

CHAPTER 10: SUMMARY OF BOARD RECOMMENDATIONS

In the preceding Chapters of the Report, the Board has made numerous recommendations designed to address the comments, concerns and recommendations of the participants in the SEA. In developing these recommendations the Board recognizes that there may be many parties with shared responsibility for implementing these recommendations over time, and notes that the applicable regulatory authorities and processes associated with the assessment and regulation of oil and gas developments in Baffin Bay and Davis Strait are currently in a state of flux. Consequently, rather than issuing stale dated recommendations to authorities that may not exist in future regulatory structures, the Board has not prescribed which authorities may be responsible for implementation. Similarly, recognizing that there may be many different ways to meet the objectives of the recommendations in terms of structures and approaches, the NIRB's recommendations have focused on what the recommendation needs to accomplish, with much less emphasis prescribing how the objectives should be met. It is hoped that this flexibility will mean that parties having responsibility for the implementation of the recommendations will not be limited in their ability to complete the consultations, research, modelling, assessment and regulatory decision-making necessary to implement the recommendations in a meaningful and practical way.

For convenience, the Board's recommendations contained within the Report are summarized into the seven (7) tables that follow:

1. Recommendations Addressing Consultation, Coordination, and Public Engagement
2. Recommendations Addressing Regulatory, Royalty, and Benefits Regimes and Processes
3. Recommendations Addressing Baseline Research
4. Recommendations Addressing Assessment of Ecosystemic and Socio-Economic Impacts
5. Recommendations Addressing Impact Mitigation
6. Recommendations Addressing Monitoring
7. Recommendations Addressing Impact Modelling, Mapping, and Prediction

The Board has organized the tables on the basis of the type of recommendations offered (e.g., establishing baseline, assessing effects, etc.) and the Board's expected timing of the implementation of the recommendation:

- Recommendations to address irrespective of the current moratorium;
- Recommendations to address prior to lifting the current moratorium;
- Recommendations to address should the current moratorium be lifted; and
- Recommendations to address through future assessments.

For parties wishing to understand more fully the basis for specific recommendations, the tables include a reference to the relevant section(s) of this Report where the Board summarizes the views of parties and the Board's views that provide the basis for the specific recommendation.

10.1. RECOMMENDATIONS ADDRESSING CONSULTATION, CO-ORDINATION AND PUBLIC ENGAGEMENT

Throughout the SEA, and as discussed in [Chapter 9: Other Matters](#), it was clear that, in the past, the communities in Baffin Bay and Davis Strait did not feel they had been adequately consulted, nor that Inuit Qaujimajatuqangit and Inuit Qaujimaningit had been shared or considered in the approval of historical oil and gas development activities in the Area of Focus. The Board also noted that there are other Arctic and offshore regions within Canada and internationally that may have greater knowledge and experience with the effects of offshore oil and gas developments that may be willing to share their knowledge, experience, and best practices. On this basis, the Board made the following recommendations.

TABLE 34: SUMMARY OF BOARD RECOMMENDATIONS ADDRESSING CONSULTATION, CO-ORDINATION, AND PUBLIC ENGAGEMENT

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
1.	4.2 Spill Response Regime 8.9 Accidents and Malfunctions 9.0 Other Matters Considered by the Board	#29	Spill Response Regime; Accidents and Malfunctions	Gaps and Uncertainty	Building on the data collected in Recommendation #29, develop accessible public guidance on the roles and responsibilities of Nunavut stakeholders (Federal agencies, Government of Nunavut, Inuit organizations, and communities) for oil and gas spill response within the Nunavut Settlement Area and in the Canadian offshore adjacent to the Nunavut Settlement Area.
2.	5.3 Human Environment 9.0 Other Matters Considered by the Board	#38	Well-being and Health	Inuit Qaujimajatuqangit	Work with communities to develop the criteria and indicators that should be relied upon to assess community health and well-being, which respect Inuit Qaujimajatuqangit and Inuit Qaujimaningit.
3.	7.3 Human Environment		Well-being and Health	Inuit Qaujimajatuqangit	Conduct research in consultation with the Qikiqtani Inuit Association, Government of Nunavut and communities in the Area of Focus to identify the

