	2024-03-20	Open House*	In-person	7
Pond Inlet	2024-03-26	Hamlet Council, Hunters and Trappers Organization, Nauttiguqtiit	In-person	5 (7-2 people overlapping with the open house)
Pond Inlet	2024-03-26	Open House*	In-person	10
Grise Fiord	2024-03-22	Hamlet Council, Hunters and Trappers Organization	In-person	9 (10-1 person overlapping with the open house)
Grise Fiord	2024-03-22	Open House*	In-person	10
TOTAL				103

*Indicates events that were open to the public.

**The Resolute Hamlet Council was invited but did not attend the meeting.

Table 2. Community members consulted in validation meetings in November 2024, December 2024, and January 2025

Location	Date	Group	Type of Consultation	Estimated Number of Individuals
Clyde River	2024-11-26	Hamlet Council, Hunter and Trappers Organization	In-person	10
Arctic Bay	2024-12-02	Hunter and Trappers Organization, Nauttiguqtiit**	In-person	9
Resolute	2024-12-04	Hamlet Council, Hunter and Trappers Organization, Nauttiguqtiit	In-person	8
Pond Inlet	2025-01-13	Hamlet Council, Hunter and Trappers Organization, Nauttiguqtiit	In-person	14
Grise Fiord	2025-01-16	Hamlet Council, Hunter and Trappers Organization	In-person	10
TOTAL				51

***The Arctic Bay Hamlet Council was invited and had confirmed their presence but did not attend the meeting.*

Appendix D – Who We Heard From: Phase II Stakeholder Consultations

Table 1. Number of stakeholders who were sent draft IMP and whose feedback was requested

Industry Sector	Number of Stakeholder Organizations Contacted
Tier 1	
Mining	3
Fisheries	29
Cruise	4*
Tourism	19
Shipping	13
Tier 2	
Non-Government Organization (NGO)	9
Research/Academia	6
Nunavut Institutions	3
TOTAL	86

**Also distributed further to Association's membership*

Table 2. Number of tier 1 stakeholders who attended draft IMP virtual walk-through meetings

Date	Industry Sector	Attending Organizations	Number of Attending Organizations
2025-05-27	Mining	Baffinland Mining Association of Canada	2
2025-05-27	Fisheries	Arctic Fisheries Alliance Northern Coalition Nunavut Fisheries Association	3

2025-06-03	Cruise	Adventure Canada Association of Arctic Expedition Operators (AECO) Aurora Expéditions EYOS Expéditions FK Warren Ltd. Hapag-Lloyd Cruises Holland America Hurtigruten HX (Hurtigruten) Cruise Expeditions Mystic Cruises Ponant Expedition Group Quark Expéditions Royal Caribbean Group Seabourn Secret Atlas Viking Cruises	16
2025-06-04	Tourism	Weber Arctic	1
2025-06-04	Shipping	Fed Nav Petro Nav – Desgagnes	2
TOTAL			38

Table 3. Summary of responses received during Phase II stakeholder and public consultation, May 22 to August 1, 2025.

Industry Sector	Stakeholder	Number of Comments
Tier 1		
Mining	Baffinland	31
	Mining Association of Canada	7
	NWT & Nunavut Chamber of Mines	9
Fishing	Makivvik Corporation	1
Cruise	Association of Arctic Expedition Operators (AECO)	11
Tourism	Black Feather	1
	Travel Nunavut	8

	Weber Arctic	4
Shipping	FedNav	1
Tier 2		
NGO	Canadian Parks and Wilderness Society (CPAWS)	10
	Oceans North	20
	SeaBlue Canada	4
	WWF Canada	14
Academia	Amundsen Science	1
	Researcher, Carleton University	3
TOTAL		125

Summary Statement

This report summarizes the consultation process undertaken between May 2018 and November 2025 to inform the development of the Interim Management Plan (IMP) for Tallurutiup Imanga National Marine Conservation Area (NMCA), in Nunavut. The IMP is a legislative requirement under the *Canada National Marine Conservation Areas Act* and is a key step toward formal establishment of the NMCA. It will guide management for up to five years until a full management plan is developed and tabled in Parliament.

Tallurutiup Imanga NMCA spans approximately 108,000 km² across Lancaster Sound and surrounding waters, representing nearly 2% of Canada's marine area. It is ecologically significant, supporting diverse Arctic marine species and serving as a critical migratory corridor. The area is also central to Inuit culture, subsistence, and food security, providing essential access to country food and sustaining traditional ways of life.

The IMP was developed collaboratively by a Planning Committee composed of the Qikiqtani Inuit Association (QIA), the Government of Nunavut, and the Government of Canada, with support from federal departments. Governance of the NMCA is guided by the Inuit Impact and Benefit Agreement (IIBA), signed in 2019, which established a co-management framework through the Aulattiqatigiit Board.

Consultation Approach

The consultation process was conducted in two phases:

- **Phase I (2018–2019):** Focused on gathering initial input to inform the draft IMP.
- **Phase II (2024–2025):** Focused on reviewing, refining, and validating the draft plan.

Engagement included extensive consultations with five Inuit communities (Pond Inlet, Arctic Bay, Clyde River, Resolute, and Grise Fiord), as well as stakeholders from industry, NGOs, academia, and the general public. Methods included in-person meetings, workshops, open houses, online engagement, and written submissions.

Across both phases, hundreds of participants contributed input, ensuring the IMP reflects a broad range of perspectives.

What We Heard - Key Themes from Consultations

1. Protection of Wildlife and Ecosystems

Communities emphasized the importance of safeguarding marine ecosystems and species such as narwhal, beluga, seals, walrus, and seabirds. Concerns were raised about declining wildlife populations, habitat disruption, and the cumulative impacts of industrial activity and climate change. The communities requested conservation measures

such as seasonal closures, habitat buffers, and protection of critical areas (e.g., calving grounds and polynyas).

2. Management of Marine Shipping and Vessel Traffic

Increased shipping activity was identified as a major concern due to noise, pollution risks, and interference with wildlife and hunting practices. Communities called for stricter controls, including vessel speed limits, designated shipping areas, improved monitoring, and enhanced communication about vessel movements.

3. Sea Ice Protection and Icebreaking

Sea ice is essential for travel, hunting, and ecological balance. Participants expressed concern about icebreaking activities disrupting traditional use and wildlife patterns. Recommendations included restricting icebreaking in sensitive areas and seasons to preserve floe edges and migration dynamics.

4. Tourism Impacts

Growing cruise tourism raised concerns about wildlife disturbance, particularly during sensitive periods such as bird nesting. Communities supported stricter management of tourism activities, including limiting access to certain areas and seasons and ensuring respectful visitor behaviour.

5. Emergency Preparedness and Response

Communities highlighted gaps in preparedness for marine incidents, such as oil spills. There was a strong desire for improved emergency response planning, training, and clear roles for local involvement.

6. Communication and Enforcement

A lack of timely information about vessel activity and uncertainty around permitting were recurring issues. Participants emphasized the need for stronger enforcement mechanisms, consistent regulations across vessel types, and greater community involvement in monitoring and stewardship.

7. Integration of Inuit Knowledge and Governance

The incorporation of Inuit Qaujimajatuqangit and local knowledge was identified as essential to effective management. Communities stressed the importance of Inuit leadership, co-management, and alignment with cultural values and practices.

IMP Review and Validation - Key Changes to the Interim Management Plan

Feedback from Phase II consultations led to several important revisions to the IMP, that were validated by the associated communities:

- Enhanced vision to emphasize respect for Inuit culture, support for self-determination, and recognition of mental health and well-being.

- Adjusted seasonal zoning dates to reflect changing ice conditions.
- Expanded protections for sea ice, bird colonies, walrus haul-outs, and beluga and narwhal habitats.
- Introduction of Areas of Special Importance (ASIs) to protect culturally and ecologically significant sites with flexible management approaches.
- Strengthened management targets related to enforcement, infrastructure, and community programs.
- Refinements to zoning, including speed recommendations, access restrictions, and activity prohibitions in sensitive areas.

Additional updates clarified governance roles, improved definitions, and adjusted certain operational measures (e.g., flight altitude restrictions, voluntary vessel speed limits).

Conclusion

The consultation process integrated diverse perspectives and strengthened relationships among Inuit communities, governments, stakeholders, and the public. The resulting IMP reflects a balance between conservation objectives, Inuit rights and priorities, and sustainable use.

The Aulattiqatigiit Board will continue to guide management, working collaboratively with partners and communities to ensure adaptive, responsive, and culturally appropriate stewardship of Tallurutiup Imanga NMCA.

The IMP establishes a strong foundation for long-term conservation and co-management, ensuring that this ecologically and culturally vital region is protected for future generations while supporting Inuit livelihoods and well-being.

SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD
FOR

Information: X

Decision:

Recommendation:

Issue: Update on a proposed adaptive narwhal management system for Northern and Eastern Baffin Island.



Figure 1. Narwhal (*Monodon monoceros*) by G. Kuehl 2000.

Background

The 2013 *Integrated Fisheries Management Plan for Narwhal in the Nunavut Settlement Area* (IFMP) incorporated a Harvest Allocation Model developed to support the sustainable allocation of narwhal harvests among Nunavut communities on Northern and Eastern Baffin Island (NEBI). The Harvest Allocation Model takes into consideration that a community may harvest from a mixture of narwhal stocks outside the summer residency period, and the model accounts for this migratory mixing of narwhal stocks by linking harvests in different communities and different seasons to the Total Allowable Harvest (TAH) established for each stock. The Harvest Allocation Model is used to assess proposed annual allocation scenarios and ensure that the combined harvest attributed to a stock does not exceed its TAH.

The Qikiqtaaluk Wildlife Board (QWB) submitted a Request for Decision to the Nunavut Wildlife Management Board (NWMB) in June 2020 and an updated request in March 2022 (Appendix 1) to replace the Harvest Allocation Model with a proposed system that merged the three stocks within NEBI and a single year-round harvesting season methodology. The QWB stated the “summer-stock management system was not supported by Inuit Qaujimagatuqangit [IQ], and unduly restricted harvesting by Inuit”. The NWMB acknowledged concerns that the assumptions used to determine the narwhal stock boundaries and the Harvest Allocation Model used to inform the 2013 IFMP do not reflect available IQ, specifically narwhal movement patterns. The NWMB called on co-management partners to consider the evidence about narwhal stock definitions presented by the QWB while undertaking revisions to the narwhal IFMP (Appendix 2).

To support consideration of the QWB proposal and the revision of the IFMP, Fisheries and Oceans Canada (DFO) requested updated Science advice on stock delineation and the sustainability risks associated with alternative management approaches.

Science Information

In January 2026, DFO Science published a Science Response with two objectives: (1) to review the assumptions and available scientific evidence related to narwhal stock delineation; and (2) to assess the sustainability risks associated with the management system proposed by the QWB (Appendix 3). Biological markers, including stable isotopes, trace elements, contaminants, and genetics, together with movement information demonstrating summer and annual site fidelity, corroborate differentiation among some narwhal summering aggregations. In line with DFO's precautionary approach, in cases where stock delineation is complex, it is generally more precautionary to assume greater subdivision than to assume less. Accordingly, the Science Response advised that narwhal be managed at the smallest scale supported by available evidence of stock structure.

The risk assessment examined several potential management scenarios. The scenario most closely aligned with the QWB's recent proposal consisted of two management units: one combining the Admiralty Inlet, Eclipse Sound, and East Baffin Island stocks within NEBI, and another comprising the Somerset Island stock. If the three NEBI stocks do not mix fully, the assessment estimated a 46–100% risk of decline in the Eclipse Sound stock (the smallest summer aggregation) over the next 20 years, depending on how the combined harvest is allocated.

Update

Following publication of the 2026 Science Response, the Narwhal Working Group met in the months of February, June, and September of 2026 to discuss and develop an alternative to the current Harvest Allocation Model. The objective of an alternative approach is to provide greater flexibility through all-season tags while maintaining safeguards to ensure that harvests remain sustainable for the Admiralty Inlet, Eclipse Sound, and East Baffin Island stocks.

The Working Group has collaboratively developed a draft system called the 'Interim Adaptive Narwhal Management System for Northern and Eastern Baffin Island (NEBI)'. Under the draft system, the tags available in the NEBI area would equal the sum of the annual TAHs for the Admiralty Inlet, Eclipse Sound, and East Baffin Island stocks. Each stock would retain its individual TAH, but the total number of NEBI tags would equal the sum of the three annual TAHs. These tags will be available for the QWB to allocate to the communities of Arctic Bay, Pond Inlet, Clyde River, Qikiqtarjuaq, Pangnirtung, and Iqaluit. Tags issued to these communities will be all-season tags and labelled as NEBI tags. NEBI tags may be used throughout the three zones shown in Figure 2.

Following a harvest, the hunter is responsible for indicating, in the designated space on the physical tag, the zone (1, 2 or 3; see Figure 2) where the harvest occurred as well as the date of harvest. DFO will use the date and location of harvest to estimate the number of narwhals harvested from each stock and will share this information at an annual NEBI narwhal harvest forum with Working Group members and communities. For this system to provide reliable stock-specific harvest estimates, it is essential that hunters accurately and completely record the harvest location and date of each harvest on each tag.

Under the proposed draft system, the estimated harvest attributed to an individual stock could exceed that stock's annual TAH in a particular year, even though the total number of NEBI tags would not exceed the combined annual TAHs. Previous Science advice indicated that some interannual harvest variation may be potentially sustainable, provided that cumulative hunting mortality attributed to each stock over five consecutive years does not exceed five times its annual TAH (Appendix 4). Annual reporting and discussion at a NEBI narwhal harvest forum would allow co-management partners and communities to identify concentrations in the timing or location of harvest and consider adjustments before the five-year limit is reached.

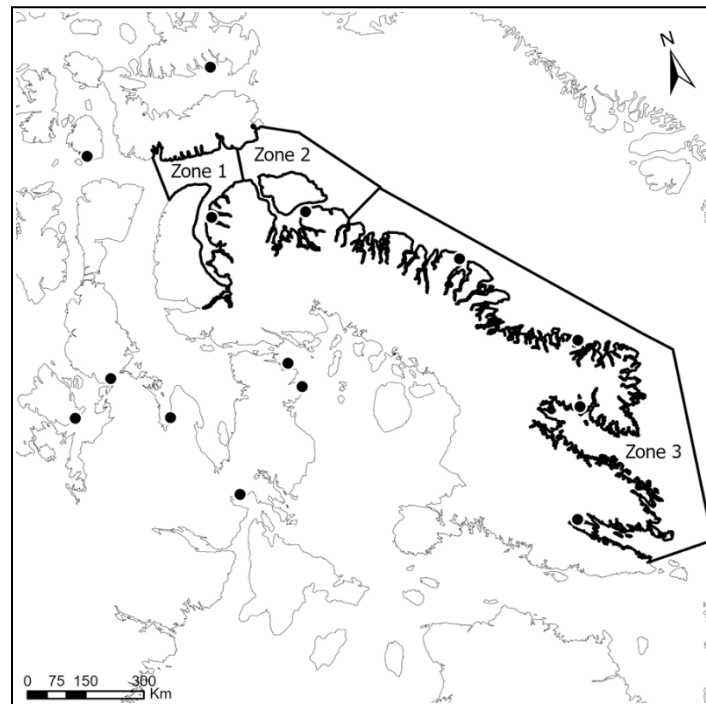


Figure 2. Map indicating the Northern and Eastern Baffin Island (NEBI) area. The area is divided into three zones.