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
	9.0 Other Matters Considered by the Board				potential for oil and gas development to have impacts on Inuit culture, heritage, and rights.
4.	7.3 Human Environment 9.0 Other Matters Considered by the Board		Land and Marine Use	Marine Planning	The Government of Nunavut, Nunavut Tunngavik Incorporated, the Qikiqtani Inuit Association, marine users (including commercial and traditional harvesters), and the communities in the Area of Focus should be included as active participants in all marine planning with the potential to affect the Canadian offshore waters of Baffin Bay and Davis Strait.
5.	8.9 Accidents and Malfunctions 9.0 Other Matters Considered by the Board		Accidents and Malfunctions	Marine Planning	All parties with responsibilities for emergency response in the Area of Focus, including the communities in the region, should establish relationships with other circumpolar nations and transboundary groups to support active and timely coordination with these groups to enhance transboundary emergency preparedness and response capabilities.
Recommendations to address prior to lifting the current moratorium					
6.	2.11 Community Engagement 9.0 Other Matters Considered by the Board	#8	Public Engagement	Inuit Qaujimajatuqangit	Timely, predictable, and adequate participant funding should be provided for all future Strategic Environmental Assessments and project-specific assessments to facilitate active participation by Nunavut communities, Inuit organizations, local hunters and trappers organizations, interested individuals, and other interested groups.
7.	7.6 Transboundary Effects		Transboundary Effects	Marine planning	Opportunities should be pursued to establish relationships and develop decision-making processes with neighboring jurisdictions and the Government of Nunavut, Inuit Organizations, and communities, in

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
	9.0 Other Matters Considered by the Board				support of developing common thresholds to assess effects from oil and gas development, to develop appropriate regulatory oversight of the industry, and to establish co-management mechanisms to address transboundary effects.
Recommendations to address should the current moratorium be lifted					
8.	2.11 Community Engagement 9.0 Other Matters Considered by the Board	#6	Public Engagement	Inuit Qaujimajatu qangit Marine Planning	In consultation with communities, relevant regulatory authorities should prepare community “toolkit” materials in plain language and general terms, which support community members becoming involved in research conducted in the Area of Focus and in the regulatory and marine planning processes associated with potential future oil and gas development in the Area of Focus.
9.	7.3 Human Environment 9.0 Other Matters Considered by the Board		Human Environment	Inuit Qaujimajatu qangit	The oil and gas development industry should establish communication strategies and foster working relationships with communities prior to the presentation of specific development proposals.
10.	7.3 Human Environment 9.0 Other Matters Considered by the Board	#3	Well-being and Health	Inuit Qaujimajatu qangit	Based on the results of the research conducted under #3, opportunities should be identified to support programs to limit negative impacts on Inuit culture, heritage, and rights (e.g., cultural training programs, including “On the Land Programs” for youth, Elder engagement, Inuit mentorship programs, etc.)
Recommendations to address through future assessments					

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
11.	7.6 Transboundary Effects 9.0 Other Matters Considered by the Board	#7	Transboundary Effects	Marine Planning	Future assessments and marine planning should include comprehensive transboundary effects assessments of valued environmental components and collaboration with Inuit residents in transboundary areas outside the Nunavut Settlement Area (e.g., Nunavik, Greenland, etc.) should occur whenever practical.

10.2 RECOMMENDATIONS ADDRESSING REGULATORY, ROYALTY, AND BENEFITS REGIMES AND PROCESSES

During the SEA, the Board heard that there was considerable uncertainty regarding the regulatory regime and the royalties and benefits that could accrue in Nunavut. In addition, the Board heard from communities and the SEA Working Group regarding the importance of ensuring that the gathering and consideration of Inuit Qaujimajatuqangit and participation of Inuit knowledge and rights holders is central to the regulatory and benefits regimes that would be responsible for assessing and regulating future oil and gas developments in Baffin Bay and Davis Strait. On this basis, the Board made the following recommendations.