If the estimated total harvest within a stock during the previous five years exceeds the sum of the applicable annual TAHs for that stock over the same five-year period, temporary measures to maintain vital and healthy narwhal populations may be considered. These temporary measures may include, but are not limited to, a reduction in TAH, or Non-quota limitations (NQLS) such as shortened seasons, or a return to stock-specific tags for some or all of the stocks within NEBI. The system is considered adaptive because estimated stock-specific harvests would be reviewed annually and management measures could be taken through regulating harvesting practices, developing or modifying by-laws, or establishing/modifying NQLs or TAH through NWMB Decision when necessary to protect individual stocks.

Consultation

This draft system was co-developed by the Narwhal Working Group with representatives from DFO, Kitikmeot Regional Wildlife Board (KRWB), Kivalliq Wildlife Board (KWB), QWB, Nunavut Tunngavik Incorporated (NTI), and NWMB staff.

DFO plans to conduct written consultations with the Ikajutit Hunters and Trappers Association (HTA), Mittimatalik HTA, Nangmautaq HTA, Nattivak HTA, Pangnirtung HTA, Amaruq HTA, Kitikmeot Regional Wildlife Board (KRWB), Kivalliq Wildlife Board (KWB), QWB, and Nunavut Tunngavik Incorporated (NTI) prior to submitting a request for decision to NWMB.

Next Steps

Subject to consultation and finalization of the proposal, the Working Group intends to bring the proposed system forward for consideration by the NWMB, potentially as early as the first meeting of 2027. If approved through the decision-making process, the targeted implementation date would be the 2027–28 narwhal harvesting season, which opens on April 1st, 2027.

Prepared by: Ricky Di Rocco, Alexis Burt and Tyler Jivan, Fisheries Management;
Marianne Marcoux and Cortney Watt, Science;
Arctic Region, Fisheries and Oceans Canada.

Date: 11 September 2026

Appendices

Appendix 1 - 2022 Submission to the Nunavut Wildlife Management Board - Establishment of an Inuit System of Narwhal Management in the Waters of Northern and Eastern Baffin Island, 2022

Appendix 2 - NWMB Decision on Qikiqtaaluk Wildlife Board's Request for Modifications to the Baffin Bay Narwhal Management System

Appendix 3 - DFO Canadian Science Advisory Secretariat Science Response 2026/002 - Considerations for a New Narwhal Management System: Sustainability of Narwhal Around Northern and Eastern Baffin Island

Appendix 4 - DFO Canadian Science Advisory Secretariat Science Advisory Report 2015/006 - Sustainability of a flexible system of total allowable annual catches of narwhals (*Monodon monoceros*)

**SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD (NWMB)**

Regular Meeting No. RM 001-2022

FOR

Information: ☐

Decision: ☒

Issue: ***Establishment of an Inuit System of Narwhal Management in the Waters of Northern and Eastern Baffin Island, 2022***

Background:

Assertion of Primacy of Inuit Systems of Wildlife Management Decisions in Nunavut

In December 2020, the Qikiqtaaluk Wildlife Board (QWB) adopted the legal position to assert that the Nunavut Agreement, a constitutionally protected treaty between the Inuit of Nunavut and the Crown of Canada, intended to provide primacy to Inuit Systems of Wildlife Management with respect to decision-making processes and outcomes regarding wildlife and wildlife harvesting by Inuit. This primacy extends to Inuit Qaujimajatuqangit (IQ) because IQ is the basis for Inuit Systems of Wildlife Management. In this context, “primacy” refers to what comes first and remains most important. Inuit Systems of Wildlife Management are specifically recognized in sub-section 5.1.2(e) of the Nunavut Agreement. Several other sections of Article 5 of the Nunavut Agreement point out the special rights and roles that Inuit have in wildlife management and harvesting in Nunavut. Science and scientific systems of wildlife management are not specifically recognized or mentioned in Article 5 of the Nunavut Agreement.

More specifically, the QWB asserts that any wildlife management plan, recommendation or measure established or implemented by the NWMB or Fisheries and Oceans Canada (DFO) must give primacy to Inuit rights, Inuit Systems of Wildlife Management, and Inuit Qaujimajatuqangit. Such a view is supported by the Nunavut Agreement and the United Nations Declaration on the Rights of Indigenous Peoples.

Summary of Applicable Inuit Qaujimajatuqangit about Narwhal in the Waters of Northern and Eastern Baffin Island

In 2018, the QWB Executive and the Hunters and Trappers Organizations (HTOs) learned that DFO did not plan to review and revise the 2013 Integrated Fisheries Management Plan for Narwhal in the near future. As a result, the QWB Executive and HTOs began discussing improvements to narwhal management in the waters of Northern and Eastern Baffin Island (NEBI) based on Inuit Qaujimajatuqangit (IQ) and began developing the Inuit System of Narwhal Management, initially proposed to the NWMB in May 2020.

IQ about NEBI narwhal is far too extensive to describe fully here. IQ is orally transmitted among Inuit in every community, covering knowledge collected by many past generations to the current day across all waters that community members collectively and regularly travelled almost every day from the floe fledge in spring to the end of the fall migration of the narwhal. Harvesters, elders, youth, women and men all have roles in the IQ system and collectively share their knowledge within and between communities. The HTOs develop the best consensus-based decisions in keeping with IQ principles and practices, and Inuit Systems of Wildlife Management among affected Inuit communities, largely as Inuit have always done since time immemorial.

In January 2020 Eric Ootoovak, then Chairperson of the Mittimatalik HTO, told DFO scientists and managers repeatedly and emphatically that “there are no summer stocks” during a survey planning workshop in Winnipeg. Eric was referring to three hypothetical summer stocks delineated by DFO in the above-mentioned 2013 science-based management plan. According to IQ, the three summer stocks of narwhal do not actually exist in reality within the waters of NEBI!

In January 2020, DFO could not provide the needed evidence showing multi-year fidelity of narwhal to any one of the three hypothetical parts of NEBI waters. DFO offered no clear methods or plans to obtain the required information (C. Watt, DFO, Winnipeg, pers. com.). DFO’s telemetry data shows that narwhal may move from one area to other areas in the same open-water season in which they were tagged within and beyond NEBI waters.

At that 2020 workshop, delegates from all six HTOs agreed that DFO’s 2013 hypothetical summer-stock management system was not supported by Inuit Qaujimajatuqangit, and unduly restricted harvesting by Inuit in contravention of sections 5.3.3 and 5.6.50 of the Nunavut Agreement.

Below are some conclusions about the narwhal in NEBI waters based on generations-old, up-to-date, peer-reviewed Inuit Qaujimajatuqangit:

- Narwhal move freely throughout the NEBI area (see Appendix A). Their distributions and abundances change across NEBI waters between years, showing that individual narwhal do not always return to the same specific areas within NEBI waters every year.
- Narwhal also move freely and widely from day to day, from week to week and from month to month in NEBI waters, and their local distributions and abundances change accordingly. Groups of narwhal are seen moving out of and into major inlets and sounds, and among various smaller fiords and bays, throughout the open-water period.
- In spring, narwhal arrive at various areas in NEBI waters at varying times each year, depending on the development of open water within variable patterns at the floe edges, leads in the ice in various areas, and ice break-up into summer. These patterns and their timing vary from year to year, and can affect the abundance and distributions of narwhal across NEBI waters into August and September.
- Throughout the open-water period, narwhal move as needed for their biological needs like birthing and mating, as well as in response to environmental factors like changing food concentrations, killer whales, and ships. Narwhal also probably move in response to factors largely unknown to humans.
- Underwater sounds are probably important factors that influence the real-world, real-time distributions and abundances of the narwhal because narwhal can hear other narwhal, other whales, predators, ships and other sources of sound across very long distances.
- Inuit manage their harvesting in real time as narwhal move throughout the open-water season because the movements, distributions and abundances of NEBI narwhal cannot be predicted accurately months in advance.

In the opinion of the QWB, the following proposed Inuit System of Narwhal Management for the waters of NEBI is based on strong evidence from generations of up-date IQ. It will enable Inuit to better manage their harvesting of NEBI narwhal, so they can effective conservation this very important species and resource.

Further, the QWB and affected HTOs conclude that the following proposed Inuit System of Narwhal Management for the waters of NEBI is strongly and legally supported by the Nunavut

Agreement, including but not limited to the following sections: 5.1.2 (e), (g) and (h), 5.1.3 (a)(v) and (b) (iii) and (v), 5.1.4, 5.3.3 (a), 5.6.50, 5.7.3 and 5.7.6.

Recommendations:

1. The QWB and six affected HTOs of Arctic Bay, Pond Inlet, Clyde River, Qikiqtarjuaq, Pangnirtung and Iqaluit make the following recommendations for decision by the NWMB to implement an Inuit System of Narwhal Management in the waters of Northern and Eastern Baffin Island (NEBI) in accordance with sections 5.1.2 and 5.2.33 of the Nunavut Agreement:
 - a) Delineate only one narwhal management unit in the waters of NEBI in accordance with Inuit Qaujimajatuqangit, as per the map and boundary points described in Appendix A;
 - b) Amalgamate and total the current TAHs and BNLs for Admiralty Inlet, Eclipse Sound and East Baffin Island into a single annual TAH and BNL for narwhal in the proposed NEBI narwhal management unit of the six communities (see Appendix B);
 - c) Continue the current annual inter-regional allocation of the BNL for Somerset Island narwhal to be harvested by Inuit in Arctic Bay (i.e., 51) and Pond Inlet (i.e., 53), to avoid impacts on allocations to other HTOs in the Kitikmeot and Qikiqtaaluk Regions;
 - d) Establish only one annual season for management of narwhal in the waters of NEBI; and enable the issuance of “all-season” tags (valid from April 1 to March 31, inclusive) annually by DFO to the six affected HTOs;
 - e) Enable the QWB to allocate the proposed NEBI BNLs among the six affected HTOs, and any future changes in the BNLs, among the six HTOs, based on IQ and other information, as per clauses 5.1.2(e) and (h), and 5.7.6. of the Nunavut Agreement;
 - f) Continue to carry-forward unused allocated tags from one year to the next for each HTO;
 - g) Support the QWB’s and HTOs’ jurisdictions to establish by-laws to govern how the BNLs, including carry-forward tags, may be allocated, how narwhal may be harvested, and generally how narwhal harvesting may be managed among the six HTOs under section 5.7.6 of the Nunavut Agreement, and locally near each of the six communities under section 5.7.3 of the Nunavut Agreement.
2. This proposal was developed by the QWB in close consultation with the six affected HTOs, and all six HTOs have supported the proposal. Therefore, the QWB waives the need for a Public Hearing by the NWMB, of course at the NWMB’s discretion.
3. To facilitate initial implementation of this proposal in 2022-23, the NWMB may prefer to approve interim implementation for a period of 1-5 years with subsequent reviews, at the NWMB’s discretion
4. The NWMB could encourage the creation of a forum whereby the QWB, the HTOs, DFO and other co-management partners may exchange information on IQ, science and harvest management strategies and methods related to NEBI narwhal on an as-needed basis, at the NWMB’s discretion.

Prepared by: Michael Ferguson, Qikiqtaaluk Wildlife Board

Date prepared: February 1, 2022



April 14, 2022

Hon. Joyce Murray
Minister of Fisheries and Oceans Canada
Government of Canada

Dear Joyce Murray:

Re: NWMB Decision on Qikiqtaaluk Wildlife Board's Request for Modifications to the Baffin Bay Narwhal Management System

NWMB Decision

At the Nunavut Wildlife Management Board's (NWMB or Board) Regular Meeting (RM001-2022) on March 9, 2022, the Qikiqtaaluk Wildlife Board presented a proposal requesting the Board to approve changes to the narwhal management system for the East Baffin Island, Eclipse Sound and Admiralty Inlet management units.

In its submission to the NWMB, the Qikiqtaaluk Wildlife Board (QWB) proposed the following modifications to the narwhal management system:

1. Combine East Baffin Island, Eclipse Sound and Admiralty Inlet management units into one management unit referred to by the Qikiqtaaluk Wildlife Board as Northern and Eastern Baffin Island (NEBI);
2. Establish a single Total Allowable Harvest (TAH) for narwhals in the waters of Northern and Eastern Baffin Island by merging the current TAHs for the narwhal stocks of East Baffin Island, Eclipse Sound and Admiralty Inlet;
3. Continue the allocation of 104 migratory season tags from the Somerset Island stock to two Qikiqtaaluk communities: Pond Inlet (53) and Arctic Bay (51);
4. Remove the seasonal non-quota limitation and establish one annual hunting season;
5. Enable the Qikiqtaaluk Wildlife Board to allocate the proposed NEBI TAHs among the six affected Hunters and Trappers Organizations (HTOs);
6. Support the Qikiqtaaluk Wildlife Board's and HTOs' jurisdictions to establish by-laws;
7. Continue to carry-forward unused allocated tags from one year to the next for each HTO.

The Qikiqtaaluk Wildlife Board's submission relied, in part, on a legal position adopted





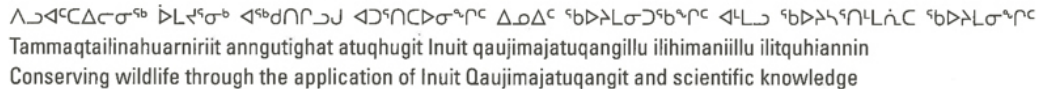
Admiralty Inlet and Somerset Island). This management strategy is intended to reduce potential local depletion. In addition, the division of the harvest season into a migratory and a summer season and the use of that harvest allocation model are intended to reduce the risk of over-exploitation that may occur when a smaller stock is assumed to be part of a larger and wider-ranging population. In 2012, the NWMB decided and the Minister accepted, to approve the narwhal IFMP on the condition that it be reviewed in 2017.

QWB Proposal

The QWB's proposal reflects concerns expressed by Inuit regarding the narwhal harvest management system. The QWB challenges the current definition of narwhal summer aggregation areas, arguing that the 2012 delineations and underlying assumptions do not reflect Inuit Qaujimajatuqangit of narwhal behaviour. Over the course of NWMB proceedings on narwhal management, including the 2012 IFMP proceeding, the NWMB has heard Inuit consistently share that narwhal move from one area to another during the summer. The NWMB understands Inuit have pointed out the delineation of summering stocks relied on a relatively small number of satellite tags and raised concerns about the reliability of the harvest allocation model assumptions.

The NWMB is aware that since 2012, new science and Inuit Qaujimajatuqangit information is now available, and a review of the narwhal IFMP is already overdue. The NWMB acknowledges that Inuit systems of wildlife management must be recognized in the Nunavut wildlife management systems, including the narwhal IFMP. The QWB and its constituent Hunters and Trappers Organizations express frustration with a narwhal management system that co-management partners increasingly accept needs to be updated. The longer this process takes, the more time passes since 2017 when the review was expected. Co-management partners need to take these concerns seriously and address themselves to make changes where warranted. The NWMB is aware that DFO has initiated a co-management working group to review the narwhal IFMP. The issues raised by the QWB are crucial for co-management partners and particularly for DFO to consider as the work of the working group proceeds. The NWMB supports a collaborative review process that considers and uses available Inuit Qaujimajatuqangit.

The QWB request to amalgamate management boundaries, remove non-quota limitations and to discontinue the use of the harvest allocation model represent significant changes to the narwhal management system and as proposed, they are to occur all at once. The QWB has not sufficiently explained how key features of their proposal would be implemented. This includes the justifying of its proposal with



Response from parties

The NWMB is concerned that making changes to the narwhal integrated management system at this time may have negative consequences to narwhal conservation, particularly if a viable alternative management system (including the necessary by-laws) is not available for the NWMB to review and consider when the proposal is received.



primary role Inuit have in wildlife harvesting in Nunavut.¹ Article 5 recognizes the need for an effective system of wildlife management that recognizes Inuit systems of wildlife management that contribute to wildlife conservation.² However, without further explanation, the NWMB is not persuaded by the QWB's argument of primacy for Inuit systems of wildlife management in this case.

The *Nunavut Agreement* calls for wildlife management that *recognizes* Inuit systems that contribute to conservation. While addressing Inuit rights, the NWMB takes significant account of conservation principles when making its decisions. The NWMB understands its wildlife co-management mandate requires accounting for both Inuit Qaujimajatuqangit *and* science (science is a fundamental feature of modern conservation and conservation is a critical objective of the NWMB's wildlife management mandate). A combination of both worldviews tends to form the basis for NWMB decisions depending on the circumstances. However, the NWMB is not able to support a proposal that relies on an assertion of Inuit "primacy" without that position being explained.

By-laws

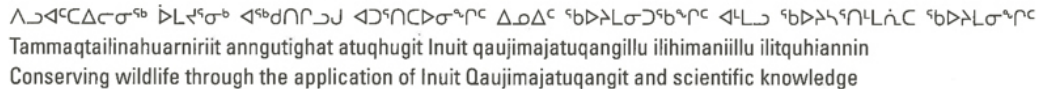
The NWMB makes decisions on the information before it. There were no QWB by-laws on narwhal harvest management provided to the NWMB for review. In this case, the QWB proposes an as-yet undrafted RWO by-law to replace an existing narwhal management system. The NWMB concerns itself with the effectiveness of any proposed management system that intends to satisfy a conservation purpose. There are unresolved questions about the specific mechanics of the proposed approach beyond the contributions of Inuit Qaujimajatuqangit to the definition of narwhal stock boundaries. The input of co-management partners is essential to the success of the Nunavut wildlife co-management system. Understanding the scope and content of a proposed approach to conservation requires co-management partner input and NWMB review. A proposal must be sufficiently developed for the NWMB to be confident it can achieve its intended aims. As submitted, the QWB proposal is not able to do so.

Co-Management

The QWB proposal does not appear to have made material changes to a similar proposal submitted almost two years ago. In this current proposal, the QWB relied on

¹ NA, s. 5.1.3(b)(ii)

² NA, s. 5.1.2(e)



In this decision, the NWMB provides its perspective on these key issues as the review proceeds. The current narwhal conservation system seems to be generally functional, is now under active review and draws its origins from a decision made after a co-management proceeding. The issues involved in narwhal management are also complex. Changing one part of the system, such as the definition of stock boundaries, will impact other parts of the narwhal management system. Those impacts require adequate explanation, or at least additional time for co-management partners to understand. The NWMB will not remove a conservation measure without a better understanding of the impacts of what will replace it. In this case, the QWB has not met the burden of introducing sufficient evidence to support its application.



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Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

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Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimajatuqangit and scientific knowledge

Conclusion

The NWMB supports a collaborative approach with respectful communication on the revision of the IFMP and calls on co-management partners to make a sincere effort at constructive dialogue. Going forward, the NWMB intends to have a more active role in contributing to the work of the narwhal working group. NWMB calls on co-management partners to consider the evidence about narwhal locations and stock definition presented by the Qikiqtaaluk Wildlife Board during work to revise the narwhal IFMP. Inuit evidence about current narwhal stock definitions in East Baffin Island, Eclipse Sound, Admiralty Inlet and Somerset Island, with potential implications to the harvest allocation for those narwhal stocks, must be seriously considered as part of the IFMP revision process.

The NWMB looks forward to your reply and completion of the *Nunavut Agreement* Article 5 decision-making process. If you have any questions regarding this letter, please do not hesitate to contact the NWMB.

Sincerely,

Daniel Shewchuk
Chairperson
Nunavut Wildlife Management Board

cc: Gabriel Nirlungayuq, Department of Fisheries and Oceans Canada.

June 10, 2022

Mr. Daniel Shewchuk
Chairperson
Nunavut Wildlife Management Board
Box 1379
Iqaluit, Nunavut
X0A 0H0

Dear Mr. Shewchuk:

Thank you for your correspondence of April 14, 2022 in which you conveyed the Nunavut Wildlife Management Board's (NWMB) decision with respect to the Qikiqtaaluk Wildlife Board's (QWB) Request for Modifications to the Baffin Bay Narwhal Management System. I wish to commend the members of the Board and its staff for the thorough and thoughtful analysis that has informed the Board's decision:

“RESOLVED that, Pursuant to Section 5.2.34(d)(i) of the *Nunavut Agreement*, the Nunavut Wildlife Management Board is not ready to modify the management system for Baffin Bay narwhal at this time.”

Pursuant to Section 5.3.18 of the *Nunavut Agreement*, I accept the Board's decision to not modify the management system for Baffin Bay narwhal at this time.

I am pleased to learn of the NWMB's intention to take a more active role in the work of the Narwhal Working Group. In my view, a collaborative co-management review of the Integrated Fisheries Management Plan for Narwhal in the Nunavut Settlement Area (IFMP) offers a better approach to exchange information and develop recommendations collaboratively. I look forward to the outcome of this review, and the recommendations proposed to better reflect the most current information from all knowledge streams, especially Inuit Qaujimajatuqangit pertaining to narwhal movement.

.../2

My department remains committed to working with all Nunavut co-management organizations to make resource management decisions that respect the *Nunavut Agreement* and include the best available knowledge sources and systems. I look forward to our continued collaboration in the co-management of the Nunavut narwhal fishery.

Yours sincerely,

A handwritten signature in blue ink, appearing to be 'J. Murray', with a long horizontal stroke extending to the right.

The Honourable Joyce Murray, P.C., M.P.
Minister of Fisheries, Oceans and the Canadian Coast Guard



CONSIDERATIONS FOR A NEW NARWHAL MANAGEMENT SYSTEM: SUSTAINABILITY OF NARWHAL AROUND NORTHERN AND EASTERN BAFFIN ISLAND

CONTEXT

The Qikiqtaaluk Wildlife Board (QWB) submitted a Request for Decision to the Nunavut Wildlife Management Board (NWMB) in June 2020 and March 2022. They proposed an evidence-based modification to the existing management system for the Baffin Bay narwhal (*Monodon monoceros*). The NWMB acknowledged concerns that the assumptions used to determine the narwhal stock boundaries and the harvest allocation model used to inform the 2013 Integrated Fisheries Management Plan (IFMP) do not reflect Inuit Qaujimajatuqangit (IQ), specifically narwhal movement patterns. The NWMB called on co-management partners to consider the evidence about narwhal stock definitions presented by the QWB while revising the narwhal IFMP. In order to revise the IFMP in a manner that addresses these concerns, Fisheries and Oceans Canada (DFO) Science advice is requested regarding new information to support narwhal stock delineation, and assessing the risks of managing the Baffin Bay narwhal population based on combining different narwhal stocks with and without seasonal harvesting windows. The results from this meeting will contribute to future revisions to the IFMP for narwhal in the Nunavut Settlement Area.

The objectives of this peer review will be to provide Science advice on the sustainability of Baffin Bay narwhal by:

1. Reviewing assumptions and currently available scientific evidence related to stock delineation;
2. Conduct a risk assessment for each of the scenarios listed below to inform sustainability:
 - a) Four independent stocks (East Baffin Island [EBI], Eclipse Sound [ES], Admiralty Inlet [AI], and Somerset Island [SI]): An updated version of the 2011 Harvest Allocation Model (HAM) (Richard 2011) based on the latest scientific knowledge (including narwhal movements between management units as described in DFO 2020), both with (1A) and without (1B) separate seasons.
 - b) Three separate management units without summer and migratory seasons:
 - i) combined EBI and ES, ii) AI, and iii) SI stocks.
 - c) Three separate management units without summer and migratory seasons:
 - i) combined ES and AI, ii) EBI, and iii) SI stocks.
 - d) Two separate management units without summer and migratory seasons:
 - i) combined EBI, ES and AI, and ii) SI stocks.
 - e) A single management unit comprised of the EB, ES, AI and SI stocks without summer and migratory seasons.
 - f) Sustainability of the current harvest in ES without summer and migratory seasons.

- g) The maximum sustainable harvest that could be allocated to any hunting region in Baffin Bay.

3. Identifying uncertainties, challenges, and limitations to the risk assessment.

This Science Response Report results from the Canadian Science Advisory Secretariat (CSAS) regional peer review held on January 14, 2025, on the Considerations for a New Management System: Sustainability of Narwhal in Northern and Eastern Baffin Island.

REVIEWING ASSUMPTIONS AND CURRENTLY AVAILABLE SCIENTIFIC EVIDENCE RELATED TO STOCK DELINEATION

Narwhals are mid-sized toothed whales that live in the Atlantic part of the Arctic Ocean. In the summer, they can be found in the inshore bays and fjords of the Canadian Arctic archipelago and Greenland (Watt 2017). When autumn arrives and fast ice forms, narwhals migrate to Baffin Bay and Davis Strait (Figure 1; Shuert et al. 2022). In the spring, narwhals gather along the ice edges on the east coast of Baffin Island and along the ice edges of West Greenland (Heide-Jørgensen et al. 2013). Narwhals are hunted during their spring and fall migration from communities along the migration route.

Sustainable management of hunting typically divides species into management units, or stocks (hereafter referred to as stocks) that are thought to be self-sustaining, and often defined using a multiple lines of evidence approach (Hobbs et al. 2019, IWC 2000, IWC 2002) that may include genetic indicators, residency time, site-fidelity, or other life history characteristics (Begg et al. 1999, Hobbs et al. 2019). Movement of animals among hunting regions, and hunting regions in which hunters have access to more than one stock, pose a particular challenge for ensuring individual stocks are managed sustainably (Allen and Singh 2016). Management units should be defined such that local decline in abundance is avoided, and that local stock declines will recover to healthy levels on a management timescale (the timeframe within which recovery is expected or idealized); the scale of 'local' (geographic area) depends on management objectives. Preservation of stocks is advantageous because variability in genetics and/or culture provides species resiliency (Brakes et al. 2019), which is particularly important in the Arctic, where the climate is changing at an unprecedented rate (Rantanen et al. 2022). In cases where stock delineation is complex, it is generally more precautionary to assume greater subdivision than to assume less (Taylor 1997, Taylor and Dizon 1999). Localized stock declines are probable if site fidelity is not expressly considered in harvest management (Cope and Punt 2009).

Richard (2010) summarized the history of stock designations for Canadian narwhal. Two management stocks were initially identified: the High Arctic stock (later named the Baffin Bay stock) and the Northern Hudson Bay stock (Strong 1988). Tracking evidence of individual fidelity to summer aggregation areas supported the refining of the Baffin Bay stock into further sub-units. Richard (2010) used four types of information to define summer stocks: 1) seasonal range and aggregations based on local knowledge and reports (not reviewed herein as it is outside the scope of DFO Science's review to evaluate Inuit Qaujimajatuqangit), 2) appearance and behaviour (not reviewed herein as it is outside the scope of DFO Science's review to evaluate Inuit Qaujimajatuqangit), 3) genetics and contaminants, and 4) seasonal range and aggregations based on satellite telemetry data. Evidence from genetic, contaminant and tracking data supports the definition of the Northern Hudson Bay summer aggregation as a separate stock, while the evidence for defining Baffin Bay stocks was strongest from tracking data and weakest from genetics and contaminants; however, Richard (2010) argued that differences among stocks may be overshadowed by the fact that many landed animals are

caught during seasons of migration, thus resulting in a mix of different stocks being sampled. Ultimately, Richard (2010) recommended an approach to reduce the chances of a localized stock decline by considering summer aggregations as separate stocks to provide scientific advice on Total Allowable Landed Catch (TALC). Richard (2011) developed a decision tool for resource managers, referred to as the Harvest Allocation Model (HAM). The allocation tool is based on a spatial model of the source and degree of stock mixtures that are hunted and produces possible solutions that maximize the catch, particularly for communities with large historic narwhal catches, while minimizing the risk of over-exploitation of any one stock. The major assumption of this tool is that whales are available to hunters in other regions during migration based on their migration route and in proportion to their summer stock size. This tool was considered an improvement over assuming that harvesters only take from the summer aggregation in their local area (Richard 2011).

As a result of that science advice and subsequent consultation, management of narwhal in Canada currently considers seven stocks, including six in the Baffin Bay population (Doniol-Valcroze et al. 2015) plus one in northern Hudson Bay (excluded in this response). Management of harvests by summer stocks is considered a precautionary approach (Richard 2010, Doniol-Valcroze et al. 2015). The Precautionary Approach is a general philosophy to managing threats of serious or irreversible harm where there is scientific uncertainty (DFO 2006, 2009). The Government of Canada developed the Federal Framework for the Precautionary Approach to ensure that caution would be applied consistently across disciplines in the government, and this became policy in 2003 (DFO 2006, 2009). Under this policy, risk tolerance levels are defined (e.g., <5% risk of decline is very low risk, 25-50% is moderate risk, and 75-95% is high risk), and management is responsible for choosing their risk tolerance level.

The six Baffin Bay narwhal stocks currently recognized in Canada are: 1) Somerset Island (SI), 2) Admiralty Inlet (AI), 3) Eclipse Sound (ES), 4) East Baffin Island (EBI), 5) Jones Sound (JS), and 6) Smith Sound (SS) (Richard 2010, Doniol-Valcroze et al. 2015) (Figure 1). All six summer stocks were surveyed in 2013 (Doniol-Valcroze et al. 2015). There are two other Baffin Bay summering aggregations, in Melville Bay and Inglefield Bredning, but these two stocks are found only in Greenland during the summer and are not considered in DFO's management of Canadian narwhal harvests. Scientific evidence for the stock delineation in Baffin Bay narwhal relies on multiple lines of evidence, which are reviewed below.