Table 35: Summary of Board Recommendations Addressing Regulatory and Benefits Regimes

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
12.	7.3 Human Environment 9.0 Other Matters Considered by the Board		Land and Marine Use	Inuit Qaujimajatuqangit	Develop an Inuit-led process to establish an accessible and central holding place in Nunavut to support the gathering and sharing of Inuit Qaujimajatuqangit and Inuit Qaujimaningit studies.
Recommendations to address prior to lifting the current moratorium					
13.	4.1 Regulatory Regime 9.0 Other Matters Considered by the Board		Regulatory, Royalty, and Benefits Regimes	Gaps and Uncertainty	Clear descriptions should be developed to explain the royalties and benefits regime applicable to: <ul style="list-style-type: none"> oil and gas developments occurring exclusively in the Canadian offshore adjacent to the Nunavut Settlement Area; and oil and gas developments occurring in the Canadian offshore adjacent to the Nunavut Settlement Area which are

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					<p>supported by land-based infrastructure within the Nunavut Settlement Area.</p> <p>This analysis should clarify the extent to which <i>Canada Oil and Gas Operations Act</i> benefits can be accrued in Nunavut and specify the framework that would apply to compensation for interference with Inuit harvesting or damage to marine wildlife or wildlife habitat (within the Canadian offshore and the Nunavut Settlement Area).</p>
14.	4.1 Regulatory Regime 7.3 Human Environment 9.0 Other Matters Considered by the Board		Land and Marine Use Royalty and Benefits Regimes	Gaps and Uncertainty	Potential impacts to Inuit harvesting and Inuit rights (including threats to food security) should be considered when developing and implementing compensation frameworks for impacts on marine fish, waterbirds, and marine mammals.
Recommendations to address through future assessments					
15.	4.1 Regulatory Regime 9.0 Other Matters Considered by the Board		Regulatory, Royalty, and Benefits Regimes	Marine Planning; Gaps and Uncertainty	Assessments of proposed oil and gas projects should clearly identify the predicted benefits and potential compensation accruing to the region and potentially affected communities
16.	4.1 Regulatory Regime	#6 and #	Regulatory, Royalty, and Benefits Regimes	Inuit Qaujimajatuqangit	Structure future assessments conducted in, or adjacent to, the Nunavut Settlement Area and associated decision-making processes with the express

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
	9.0 Other Matters Considered by the Board				recognition of Inuit rights, Inuit Qaujimajatuqangit and Inuit Qaujimaningit, and the requirement to actively engage with Inuit knowledge holders and Nunavut communities.
17.	7.5 Cumulative effects 9.0 Other Matters Considered by the Board		Cumulative Effects	Marine Planning	The scope of future assessments and marine planning must include comprehensive cumulative effects assessments for valued ecosystemic and socio-economic components, including food security. Collaboration and input should be sought from all relevant parties and be informed by community-based monitoring programs.
18.	7.7 Effects of the Environment 9.0 Other Matters Considered by the Board		Effects of the Environment on Possible Offshore Oil and Gas Projects/Activities	Lack of Readiness	All specific oil and gas development proposals should demonstrate that: <ul style="list-style-type: none"> ▪ adaptive management approaches are incorporated into the project; ▪ the project design and equipment used will maintain safety, integrity, and reliability even in the harsh and rapidly-changing environmental conditions of Baffin Bay and Davis Strait.

10.3. RECOMMENDATIONS ADDRESSING BASELINE RESEARCH AND IMPACT ASSESSMENT

In several of the sections of the Report (e.g. Sections 5.1-5.3 and Sections 7.1-7.7) the Board's consideration of the potential ecosystemic and socio-economic effects for oil and gas development was limited by significant information gaps, uncertainty, and a lack of up to date information establishing baseline conditions, and assessing effects in the context of the unique environmental and socio-economic conditions of Baffin Bay and Davis Strait. In addition, the Board noted that very little of the baseline research and impact assessment information that does exist includes meaningful gathering or consideration of Inuit Qaujimajatuqangit and Inuit Qaujimaningit or consultation with Inuit knowledge and rights holders.

To address these gaps in the available baseline and impact assessment information in the Area of Focus, the Board has made the recommendations listed below.