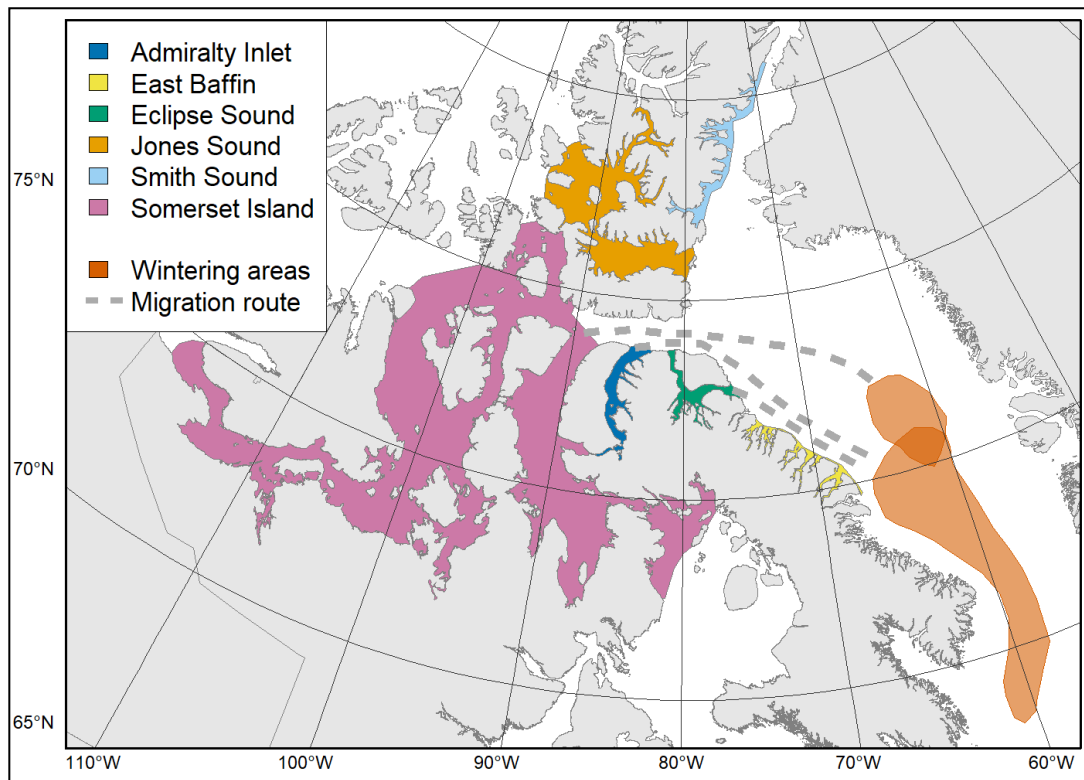


Figure 1. Map of the current summer management areas in Canada for narwhal from Baffin Bay with approximate wintering areas and migration routes (adapted from Heide-Jørgensen et al. 2013). Blue is Admiralty Inlet, yellow is East Baffin, green is Eclipse Sound, orange is Jones Sound, light blue is Smith Sound, pink is Somerset Island, dark orange is the overwintering areas, and the dashed line is the migration route.

Contaminant Data

Analysis of pollutant loads in marine mammal tissues has been useful for discriminating between populations of marine mammals with limited knowledge on migration patterns (Frank et al. 1973, Taruski et al. 1975). Contaminant concentrations vary due to prey composition in different foraging locations and can be used to discriminate marine mammal populations (Aguilar 1987). A study using organochlorine contaminants showed that narwhals from several different hunting locations, including JS, ES, and EBI, had different contaminant profiles (de March and Stern 2003). The study included 125 narwhal samples, 18 from JS, 25 from ES, and 64 from EBI.

Stable Isotope and Trace Element Data

Chemical composition of tissues can act as a biological tag to discriminate among groups of animals that inhabit different areas (Kerr and Campana 2014). Watt et al. (2012a) used discriminant analysis of stable isotopes of nitrogen and carbon in narwhal skin and found a significant difference between the AI and ES stocks in the spring and summer, and in a model that included all hunting areas regardless of season (Watt et al. 2012a). This study relied on 129 samples from ES and 76 samples from AI (Watt et al. 2012a). Following this, stable isotope and trace element analyses were used in conjunction with narwhal skin from five stocks in the eastern Canadian Arctic based on collections from 1990 to 2015 (Watt et al. 2019a). In this study, they defined biomarkers representing the migratory season as those from hunts occurring

from 26 April to 31 July, although this also integrates some of the signal from the wintering area; they refer to this time frame as the migratory period. They defined the summer residency period as 1 August to 30 September, and there were no samples collected after 30 September (Watt et al. 2019a). Discriminant analysis showed a significant difference between AI (n=19) and ES (n=47) stocks in the summer residency period, and both differed from JS (n=31) and SI (n=14) (Watt et al. 2019a). During the spring migration season (n=55), there was more overlap and less distinction among stocks, but 75% of whales were still classified correctly to their defined summer stock in both the migration and summer residency periods (91% for ES, 68% for AI, and 64% for SS; Watt et al. 2019a). Stable isotopes and trace element analysis provide a promising method to distinguish stocks, but these analyses were limited based on sample size and did not include narwhal harvested in summer in East Baffin Island (Watt et al. 2019a). A strong harvest sampling program that provides information on the location and timing of sample collection is needed to explore these methods further.

Genetic Data

Genetic studies on narwhals have focused both on nuclear (nDNA) and mitochondrial (mtDNA) DNA. Population geneticists use nDNA to identify genetic populations (Waples and Gaggiotti 2006), but mtDNA allows identification of geographic patterns in maternally inherited loci, which is particularly important for narwhal because they are hypothesized to be matrifocal in social structure (Palsbøll et al. 1997, Whitehead 1998).

nDNA

Petersen et al. (2011) genetically profiled 268 narwhals using 15 microsatellite markers and, using principal component analyses (PCA), were able to differentiate some summer narwhal aggregations. The analysis suggested that narwhals from JS (n=42) and SI (n=12) summering stocks were differentiated, but there was no discrimination among the Baffin Island narwhal stocks (n = 89) (Petersen et al. 2011). In 2024, de Greef et al. (2024) used whole genome sequencing of tissues of 60 narwhals and found that despite low overall genetic variation there was evidence of genetic structure supporting two groupings in the Baffin Bay population: 1) JS and SI (western Baffin Island (Ajuittuq (Grise Fiord; n=10), Qausuittuq (Resolute Bay; n=8), and Taloyoak (n=5)); and 2) AI, ES, and EBI (Panniqtuuq (Pangnirtung; n=1), Qikiqtarjuaq (n=4), Kangiqtugaapik (Clyde River; n=2), Mittimatalik (Pond Inlet; n=4), Ikpiarjuk (Arctic Bay; n=9), Kugaaruk (n=3), Igloodik (n=2)) (de Greef et al. 2024). Identification of these groups remained consistent in PCAs that were filtered for different time frames for harvesting months.

mtDNA

Narwhal mtDNA has also been explored, and despite overall low genetic variation, the frequencies of common haplotypes differed between eastern Canada and Greenland. Still, samples from Canada were grouped (n=29) (Palsbøll et al. 1997). Another study evaluating mtDNA in 433 narwhals found that narwhals from JS (n = 39) were weakly differentiated from those hunted in other Canadian locations, but no differences were found among Canadian harvest locations (de March et al. 2003). Postma (2017) re-evaluated mtDNA in 93 narwhal samples and found that narwhals had low genetic variability (only 1.3% variability within their DNA) and did not detect any structure. However, both authors acknowledged that the power to detect differences may have been low because of small sample sizes (de March et al. 2003, Postma 2017). A re-investigation into narwhal mtDNA from a greater number of samples in Canada may assist in genetic delineation, as it has in beluga whales (*Delphinapterus leucas*), the narwhal's closest living relative (Montana et al. 2024). However, samples from subsistence

harvests, environmental DNA, or remote biopsy of free-ranging narwhal are needed to conduct such a study.

Satellite Telemetry Data

Annual site fidelity

Nine satellite-linked tags equipped on narwhals transmitted for a full year, allowing for the assessment of inter-annual site fidelity based on individuals that returned in spring to the summering area where they were tagged the previous year (Table 1). Six of the eight whales re-entered the area where they were tagged the previous year. Two other whales were close to (and heading toward) the summering area where they had been tagged the previous summer, but contact with the transmitter was lost before they were inside the summering range (Heide-Jørgensen et al. 2013). The last narwhal that had a tag for over a year was tagged in ES in late August 2010, and it did not return to ES the following summer (Table 1; Watt et al. 2012b).

Table 1. Satellite tags that have lasted over one year to provide information on narwhal site fidelity (adapted from Heide-Jørgensen et al. 2013, with additions from Watt et al. 2012b).

Putative stock	Years	n	Observation	Reference
Somerset Island	2001-2002	2	Two whales tagged in 2001 returned to the summering area the following year	Heide-Jørgensen et al. 2003
Somerset Island	2001 & 2006	1	One whale tagged in 2001 was resighted in Lancaster Sound 5 years later while on its return migration toward Somerset Island	Heide-Jørgensen et al. 2008
Admiralty Inlet	2004-2005	1	One whale tagged in 2004 returned to the ice edge at Admiralty Inlet in June–July 2005 but departed again and went east in Lancaster Sound, passing the ice edge at Navy Board Inlet en route to the north coast of Baffin Island. Contact was lost before the August destination could be determined.	Dietz et al. 2008
Admiralty Inlet	2009-2010	1	One whale migrated back to the mouth of Admiralty Inlet and was last recorded a few tens of kilometres inside the inlet in June 2010	Heide-Jørgensen et al. 2013
Eclipse Sound	2010-2011	1	One female narwhal tagged in August 2010 in Eclipse Sound, overwintered in the Davis Strait, and when she returned north, she continued travelling west, past Eclipse Sound and into Admiralty Inlet on July 28, 2011. This female remained in Admiralty Inlet for at least two months until the tag stopped transmitting on October 10, 2011	Watt et al. 2012b
Northern Hudson Bay	2006-2007	2	Two whales tagged in Lyon Inlet in 2006 were tracked back to the same general area in June the following year	Westdal et al. 2010
Melville Bay	2007-2008	1	One whale tagged in 2007 returned the following year to the exact same area	Heide-Jørgensen et al. 2013

Summer site fidelity

One hundred and three satellite tags have provided information on the summer site fidelity of narwhal in Canada to summering grounds. These tags show that most (99/103; 96%) narwhals tend to remain in the summer aggregation areas where they were captured in the summer season (Dietz et al. 2001, Dietz et al. 2008; Marcoux and Watt 2021; Table 2). However, four narwhals (three in 2017 and one in 2010) tagged in ES visited the AI management area within the summer (24 July to 24 August) or the summer they were tagged. In 2017, this corresponded to 36 days spent in the AI management area out of the total 250 days (14%) of the summer period, during which the nineteen narwhals were tagged (Marcoux and Watt 2021).

Table 2. Total number of satellite tags equipped on narwhal in the summer (24 July to 24 August) and the proportion of those tags that were available to hunters in another summer aggregation in the summer season. Note that whales were not usually tagged at the beginning of the defined summer period and therefore only represent a portion of the summer season (see Table A1 for tagging dates and the contribution of each of the tags to the summer season; see Figure A1 and A2 for tagging tracks in the summer and outside of the summer, respectively).

Stock	Number available	Total tagged narwhal	Comments
Somerset Island	0	16	All narwhal tags remained in the Somerset Island management area in the summer.
Admiralty Inlet	0	40	All narwhal tags remained in the Admiralty Inlet management area in summer.
East Baffin Island	NA	NA	No whales have been satellite tagged in East Baffin Island
Eclipse Sound	4	47	4 of 47 narwhal tagged in Eclipse Sound were available to hunters in the Admiralty Inlet management area in summer. Another 11 satellite tags have been equipped on narwhal from Eclipse Sound, but they were not equipped until fall and therefore do not contribute information on the proportion available in another management area in summer.

CONDUCT A RISK ASSESSMENT FOR EACH OF THE SCENARIOS

DFO Science was requested to assess the risk of managing narwhal under seven different scenarios that separate or amalgamate management units as defined above. The requested scenarios only involve four of the six Baffin Bay narwhal stocks that are currently recognized in Canada, and as a result, Jones Sound and Smith Sound stocks are not evaluated herein.

The goal of this assessment was not to redefine narwhal stocks, but rather to assess the risk of decline associated with each scenario based on the existing stock delineation used for narwhal management in Canada (Richard 2010). The risk assessment aims to evaluate the impact of each scenario on the sustainability of the narwhal. How DFO considers sustainability depends on whether the stock is data-rich or data-poor. For a stock to be considered data-rich, it requires three or more abundance estimates over a 15-year period, the last estimate being ≤ 5 years old, and current information on fecundity and/or mortality; in this case, sustainable levels of harvest are considered using reference points based on maximum sustainable yield (Hammill and Stenson 2007). For data-poor stocks, such as narwhal, DFO uses the potential biological

removal (PBR) to determine sustainability (Hammill and Stenson 2007). The goal of PBR is to allow the stock to reach its maximum sustainable population size (the number of animals that will result in maximum productivity of the population) (Wade 1998). In the assessment of each scenario below, we rely on PBR to evaluate the level of harvest that would maximize the productivity of the stock.

In all cases, the PBR was calculated following Wade (1998) (see below) for each scenario, and the PBR was then divided by the loss rate (1.28 [Richard 2008]) to calculate a revised total allowable landed catch (TALC) for all possible scenarios.

$$PBR = 0.5 * R_{Max} * N_{Min} * F_R$$

Where: $N_{Min} = N / \exp(z \sqrt{\ln(1+CV^2)})$

the 20th percentile of the log-normal distribution of the estimated population size (Table 1) (Wade 1998) calculated from N, the abundance estimate, and its associated coefficient of variation (CV).

z = a standard normal variate and equals 0.842 for the 20th percentile.

R_{Max} = maximum rate of increase for the stock. The default for cetaceans when the rate is unknown is 0.04. It is then multiplied by 0.5 to simulate the effect of logistic density-dependent growth.

F_R = recovery factor set to 1.0 for a healthy stock (Wade and Angliss 1997) to be consistent with the recovery factor used in the most recent published science advice (Doniol-Valcroze et al. 2015).

$$TALC = PBR / \text{loss rate (1.28)}$$

Where loss rate is the total hunting mortality (considers the number of animals landed, the animals struck and lost, and the number of animals wounded and escaped, divided by two (assuming half of the animals wounded and escape later die of their wounds)) divided by the landed catch (Richard 2008).

Abundance estimates and CVs from the individual stocks were added together; for instance, for Scenario 2, EBI and ES abundances were added together (from Table 2), which results in a smaller CV, larger N_{Min} , and a larger PBR for combined stocks (Wade 1998).

We then used a model, first described by Wade (1998) and later used by Richard and Young (2015) and by Watt et al. (2019b), to evaluate the risk of decline of the smallest stock (Eclipse Sound) based on the new PBRs calculated. The population dynamics model uses a discrete form of the generalized logistic equation minus PBR. In the model, we assume the full TALC is taken every year, and we do not recalculate PBR since the time-lag for revising quotas is unknown.

The population model used here includes a random parameter for process error, W_t , to reflect natural variation in population processes:

$$N_{t+1} = W_t * (N_t + N_t * R_{max} [1 - (N_t / K)^{\theta}] - PBR)$$

where:

$$W_t = \exp(z * 0.05 - 0.05^2 / 2)$$

z = is a random normal deviate = $(-2 \cdot \text{Log}(\text{Uniform}(0,1))) \cdot \text{Cos}(2 \cdot \pi \cdot \text{Uniform}(0,1))$

Since there is little evidence for what a realistic fixed value for defining process error is for any marine mammal population, we used the same arbitrary value of 0.05 used by Richard and Young (2015). This value is consistent with the hypothesis that population dynamics of long-lived narwhals are not highly variable (Richard and Young 2015).

N_t = stock size at year t ; N_0 for ES starts at 2016 with an abundance estimate of 12,039 (Marcoux et al. 2019)

R_{max} = maximum net recruitment rate set as the default value for cetaceans of 0.04 (see above)

K = the pre-exploitation size or carrying capacity of the stock, assumed at 25,000 (Richard and Young 2015)

θ = the density-dependent shape parameter, 1 in this case for maximum net productivity at 50% K (logistic growth)

We ran 10,000 model simulations and present the median and 95% confidence interval of the stock abundance projection for each scenario. We also estimated the probability that the stock declines 20 years in the future.

Scenario 1

Four independent stocks (EBI, ES, AI, and SI): An updated version of the HAM (Richard 2011) based on the latest scientific knowledge and including narwhal movements between management units as described in DFO (2020), both with (1A) and without (1B) separate seasons.

The first part of this Scenario (1A) assumed that the EBI, ES, AI and SI are independent stocks as described in Richard (2011) and that hunters from Pond Inlet, Arctic Bay, Qikiqtarjuaq and Clyde River have access to a mix of stocks during the fall and spring migration (i.e., with separate seasons). The assumption from Richard (2011) that narwhals do not mix in the summer was updated to account for a small proportion of narwhals from ES that visit AI during the summer (9.76%; see Table 2).

The HAM tool (Richard 2011) was used to evaluate this scenario. As suggested in Richard (2011), catches were fixed for the western communities (Resolute Bay, Gjoa Haven, Taloyoak, Kugaaruk, Igloodik and Hall Beach), using the value of their current quota (450 narwhals; DFO 2023); however, for Pangnirtung and Iqaluit we did not fix catches but instead included them within EBI since the summer hunt of narwhal comes from this stock.

One of the inputs of this tool is the proportion of the hunt in each stock that occurs in the summer. For this input, we calculated the proportion of the hunt in summer from catch statistics from the most recent publicly available data (2006 to 2015; Watt and Hall 2018), where summer was defined as 24 July to 24 August. Summer dates are currently defined by the individual Hunters and Trappers Organizations/Associations in Canada; however, the dates of 24 July-24 August are being used in these scenarios as they are defined based on narwhal telemetry data collected over the past 30+ years that show that some narwhal move among stocks after 24 August. Additionally, these dates are used by the joint scientific working group of the North Atlantic Marine Mammal Commission (NAMMCO) on the Population Status of Narwhal and Beluga in the North Atlantic and the Canada/Greenland Joint Commission on Conservation and Management of Narwhal and Beluga (JCNB) (NAMMCO-JCNB Joint Working Group 2021).

Based on these dates, the proportion of the harvest taken in the summer was 0.47, 0.48 and 0.24 for communities in AI, ES, and EBI, respectively.

The TALC was based on the most recent abundance estimates and science advice available for this population (Doniol-Valcroze et al. 2015, Marcoux et al. 2019) (Table 3). The current quotas, however, are decided upon through co-management and are currently 450 for Somerset Island, 195 for Admiralty Inlet, 190 for Eclipse Sound, and 300 for East Baffin Island (DFO 2023).

Based on the tagging information presented above, we assumed that 9.76% of the narwhals from ES moved to AI during the summer. Therefore, the narwhal hunt from AI is a mix of both stocks, the abundance of the AI stock (N) plus the number of narwhals (9.76% of 12,049 or 1,175) that move from ES to AI.

We explored iterations of the tool, starting with catches 50 below the TALC up to the value of the TALC, without exceeding it. We sought to optimize solutions that 1) maximize the sum of all the catches, 2) maximize the catch in AI, 3) ES and 4) EBI, while maintaining the total catch per stock below the TALC (Table 4, Figure 2). In this scenario, there is a 38.5% probability that the ES stock declines in the next 20 years.

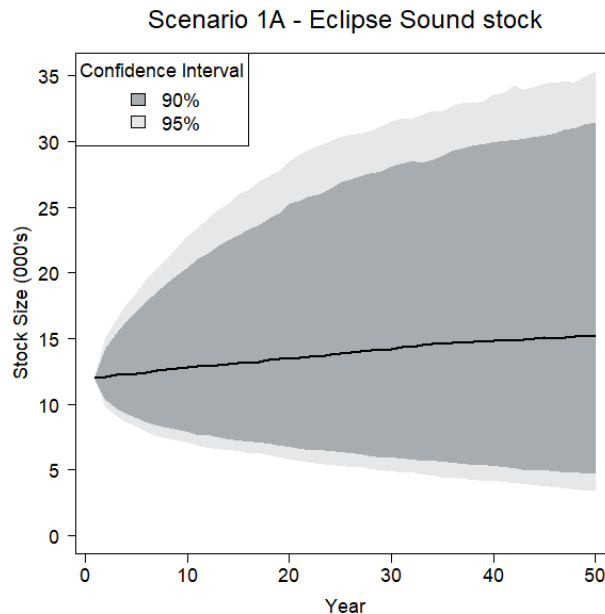


Figure 2. Stock abundance median projection for Scenario 1A that maximizes catch in Eclipse Sound (ES) while maintaining the total catch per stock below the TALC.

For the second part of the Scenario (1B), if there are no migratory harvest tags (i.e., without separate seasons), then we assume that the entire catch comes from summering aggregations of four stocks: AI, ES, EBI and SI narwhal. In this case, the PBRs and TALCs for each stock are indicated in Table 4. For this scenario to be sustainable, the entire hunt should take place during the summer season, as defined from 24 July to 24 August. With that scenario, there is a 38.5% chance that the ES stock declines in the next 20 years. Alternatively, we evaluated a scenario where the harvest only occurs during the migratory season (i.e., before 24 July and after 24 August) and calculated sustainable TALCs (Table 4).

For scenarios 2-5, we were not provided information on how the TALCs from the newly calculated PBRs would be allocated across management units. As a result, we have run three

theoretical possibilities to evaluate risk under each scenario. The first is a worst case scenario (A) in which the entire PBR is allocated to Eclipse Sound, (B) represents allocation to management units in proportion to their abundance (which is an assumption of the HAM as well), and (C) represents if harvests were allocated to management units proportionally to the number of people living in communities included in the management unit (albeit excluding the census for Iqaluit, which is the only city in Nunavut and that only harvests narwhal occasionally).

*Table 3. Potential biological removal (PBR) and Total Allowable Landed Catch (TALC) for the Admiralty Inlet (AI), Eclipse Sound (ES), East Baffin Island (EBI), and Somerset Island (SI) narwhal stocks using the most recent published abundance estimates and coefficient of variance (CV) for narwhal stocks in Canada. *Indicates the largest TALC which could be sustainably allocated to any hunting region in Canada, regardless of the time of year.*

Stock	Year	Abundance (CV)	PBR	TALC
AI	2013	35043 (0.42)	498	389
ES	2016	12039 (0.23)	150	117*
EBI	2013	17555 (0.35)	264	206
SI	2013	49768 (0.20)	842	658

Table 4. Potential biological removal (PBR) and Total Allowable Landed Catch (TALC) using the most recent published abundance estimates for narwhal stocks in Canada. The summer proportions used in the Harvest Allocation Model were 0.47, 0.48 and 0.24 for Admiralty Inlet (AI), Eclipse Sound (ES), and East Baffin Island (EBI), respectively, and the resulting TALCs for the migratory season (TALC_M) and summer season (TALC_S) are presented. Scenarios were explored up to the maximum TALC for AI, ES, and EBI stocks, while also considering that 9.76% of ES whales are available in AI.

Scenario	Stock	PBR	TALC _M	TALC _S	TALC _{M+S}
1A With season - maximizes cumulative harvest and the harvest in AI and EBI	AI	498	208	181	389
	ES	132	54	49	103
	EBI	264	157	49	206
	SI	576	-	-	450 [±]
With season - maximizes harvest in ES	AI	434	181	158	339
	ES	150	61	56	117
	EBI	233	138	44	182
	SI	576	-	-	450 [±]
1B Without season – summer hunt only	AI	513	0	400	400
	ES	135	0	104	104
	EBI	264	0	206	206
	SI	842	0	450 ±	450 [±]
Without season – migration hunt only - maximizes harvest in AI and EBI	AI	444	347	0	347
	ES	73	57	0	57
	EBI	264	206	0	206
	SI	576	450	0	450 [±]
	AI	421	329	0	329

Arctic Region

Consideration for a New Narwhal Management System

Scenario	Stock	PBR	TALC _M	TALC _S	TALC _{M+S}
Without season – migration	ES	96	75	0	75
hunt only - maximizes harvest in ES and EBI	EBI	264	206	0	206
	SI	576	450	0	450 [±]

[±] As suggested in Richard (2011), the TALC for Somerset Island (SI) was fixed to reflect the current quota.

Scenario 2

Three separate management units without summer and migratory seasons: i) combined EBI and ES, ii) AI, and iii) SI stocks.

If there are no migratory harvest tags, then we assume the entire catch comes from a fully mixed summering aggregation of three stocks: EBI-ES, AI, and SI narwhal, respectively. If the assumption that the whales in ES-EBI are fully mixed is not met, a worst-case scenario is that the whole harvest of the ES-EBI sustainable take is allocated to the smallest portion of that stock (ES). The model simulations for this scenario indicate that the ES stock would reach zero in approximately 39 years (Figure 3A) and has an 84.1% chance of decreasing in the next 20 years. If harvest is allocated in proportion to stock or population abundance and the assumption that whales in ES-EBI are fully mixed is not met, the ES stock has a 46.2% and 43.2% probability of decline in the next 20 years, respectively (Figure 3B and C).

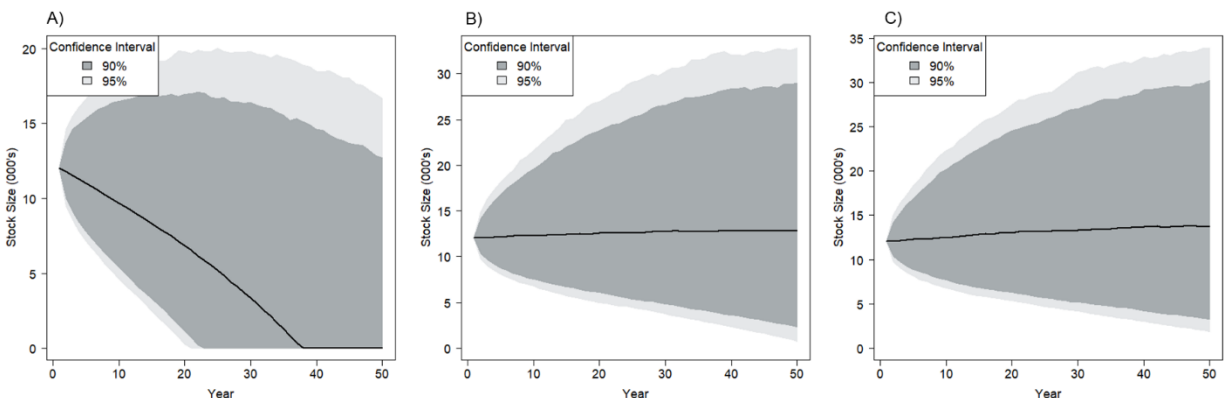


Figure 3. Stock abundance median projection for Eclipse Sound (ES) (the smallest stock) for Scenario 2 if the assumption that the ES and the East Baffin Island (EBI) narwhals mix in summer is incorrect and BRPBR is allocated A) fully to the ES summering ground, B) in proportion to the stock abundance, or C) in proportion to census population for each management unit.

Scenario 3

Three separate management units without summer and migratory seasons: i) combined ES and AI, ii) EBI, and iii) SI stocks.

If there are no migratory harvest tags, then we assume the entire catch comes from a fully mixed summering aggregation of three stocks: AI-ES, EBI and SI narwhal, respectively. If the assumption that the whales in AI-ES are fully mixed is not met, a worst-case scenario is that the whole harvest of the AI-ES sustainable take is allocated to the smallest portion of that stock (ES), and this would drive the ES stock to zero in approximately 23 years (Figure 4A) and has a 96.5% chance of decreasing in the next 20 years. If harvest is allocated in proportion to stock or

population abundance and the assumption that whales in AI-ES are fully mixed is not met, the ES stock has a 44.0% and 78.6% chance of decline in the next 20 years, respectively (Figure 4B and C).

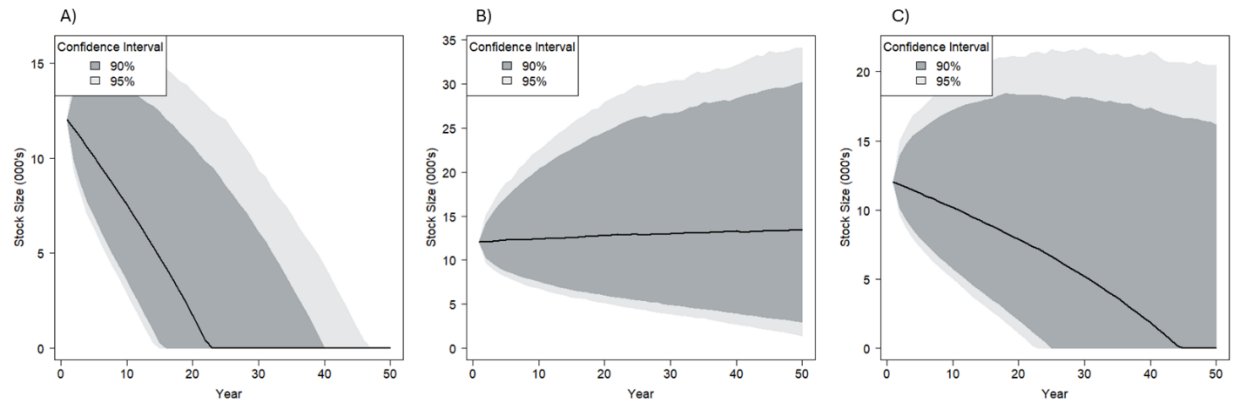


Figure 4. Stock abundance median projection for Eclipse Sound (ES) (the smallest stock) for Scenario 3 if the assumption that the ES and Admiralty Inlet (AI) narwhals mix in summer is incorrect and Potential Biological Removal (PBR) is allocated A) fully to the ES summering ground, B) in proportion to the stock abundance, or C) in proportion to census population for each management unit.