TABLE 36: SUMMARY OF BOARD RECOMMENDATIONS ADDRESSING BASELINE RESEARCH

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
19.	5.4 Climate Change		Climate Change	Gaps and Uncertainty	<p>Collect baseline information and undertake assessments of the current and predicted effects of climate change in the Arctic, including direct and indirect impacts:</p> <ul style="list-style-type: none"> ▪ on the physical environment (e.g., marine currents, fog, and precipitation), ▪ on the biological environment (e.g., wildlife migration patterns); and ▪ on the human environment (e.g., changes to wildlife availability and effects on harvesting, changes to ranges and availability of fish species and effects on commercial harvesting, etc.).
20.	5.3 Human Environment 9.0 Other Matters Considered by the Board	#12, #19, #21-#79	Traditional Activity and Knowledge	Inuit Qaujimajatuqangit Gaps and Uncertainty	Ensure that all baseline research, data collection, effects assessment, and updating conducted in the Area of Focus includes consultations with Inuit knowledge and rights holders and consideration of Inuit Qaujimajatuqangit and Inuit Qaujimaningit.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
21.	5.3 Human Environment 9.0 Other Matters Considered by the Board	#12, #19, #20, #22-#79	Traditional Activity and Knowledge	Inuit Qaujimajatuqangit ; Gaps and Uncertainty	In consultation with the Qikiqtani Inuit Organization and communities in the Area of Focus, ongoing research programs should be prioritized to continue the gathering of Inuit Qaujimajatuqangit and Inuit Qaujimaningit regarding the marine environment and offshore areas in Baffin Bay and Davis Strait from Inuit knowledge holders in the communities in the Area of Focus.
22.	5.1 Physical Environment		Bathymetry	Gaps and Uncertainty	Conduct additional bathymetry research to identify navigational hazards in the Area of Focus and to improve the safety of shipping in the region.
23.	5.1 Physical Environment		Naturally Occurring Seeps	Gaps and Uncertainty	Conduct research to: <ul style="list-style-type: none"> ▪ identify naturally occurring oil and gas seep locations in the Area of Focus; and ▪ determine flow rates and other relevant characteristics.
24.	5.2 Biological Environment;	<Fish and Fish Habitat #25, Marine Environment and Sediment and Effects Assessment (#47 and #48)>	Plankton; Benthic Fauna;	Gaps and Uncertainty	Conduct research in the Area of Focus to improve understanding of: <ul style="list-style-type: none"> ▪ marine plankton, including abundance, diversity and biomass; and ▪ benthic flora and fauna, including their respective biologies and ecologies.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
25.	5.2 Biological Environment		Fish and Fish Habitat; Marine Mammals; Waterbirds	Gaps and Uncertainty	<p>Collect additional baseline data and undertake research in Baffin Bay and Davis Strait on:</p> <ul style="list-style-type: none"> fish and fish habitat (including spawning grounds, nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly to carry out their life processes); waterbirds; and marine mammals. <p>This research should be designed to improve the understanding of current status and potential for development activities to impact important populations and sensitive habitats. Research efforts should also include consideration for the effects of climate change and pollution and should focus on: population densities, distribution, abundance, and breeding success; monitoring of seasonal migration patterns and key habitat use; sensitive breeding and foraging habitat, including habitat used during winter conditions (e.g., polynyas); productivity; and prey abundance and distribution, include connections between species and other trophic levels (e.g., connections between plankton, fish, water birds, and marine mammals) .</p>
26.	5.3 Human Environment; 7.3 Effects on the Human Environment	#3	Well-being and Health	Gaps and Uncertainty Inuit Qaujimajatuqangit	With the direction and participation of the Qikiqtani Inuit Association and the 10 communities in the region, support further research into the role of harvesting in the marine environment, including:

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					<ul style="list-style-type: none"> the importance of harvesting on food security in communities; community-specific food security vulnerability <ul style="list-style-type: none"> the costs of harvesting; and importance of country food sharing in communities.
27.	5.3 Human Environment		Fish and Fish Habitat Commercial Harvesting	Gaps and Uncertainty; Alternatives	<p>Collect baseline fisheries and ecosystem data to assess the commercial and ecosystemic viability of existing and potential expansions to the commercial fisheries in Baffin Bay and Davis Strait, including consideration of:</p> <ul style="list-style-type: none"> turbot migratory patterns, spawning grounds, and stock connectivity with inshore waters in Nunavut and Greenlandic waters; the viability of harvesting additional species (e.g., clams, Porcupine crab, redfish, etc.); required investments in technology; and increases to local quotas.
28.	5.3 Human Environment		Heritage Resources	Gaps and Uncertainty	<p>Conduct a baseline assessment of heritage resources along the coastlines of eastern Baffin Island, Ellesmere Island, and associated islands to identify archaeological and paleontological resources that could be impacted by potential effects from offshore development activities.</p>