Scenario 4

Two separate management units without summer and migratory seasons: i) combined EBI, ES and AI, and ii) SI stocks.

If there are no migratory harvest tags, then we assume the entire catch comes from a fully mixed summering aggregation of two stocks: EBI-ES-AI and SI narwhal, respectively. If the assumption that the whales in EBI-ES-AI are fully mixed is not met, a worst-case scenario is that the whole harvest of the EBI-ES-AI sustainable take is allocated to the ES portion, and this would drive the ES stock to zero in approximately 15 years (based on median prediction, Figure 5A) and has a 99.7% chance of decreasing in the next 20 years. If harvest is allocated in proportion to stock or population abundance and the assumption that whales in EBI-ES-AI are fully mixed is not met, the ES stock has a 46.2% and 57.8% chance of decline in the next 20 years, respectively (Figure 5B and C).

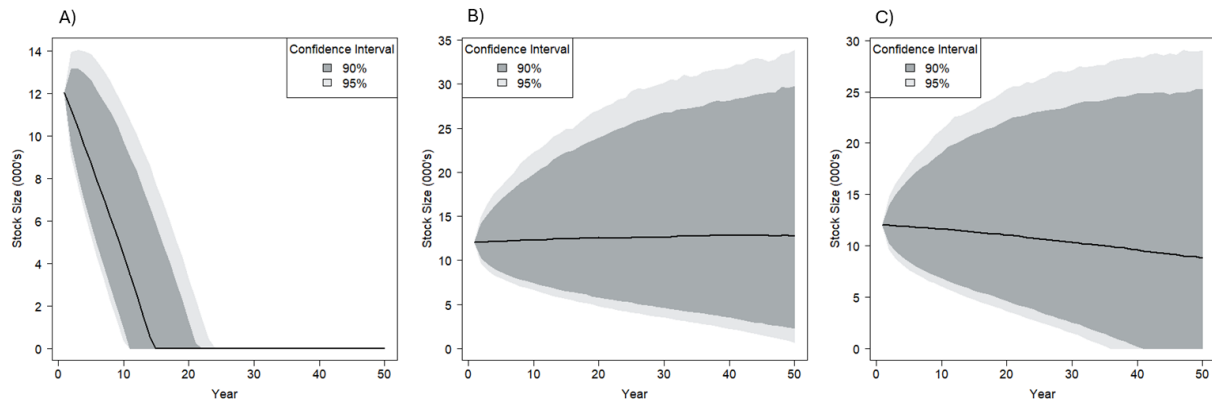


Figure 5. Stock abundance median projection for Eclipse Sound (ES) (the smallest stock) for Scenario 4 if the assumption that the ES, East Baffin Island (EBI), and Admiralty Inlet (AI) narwhals mix in summer is incorrect and Potential Biological Removal (PBR) is allocated A) fully to the ES summering ground, B) in proportion to the stock abundance, or C) in proportion to census population for each management unit.

Scenario 5

A single management unit comprised of the EB, ES, AI and SI stocks without summer and migratory seasons.

If there are no migratory harvest tags, then we assume the entire catch comes from a fully mixed single stock; EBI-ES-AI-SI. If the assumption that the whales in EBI-ES-AI-SI are fully mixed is not met, a worst-case scenario is that the whole harvest of the EBI-ES-AI-SI sustainable take is allocated to the ES portion, and this would drive the ES stock to zero in approximately 8 years (Figure 6A) and has a 100% chance of decreasing in the next 20 years. If harvest is allocated in proportion to stock or population abundance and the assumption that whales in EBI-ES-AI-SI are fully mixed is not met, the ES stock has a 48.6% and 54.6% chance of decline in the next 20 years, respectively (Figure 6B and C).

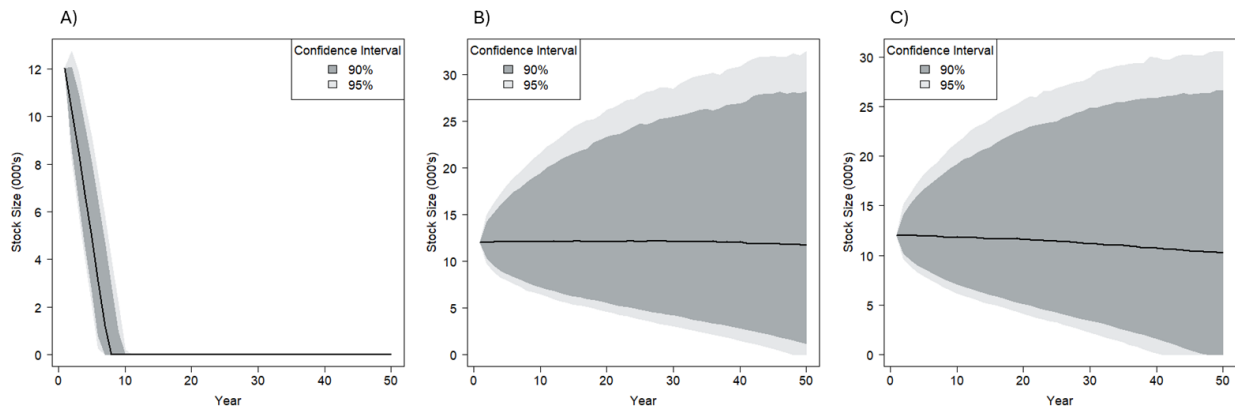


Figure 6. Stock abundance median projection for Eclipse Sound (ES) (the smallest stock) for Scenario 5 if the assumption that the ES, East Baffin Island (EBI), Admiralty Inlet (AI), and Somerset Island (SI) narwhals mix in summer is incorrect and Potential Biological Removal (PBR) is allocated A) fully to the ES summering ground, B) in proportion to the stock abundance, or C) in proportion to census population for each management unit.

Scenario 6

Sustainability of the current harvest in ES without summer and migratory seasons.

We were also requested to evaluate the sustainability of the current harvest and assess risk to the Eclipse Sound stock, considering the median harvest over the last ten years, irrespective of the harvest dates. At this level of harvest, there is a 42.9% chance of decline in the next 20 years (Figure 7).

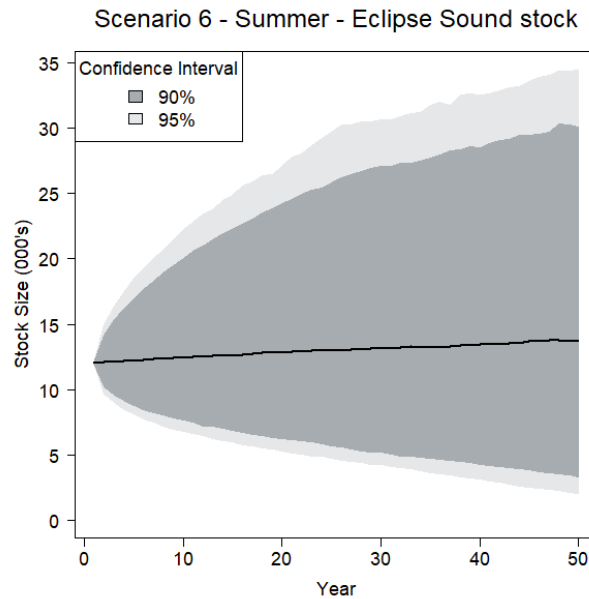


Figure 7. Stock abundance median projection for Eclipse Sound (ES) for Scenario 6.

Scenario 7

The maximum sustainable harvest that could be allocated to any hunting region in Baffin Bay.

This scenario was difficult to assess; however, we interpreted this as the maximum number of narwhal that could be harvested regardless of location, season, or management unit. The maximum sustainable TALC which could be taken anywhere at any time of year is 117 total for SI, AI, ES, and EBI together (Table 3). This is much less than the total annual harvests that could be sustainable if harvests are allocated with consideration of location, season, and management unit.

IDENTIFYING UNCERTAINTIES, CHALLENGES, AND LIMITATIONS TO THE RISK ASSESSMENT

All of the methods described above that have been used as evidence for narwhal stock delineation are limited by sample size. Many of the chemical methods rely on harvest samples that are provided by hunters on a voluntary basis. The number of animals that have been satellite tagged is also limited due to ethical, logistical, and financial considerations. Investigations of annual site fidelity rely on only a few tags ($n = 9$) that have lasted over a year. Summer site fidelity relies on more tags, but these whales were only tagged for a portion of the summer season (Table A1). For instance, if a whale was tagged on August 22 and remained in its summering area during summer, this site fidelity only represents a few days post-tagging.

Finally, while there have been > 100 satellite tags deployed on narwhals, this is only a small fraction of the total narwhal population (estimated at ~ 142,000; Doniol-Valcroze et al. 2015).

The drivers of narwhal movements are still not well understood, but are probably influenced by a combination of different factors. Narwhals in Eclipse Sound may be displaced by an increased level of vessel traffic from mining and cruise ships (Dawson et al. 2018), ice breaking, and anthropogenic development (Mayette et al. 2024). In addition, killer whales (*Orcinus orcas*) frequent Arctic waters in the summer and can impact narwhal movement and behaviour (Breed et al. 2017). None of these factors were considered in this assessment.

It was challenging to run a risk assessment without knowing how the harvest may be allocated; therefore, some assumptions needed to be made to conduct the risk assessments. We assumed a worst-case scenario where A) all takes are attributed to the smallest stock (ES), and other scenarios where allocations occurred in proportion to B) the estimated stock abundance, and C) the census population for communities within the management areas. These may or may not be realistic, but without an understanding of how allocations would be considered, it was the most reasonable approach. The modelled scenarios presented are also constrained by some sources of uncertainty. PBR calculations were based on assuming a recovery factor of 1 and a maximum productivity rate of 0.04. We used a recovery factor of 1 for all the scenarios, but if we combine management units, a lower recovery factor may be considered since there is added uncertainty in stock delineation with combined units. Regarding maximum productivity rates, Taylor et al. (2007) calculated a maximum population growth rate of 0.03, which may be more applicable for long-lived narwhal. For the scenarios presented here, we used the same values utilized in previous DFO Science Advice for calculating PBR for narwhal in Canada for comparability (Doniol-Valcroze et al. 2015); however, we acknowledge that more consideration into the values of these factors is warranted for advising on sustainable harvest levels, which is outside the scope of this assessment.

Scenarios 1A and 1B are based on the current HAM used to allocate narwhal to hunting regions in Canada. Our assessment of the scenario only evaluated possible iterations up to the TALC for each summering area. However, scenarios that exceed the TALC in some stocks (e.g., AI) are possible and could have also been explored.

The hypothetical scenarios depend upon the dates defined as summer versus migration. For this exercise, we chose dates that align with the timing of the aerial surveys and movement of narwhal based on available telemetry data. However, there is evidence that the timing of fall migration has changed (Shuert et al. 2022), and although there are no consistent trends in the harvest dates for narwhal hunts (Watt and Hall 2018), this change in migration could impact timing of hunts. These are important considerations, but were outside the scope of this assessment.

CONCLUSIONS

The modelled scenarios presented here for narwhal surrounding Baffin Island demonstrate that there is a risk of decline (probabilities ranging from 43-100% in Scenarios 2-5) in local areas if the narwhal aggregations are not fully mixing in the summer and the full TALC is hunted from the smallest portion of the stock (i.e., worst case scenario), or in proportion to stock size or population abundance. Canada's precautionary approach to fisheries management suggests a 5-25% risk of decline is a low-risk category (DFO 2009) and all of the scenarios that amalgamated stocks (Scenarios 2-5) resulted in a > 43% probability of decline. Even considering the current median harvest (Scenario 6), there is still a 42.9% chance of stock decline in 20 years in ES; this results in a medium risk of decline because the current quotas

are based on an abundance estimate from 2004 (Richard et al. 2010) rather than on newer abundance estimates from 2013 (Doniol-Valcroze et al. 2015) or 2016 (Marcoux et al. 2019), while our assessment used the best available current published information (from 2016; Marcoux et al. 2019). Therefore, scenarios that propose to amalgamate currently defined management units, or those that do not use the most up-to-date abundance information, pose a serious risk to narwhal.

Stable isotopes, trace elements, contaminants, annual site fidelity from 8/9 satellite tags (89%) which lasted over a year, summer site fidelity from 99/103 (96%) satellite tags equipped on whales in the summer, and new genetic evidence (De Greef et al. 2024) corroborate separation among some summering aggregations. DFO's precautionary approach framework suggests we should be cautious if scientific information is uncertain, unreliable, or inadequate (DFO 2006) and therefore, narwhal should be managed on the smallest scale for which there exists some evidence of stock structure. In this assessment, we did not consider mixing on the wintering grounds where whales are available to Greenland hunters, and we would strongly urge managers to consider that whales from summering aggregations in Canada are harvested annually on the wintering grounds in Greenland (ranging anywhere from ~ 200-550 whales annually; NAMMCO 2023). In addition, the current narwhal management framework assumes that narwhal are available in proportion to their abundance. However, narwhals exhibit divergent fall migration strategies with some individuals choosing an offshore route while others select an inshore route (Shuert et al. 2023). For beluga whales, smaller at-risk populations have been shown to migrate closer to shore compared to large not-at-risk populations, which predisposes them to greater hunting mortality (DFO 2024). A more advanced model that considers Greenland harvests and the proportion of whales that are realistically available to hunters in different hunting regions based on movement (Watt et al. 2020) should be considered and has been developed by the NAMMCO-JCNB Joint Working Group (2021). A time-series of abundance estimates for narwhal, as well as information from harvested narwhals (e.g., samples to evaluate genetics, reproductive parameters, and age and sex structure of the hunt), would significantly improve our confidence in modeling the population dynamics of these stocks.

A high Arctic cetacean survey of all the Baffin Bay narwhal stocks in Canada was conducted in August 2023 and is currently being analyzed. These additional abundance estimates will add to a time-series of estimates for all of the narwhal stocks, which may allow a model-based precautionary approach for developing science advice for management in these regions (Hammill and Stenson 2003). It is recommended that management of Baffin Bay narwhals be based on currently defined summering stock aggregations until a better understanding of mixing and site fidelity within the population has been developed. Otherwise, there is a risk of local decline, as shown in the scenarios above. This stock delineation approach is consistent with previous science advice and the precautionary approach.

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APPENDIX

Table A1. Dates of satellite tag deployment in Somerset Island (SI), Admiralty Inlet (AI), and Eclipse Sound (ES) and the number of days within the total defined summer (July 24-August 24) where tags provided information on summer site fidelity.

Stock	Individual ID	Deployment Date (yyyy/mm/dd)	Duration (days)	# of summer days out of 32 days (July 24-Aug 24)
SI	1	2000-08-14	65	11
SI	2	2000-08-14	99	11
SI	3	2000-08-17*	9	8*
SI	4	2000-08-16	74	9
SI	5	2000-08-17	104	8
SI	6	2000-08-17	118	8
SI	7	2000-08-17	89	8
SI	8	2000-08-19	15	6
SI	9	2000-08-23	421	2
SI	10	2000-08-24	381	1±
SI	11	2001-08-12	47	13
SI	12	2001-08-12	74	13
SI	13	2001-08-07	134	18
SI	14	2001-08-12	12	13
SI	15	2001-08-09	134	16
SI	16	2001-08-09	84	16
SI	17	2001-08-08	12	17
AI	1	2003-08-14*	131	11*
AI	2	2003-08-16	136	9
AI	3	2003-08-16	210	9
AI	4	2003-08-18	133	7
AI	5	2003-08-18	134	7
AI	6	2003-08-16	73	9
AI	7	2003-08-18	236	7
AI	8	2003-08-21	83	4
AI	9	2003-08-20	26	5
AI	10	2003-08-20	51	5
AI	11	2003-08-21	113	4
AI	12	2003-08-21	23	4
AI	13	2003-08-21	33	4
AI	14	2004-08-11	37	14
AI	15	2004-08-13	108	12
AI	16	2004-08-15*	140	10*

Arctic Region
**Consideration for a New
Narwhal Management System**

Stock	Individual ID	Deployment Date (yyyy/mm/dd)	Duration (days)	# of summer days out of 32 days (July 24-Aug 24)
AI	17	2004-08-13	280	12
AI	18	2004-08-24*	161	1*±
AI	19	2004-08-22	128	3
AI	20	2004-08-22	169	3
AI	21	2004-09-07*	23	NA**±
AI	22	2004-09-07*	21	NA**±
AI	23	2004-09-10*	12	NA**±
AI	24	2005-08-17*	148	8*
AI	25	2005-08-17*	175	8*
AI	26	2005-08-18*	132	7*
AI	27	2005-08-18*	220	7*
AI	28	2005-08-19*	133	6*
AI	29	2005-08-20*	15	5*
AI	30	2005-08-21*	64	4*
AI	31	2005-08-22*	117	3*
AI	32	2005-08-22*	24	3*
AI	33	2005-08-22*	9	3*
AI	34	2005-08-22*	95	3*
AI	35	2005-08-22*	163	3*
AI	36	2005-08-23*	151	2*
AI	37	2005-09-02*	18	NA**±
AI	38	2009-08-15	193	10
AI	39	2009-08-15	260	10
AI	40	2009-08-17	291	8
AI	41	2009-08-17	299	8
AI	42	2009-08-18	145	7
AI	43	2009-08-17	320	8
AI	44	2009-08-16	176	9
AI	45	2009-08-17	723	8
ES	1	1997-08-22*	16	4*
ES	2	1997-08-08	30	17
ES	3	1998-08-19	46	6
ES	4	1997-08-21	14	4
ES	5	1997-08-24	76	1
ES	6	1998-08-14	7	11
ES	7	1998-08-21	165	4
ES	8	1998-08-25	71	0
ES	9	1998-08-25	40	0

Arctic Region
**Consideration for a New
Narwhal Management System**

Stock	Individual ID	Deployment Date (yyyy/mm/dd)	Duration (days)	# of summer days out of 32 days (July 24-Aug 24)
ES	10	1999-08-12	80	13
ES	11	1999-08-13	69	12
ES	12	1999-08-15	80	10
ES	13	1999-08-15	84	10
ES	14	1999-08-21	45	4
ES	15	1999-08-21	211	4
ES	16	1999-08-21	5	4
ES	17	2010-08-21	252	4
ES	18	2010-08-21	292	4
ES	19	2010-08-22	410	3
ES	20	2010-08-22	189	3
ES	21	2010-08-24	151	1
ES	22	2011-08-16	128	9
ES	23	2011-08-16	180	9
ES	24	2011-08-16	314	9
ES	25	2011-08-19	126	6
ES	26	2011-08-19	302	6
ES	27	2011-08-18	201	7
ES	28	2011-08-18	221	7
ES	29	2012-08-13	30	12
ES	30	2012-08-14	128	11
ES	31	2012-08-17	128	8
ES	32	2012-08-18	124	7
ES	33	2012-08-19	119	6
ES	34	2016-08-22	81	3
ES	35	2016-08-18	3	7
ES	36	2016-08-22	86	3
ES	37	2016-08-29	9	NA [±]
ES	38	2016-08-29	20	NA [±]
ES	39	2017-07-31	126	25
ES	40	2017-08-01	57	24
ES	41	2017-07-31	78	25
ES	42	2017-08-03	84	22
ES	43	2017-08-03	84	22
ES	44	2017-08-03	218	22
ES	45	2017-08-05	64	20
ES	46	2017-08-12	77	13
ES	47	2017-08-16	50	9

Arctic Region

Consideration for a New Narwhal Management System

Stock	Individual ID	Deployment Date (yyyy/mm/dd)	Duration (days)	# of summer days out of 32 days (July 24-Aug 24)
ES	48	2017-08-30	66	NA [±]
ES	49	2017-09-02	84	NA [±]
ES	50	2017-09-02	40	NA [±]
ES	51	2017-09-03	44	NA [±]
ES	52	2017-09-03	69	NA [±]
ES	53	2017-09-10	53	NA [±]
ES	54	2017-09-11	52	NA [±]
ES	55	2017-09-11	72	NA [±]
ES	56	2017-09-11	66	NA [±]
ES	57	2018-08-17	55	8
ES	58	2018-08-17	80	8

For most tags, deployment date and number of days in the summer was calculated based on the date narwhals were captured. For a few individuals (), this information was not available and the date of the first transmission of a location was used as deployment date.

[±]Deployment was too late to contribute to assessment of summer residency.

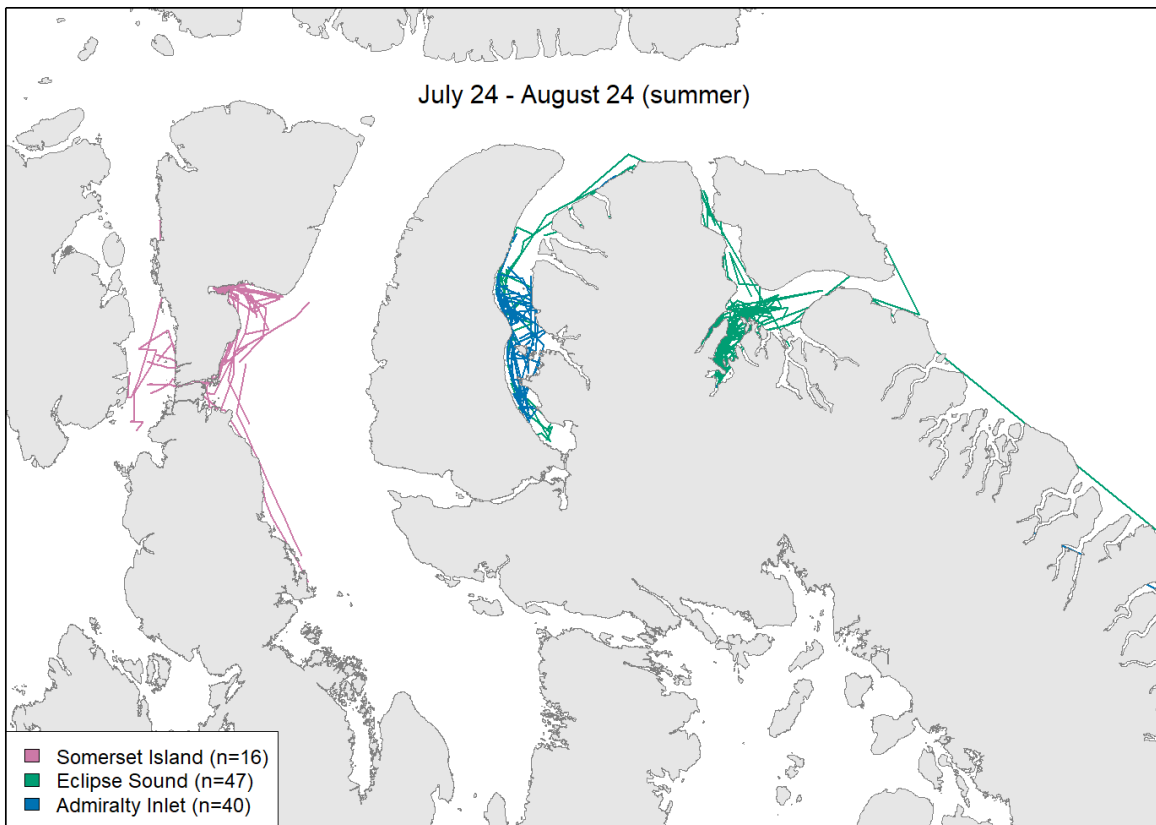


Figure A1. Telemetry tracks of all satellite tags from Somerset Island (pink), Admiralty Inlet (blue), and Eclipse Sound (green) from Table A1 for summer (July 24-August 24).

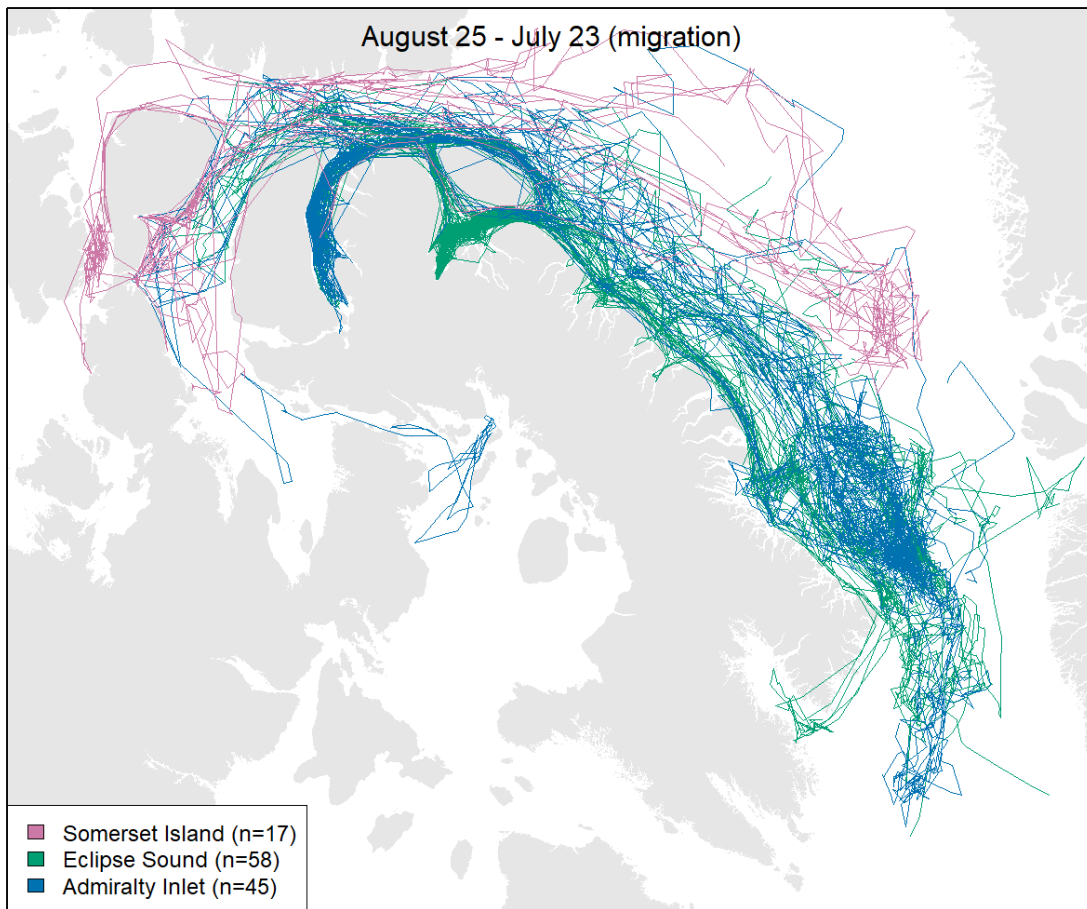


Figure A2. Telemetry tracks of all satellite tags from Somerset Island (pink), Admiralty Inlet (blue), and Eclipse Sound (green) from Table A1 for outside of the summer season (migration August 25-July 23).

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SUSTAINABILITY OF A FLEXIBLE SYSTEM OF TOTAL ALLOWABLE ANNUAL CATCHES OF NARWHALS (*Monodon monoceros*)



Narwhal (*Monodon monoceros*) by R. Phillips.



Figure 1. Approximate areas where Canadian summering aggregations of narwhals occur: A - Somerset Island, B - Admiralty Inlet, C - Eclipse Sound, D - East Baffin Island, E - Northern Hudson Bay. Other areas where narwhals are known to occur in summer: F - Parry Islands, G - Jones Sound, H - Smith Sound) [adapted from DFO 2011].

Context

There are presently five recognized narwhal summering stocks in the Canadian Arctic: Somerset Island, Admiralty Inlet, Eclipse Sound, East Baffin Island, and Northern Hudson Bay (Fig.1 A-D). Hunts on these narwhal stocks are managed by setting an annual Total Allowable Landed Catch (TALC) for each stock for a five-year period. The TALC is based on a Potential Biological Removal (PBR) estimate calculated for each stock, minus estimated hunting losses (i.e., struck and lost). The present analysis is in response to requests by Resource Management (RM) for peer reviewed science to address the questions of sustainability of a flexible TALC system for narwhals. There are also narwhals summering in Jones Sound, Smith Sound and the Parry Islands water (Fig. 1 F-H). Their stock definition and status is uncertain but advice given here would apply once assessments allow the setting of total allowable land catch limits.

SUMMARY

- There is a desire on the part of Inuit to have a "flexible quota system" management provision implemented in narwhal hunts, similar to what was employed under Community Based Management (CBM) of narwhal in Nunavut, i.e., to carry-over (credit) unused Total Allowable Landed Catch (TALC) for use in the subsequent hunting season or to borrow (debit) from the following years' TALC for use in the current hunting season
- Results of a deterministic model to investigate the robustness of a flexible TALC system clearly indicate that, for the scenarios investigated, such a management approach is sustainable, as long as the total hunting mortality over the five year period does not exceed five times the annual PBR.
- Key assumptions of the deterministic model are:
 - a. birth and death rates are constant,
 - b. PBR is updated every ten years with new abundance estimates,
 - c. Hunting loss is a constant fraction of TALC, and
 - d. flexible hunting limits are adhered to by all and landed catches are reported exactly (i.e., no implementation errors).
- Process error model results, which account for some variability of birth and death rates, showed a greater risk of the population becoming depleted under certain credit or debit scenarios but the risk was similar to the base scenario run for comparison where no debit or credit was applied.
- Better estimates of hunting loss rates would increase confidence in model results. These model results do not account for impacts of large ice entrapment mortality. These are rare events and have been the subject of previous science advice. A more detailed assessment of population trend would be warranted were there evidence of deterministic environmental effects on narwhal birth and death processes.

INTRODUCTION

There are presently five recognized narwhal summering stocks in the Canadian Arctic: Somerset Island, Admiralty Inlet, Eclipse Sound, East Baffin Island, and Northern Hudson Bay. Hunts on these narwhal stocks are managed by setting an annual Total Allowable Landed Catch (TALC) for each stock that remains constant for a five-year period. The TALC is based on a Potential Biological Removal (PBR) estimate calculated for each stock, minus estimated hunting losses. The present analysis is in response to requests by Resource Management (RM) for peer reviewed science to address the questions of sustainability of a flexible TALC system for narwhals.

Question 1: Is it sustainable if Arctic Bay and Pond Inlet exchange their unused spring and fall Marine Mammal Tags for use by either community during their migratory (spring/fall) narwhal hunts? The same question was also posed for Clyde River and Qikiqtarjuaq.

Question 2: Harvest credit (or carry-over) in a five year period:

- a. Is 100% carry-over for one year sustainable?
- b. What % carry-over for one year is sustainable?
- c. What % cumulative carry-over is sustainable over consecutive years (up to five years)?

Question 3: Harvest debit (or borrow-back) in a five year period:

- a. Is 100% borrowing from the following year sustainable once in a five year period?
- b. What % borrowing from the following year is sustainable?
- c. Can the total five consecutive years' total allowable catch be allocated to each year, in a five year period, any way the hunters choose as long as the sum of the five-years of catch does not exceed that total?

Question 4: How sustainable would a hunting mortality of five times the total allowable catch if applied to any one year of a five year period?

ASSESSMENT

Question 1: This question was addressed by previous science advice (Richard 2011). In short, the two communities in question,

- a. Arctic Bay and Pond Inlet, or
- b. Clyde River and Qikiqtarjuaq, are hunting from the mixed stocks in spring and fall and therefore are taking from the same stocks' TALCs.

Consequently, the harvest credits are transferable between Arctic Bay and Pond Inlet, or between Clyde River and Qikiqtarjuaq without invalidating previous advice on the sustainability of the affected stocks.

The remaining four questions required new analyses. They were performed using a variant of the Wade (1998) PBR robustness trial method, where a proportion of the PBR for a stock was either carried over (credited) to the subsequent year to make-up for a low catch year or borrowed (debited) from the next year if a given year's catch was higher than the annual PBR. Several scenarios were modelled in deterministic projections for 100 years, as in Wade (1998), varying start populations from 5,000 to 15,000 and recovery factors from 0.5 to 1. The details of the simulations are given in Richard and Young (2015).

In all cases, more than 95% of projected populations reached sizes in excess of the Maximum Net Productivity Level. The results of these simulations of flexible catch limits did not depart much from the base models, where no credits or debits were exercised.

The same simulations were done with an added parameter for process error, i.e., a parameter simulating variation in population dynamics (Richard and Young 2015). This process error, arbitrarily set at 0.05, to reflect our belief that narwhals do not have highly variable population dynamics, resulted in more variable results for debit or credit scenarios than the deterministic runs, but none of scenario results were significantly worse than the results of base models without debits or credits.

These results indicate that a system of flexible Total Allowable Landed Catches is sustainable, as long as the total hunting mortality over each five-year period does not exceed five times the PBR for that period. The modelling results also show that the choice of a fixed recovery factor of 1 does not significantly increase the risk to sustainability of credit or debit scenarios.

Sources of Uncertainty

The above conclusions are based on models with some important assumptions. The first is that TALCs are a constant fraction of total hunting mortality, i.e., that hunting losses are constant and very similar to what was used to provide TALC advice for narwhal stocks (0.28 from Richard 2008). Hunting losses may in fact vary from area to area, from season to season and with different hunting methods. Unfortunately, we have insufficient data at present to determine

those variations and apply them in modelling. Nevertheless, the PBR method has been shown to be robust to under-estimates of actual hunt mortality (Wade 1998).

Second, we assume that sources of human-induced narwhal mortality other than total hunting mortality (landed catch and hunting loss) are negligible. We have no reason to believe otherwise at present.

Third, we assume that flexible hunting limits are adhered to by all and that landed catches are reported exactly, that there are no implementation errors. Presently, we know of no reason to believe that narwhal landed catches are not reported accurately, but there have been no independent studies to verify this assumption. Perhaps this concern is moot as the latest records of narwhal catches (DFO) indicate that landed catches are, in many cases, lower than TALCs.

The models do not take into account the impact of rare ice-entrapment mortality, nor do they include environmental effects that might negatively impact birth and death processes in narwhal populations. Large ice entrapments are rare but can have a significant short-term impact on population trend. Science advice on one such entrapment event can be found in DFO (2012). Environmental impacts on birth and death processes in narwhal populations are unknown at present but, should there be evidence of long-term negative effects, more detailed narwhal population assessments would be needed.

CONCLUSIONS

These results are encouraging for the implementation of flexible TALCs, as they show little additional risk to the narwhal stocks from implementation of flexible TALCs. If a flexible TALC system is implemented, the five-year total landed catch should not exceed five times the annual TALC for each stock.

SOURCES OF INFORMATION

This Science Advisory Report is from the October 20-24, 2014 Annual Meeting of the National Marine Mammal Peer Review Committee (NMMPRC). Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada \(DFO\) Science Advisory Schedule](#) as they become available.

DFO. 2011. [Advice regarding the genetic structure of Canadian narwhal \(*Monodon monoceros*\)](#). DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2011/021.

DFO. 2012. [Effect of 2008 ice entrapment on the Eclipse Sound narwhal total allowable landed catch](#). DFO Can. Sci. Advis. Sec. Sci. Resp. 2012/020.

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Richard, P.R., and Young, R. 2015. [Evaluation of the sustainability of a flexible system of total allowable annual catches of narwhals \(*Monodon monoceros*\)](#). DFO Can. Sci. Advis. Sec. Res. Doc. 2015/006. iv + 13 p.

Wade, P.R. 1998. Calculating limits to the allowable human-caused mortality of cetaceans and pinnipeds. Mar. Mamm. Sci. 14: 1-37.

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Submission to the Nunavut Wildlife Management Board

For

Information: X

Decision:

Issue: Policy on Agreements and Permits Under Section 73 and 74 of the SARA

Background:

- Environment and Climate Change Canada (ECCC), Department of Fisheries and Oceans, and Parks Canada Agency are proposing an updated policy for Agreements and Permits issued under sections 73 and 74 of the Species at Risk Act (SARA).
- In certain scenarios, the minister may enter into an agreement or issue a permit that allows someone to engage in an activity that may affect a listed wildlife species, any part of its critical habitat, or the residence of the species that would otherwise violate SARA prohibitions.
- Permits apply in cases where there are SARA prohibitions or protected critical habitat. In Nunavut, SARA prohibitions only apply on ECCC and Parks Canada land and to date, Critical Habitat has only been protected on these lands. Further details about agreement and permit applicability are available in Appendix A.
- Activities that are eligible for a permit include:
 - An activity that is scientific research relating to the conservation of the species and conducted by qualified people; or
 - An activity that benefits the species or is required to enhance its chance of survival in the wild; or
 - An activity in which affecting the species is incidental to the carrying out of the activity
- If the species that may be affected is found in an area in which a wildlife management board (WMB) is authorized by a land claim agreement to perform functions, the minister must consult with the board before entering into an agreement or issuing a permit for a species in that area.

Updated Policy:

- This updated policy does not result in a functional change to the permitting process or create new obligations or prohibitions. It is intended to increase clarity and consistency for permit applicants and department officials regarding the application and review process.
- It does so by providing guidance on the following items:
 - Roles and responsibilities of applicants and department officials,
 - Activities that are eligible as per section 73(2),
 - Pre-conditions outlined in section 73(3),
 - Consultation requirements,
 - Anticipated timelines,
 - Terms and conditions, and
 - Coordination among other legislation and regulations.
- Clarification of roles relevant to WMBs:
 - WMBs will be consulted by department officials if the proposed activity affects a listed species, its critical habitat, or the residence that it is found in overlaps with where the WMB performs its functions.
 - During consultations, department officials will provide the WMB with the following information:
 - Comprehensive description of the proposed activity
 - List of species that may be affected
 - Description of the potential impacts of the proposed activity to the species, its critical habitat, or the residences, and
 - A comprehensive description of the proposed mitigation measures to minimize the impact
 - WMBs will be invited to provide information that will be considered in making a decision on the application.
 - The permitting process timeline may be extended beyond the 90-day timeframe to allow for consultations with WMBs

Engagement:

- Early engagement with Wildlife Management Boards, Regional Wildlife Organizations, Inuit Organizations, and Hunting and Trapping Organizations/Associations is underway.
- Early engagement involves email notification to all contacts about the proposed change, inviting input, and offering presentations.
- 30-day general public consultation period during Fall 2026 (specific dates to be determined)
- Input can be provided during early engagement or the general public consultation period.

Prepared by: Canadian Wildlife Service, Northern Region

Date: Sept. 4, 2026

Appendix A – Permit and Agreement Applicability in Nunavut

Permits, and subsequently this updated policy, apply when an application is received for an agreement or permit to authorize an activity that:

- Affects individuals or residences of individuals of a listed species that:
 - occur on ECCC or Parks Canada lands; or
 - are an aquatic species wherever they are found; or
 - are a migratory bird protected by the Migratory Birds Convention Act (MBCA), wherever they are found; or
- Affects critical habitat that is protected (e.g., protected by a protection order, Canada Gazette description or regulation)
- Is prohibited by an emergency order pursuant to section 80 to protect the species or its habitat; or,
 - No emergency orders are currently in place in Nunavut



Submission to the Nunavut Wildlife Management Board For

Information: X

Decision:

Issue: Proposed Critical Habitat Protection Regulations under Section 59 of the Species at Risk Act

Background:

- When a wildlife species is listed as threatened, endangered or extirpated, the *Species at Risk Act* (SARA) requires that Critical Habitat is identified to the extent possible in either a Recovery Strategy or Action Plan.
- Critical Habitat is defined as habitat that is necessary for the survival or recovery of a listed wildlife species.
- Identifying Critical Habitat does not alone prevent damage or destruction, a second step is needed to provide legal protection to the habitat that has been identified.
- One of the tools used to protect Critical Habitat is a federal Protection Order (section 58 of SARA). These orders are made on a species-by-species basis and can take multiple years to complete because of the administrative requirements.
- Under this process, consultation with Wildlife Management Boards and Indigenous partners for Critical Habitat occurs two times, once for the identification of Critical Habitat when the Recovery Strategy or Action Plan is developed and again for the Protection Order.

Proposed Regulations

- Environment and Climate Change Canada (ECCC) and Parks Canada are proposing new Critical Habitat Protection Regulations (CHPR) that automate the protection of Critical Habitat that has been identified in a Recovery Strategy or Action Plan. Protection would take effect 180 days after the Recovery Strategy or Action Plan is posted as final on the SAR Registry (section 59 of SARA).

- The automatic protection of Critical Habitat would apply only on federal lands and excludes devolved territorial lands.
- Protection on devolved lands would be done so using other regulatory tools or agreements in consultation with Wildlife Management Boards, Indigenous partners, and Territorial Governments, as appropriate.
- Under this new process, consultations with Wildlife Management Boards and Indigenous partners for the identification and protection of Critical Habitat will occur at the same time. This will occur during the development and finalizing of a recovery document. A decision for support of the Recovery Strategy and the Critical Habitat identified inside, will be requested from NWMB after the public comment period.
- This proposed change will protect Critical Habitat on federal lands faster because of fewer administrative steps and combined consultations. As a result, species will be protected more efficiently.
- This proposed change would apply to Critical Habitat that is identified after this regulation comes into effect. Critical Habitat that has been identified previously on federal land but has not yet been protected through a federal order, will undergo consultations before it is protected.

Engagement:

- Engagement material distributed through email included a summary of the proposed change, links to the Discussion Paper, and Notice of Intent. (July 23/24, 2026)
 - GN, NWMB, NTI, Regional Wildlife Organizations, Regional Inuit Associations, HTO/HTAs
- Engagement period took place from July 18 – Sept 16, 2026
 - No comments have been received as of the date this briefing note was prepared/submitted (Sept 18)
 - Comments from wildlife management boards will be accepted beyond Sept 16th, as needed

Prepared by: Canadian Wildlife Service, Northern Region

Date Drafted: September 4, 2026



Submission to the Nunavut Wildlife Management Board For

Information: X

Decision:

Issue: Targeted amendment of the definition of “Federal Land” in the *Species at Risk Act*

Background:

- Environment and Climate Change Canada (ECCC) is seeking to amend the *Species at Risk Act* (SARA) to clarify how the act applies to devolved lands.
- Currently, in SARA, there is no distinction between federal lands and devolved lands.
- This means that while the administration and control of devolved lands in the territories has been (or will be) transferred to territorial governments, the current definition in SARA does not reflect this change.
- One of the main implications of the current wording in SARA is that territorial laws are not recognized for the purpose of Critical Habitat protection under SARA.
- Prohibitions against the destruction of Critical Habitat outlined in SARA apply differently on federal and non-federal land.
- Under SARA, provincial Crown lands are treated as non-federal land and the primary responsibility for the protection of Critical Habitat for terrestrial species at risk is led by the provincial governments under their legislation.
- ECCC has been aware of the need for this amendment since the devolution agreements with Northwest Territories and Yukon were enacted, but the legislative changes to SARA have not been made yet.

Proposed Amendment:

- The proposed amendment seeks to treat devolved lands in the territories as non-federal land under SARA, mirroring provincial Crown lands.
- This would mean that primary responsibility for the protection of Critical Habitat for terrestrial species at risk in the territories would be led by the territorial governments under their legislation, as is the case for the provinces.

- Similarly, if the laws of the territory do not effectively protect the critical habitat, ECCC retains the ability to enact Critical Habitat protections through section 61 of the Act. This is one of the “safety net” provisions in SARA. Consultations with territories and wildlife management boards would be required before recommending this protection.
- The proposed amendment would align with the spirit of devolution as committed to under the Nunavut Lands and Resources Devolution Agreement.
- The proposed amendment would not involve any change in the way that aquatic or migratory bird species are protected under SARA.
- Removing devolved lands from the definition of federal land has been amended in other federal acts such as the 2002 amendment to the *Canadian Environmental Protection Act*, (1999).

Consultation:

- This proposed amendment relates to the shifting of responsibilities from the federal government to the territorial government during devolution. ECCC is engaging in targeted consultations with the Government of Nunavut as the impacted party.
- Consultations with the Government of Nunavut were initiated mid-September.
- We are engaging with NWMB to inform the board of the proposed amendment and the anticipated shift in responsibilities for Critical Habitat protection that would align with devolution, when finalized.
- Any future decisions made to protect Critical Habitat for species at risk will continue to follow the process outlined in the Nunavut Agreement.

Prepared by: Canadian Wildlife Service, Northern Region

Date Drafted: September 15, 2026