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
29.	8.9 Accidents and Malfunctions; 4.2 Spill Response Regime	<#6, #7,#32>	Accidents and Malfunctions	Marine Planning	Assemble available information on emergency preparedness and response, including: <ul style="list-style-type: none"> ▪ current regulatory oversight and responsibilities; ▪ current and required response capabilities for the Area of Focus; ▪ spill response technologies applicable to the Arctic (in both ice and open water); ▪ emergency response infrastructure; and ▪ best practices and measures for emergency prevention and response.
30.	5.1 Physical Environment	#70	Sea Ice and Iceberg Conditions	Marine Planning	Conduct baseline research on sea ice conditions, including sea ice characteristics, iceberg presence and distribution and the effects of climate change on sea ice distribution.
Recommendations to address prior to lifting the current moratorium					
31.	4.2 Spill Response Regime 8.9 Accidents and Malfunctions	#29 and #32	Spill Response Regime Accidents and Malfunctions	Lack of Readiness; Marine Planning	Building on the data collected in Recommendation #29, initiate a formal review of the existing capacity to respond effectively to a major spill of oil in the Area of Focus, highlighting the expected role of communities and community capacity in responding to emergencies. The Government of Nunavut, Designated Inuit Organizations, and Nunavut communities should be actively engaged through the review process.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
32.	4.2 Spill Response Regime 8.9 Accidents and Malfunctions	#31 and #29	Accidents and Malfunctions	Gaps and Uncertainty; Lack of Readiness	Conduct baseline research to assess the capacity and infrastructure required to manage and respond to a well blowout or major spill in the Arctic and to determine whether an effective response can be mounted in remote locations under harsh weather conditions with periods of prolonged darkness and in the presence of ice.
33.	4.2 Spill Response Regime 8.9 Accidents and Malfunction 7.2 Effects to Biological Environment	Climate Change	Special and Sensitive Areas and Areas of Concern and Importance Climate Change	Gaps and Uncertainty	Conduct additional research to identify the potential effects of oil and gas activities and unplanned events (e.g., ice breaking, vessels, spills) on sensitive areas, including consideration of changing conditions associated with climate change.
34.	5.1 Physical Environment	#29, #1 #31	Oceanography Spill Response Regime Accidents and Malfunctions	Gaps and Uncertainty	Conduct baseline research to improve understanding of oceanographic processes in Baffin Bay and Davis Strait during ice-covered and open-water conditions. This baseline information should be used to inform analysis of potential environmental effects and oil spill modeling.
35.	5.1 Physical Environment	#70	Coastal Landforms; Marine Sediment; Marine Wildlife	Gaps and Uncertainty	Undertake research to establish baseline information on coastal habitat features such as: <ul style="list-style-type: none"> ▪ shoreline form, substrate, and vegetation type; ▪ biological resources, presence of sensitive species; ▪ life stages;

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					<ul style="list-style-type: none"> ▪ sensitive human use resources; and ▪ the potential oil residency in different shoreline/substrate types.
36.	5.1 Physical Environment		Marine Sediment	Gaps and Uncertainty	<p>Establish baseline information for water and sediment quality in the Area of Focus to include:</p> <ul style="list-style-type: none"> ▪ water sampling conducted during both open water and ice covered conditions; ▪ water sampling from multiple depths chosen to reflect variances in temperature and salinity; and ▪ comparison of local and regional water and sediment quality data to all applicable guidelines for the protection of marine life water and sediment quality sampling (e.g., Canadian Council of Ministers of the Environment guidelines).
37.	5.2 Biological Environment	#24-#27	Species at Risk	Gaps and Uncertainty; Marine Planning	Baseline data should be used to identify sensitive (or critical) habitat for Species at Risk for incorporation into marine planning for the Area of Focus.
38.	5.3 Human Environment 9.0 Other Matters Considered by the Board	#2	Economy, Development and Employment	Gaps and Uncertainty	In collaboration with communities and responsible parties, update statistical data for key socio-economic indicators in the Area of Focus, including business investment data and contributions of economic sectors at the community level.
39.	5.3 Human Environment		Community Infrastructure	Lack of Readiness Gaps and Uncertainty	Prepare an inventory of the existing communication and transportation infrastructure in the Area of Focus. Assess the adequacy of the current inventory and determine requirements for additional capacity that

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					would be necessary to serve the development of the offshore oil and gas industry.
40.	7.3 Human Environment		Economy, Development and Employment	Gaps and Uncertainty	<p>Conduct a comparative analysis of oil and gas developments and alternative forms of economic development in the Area of Focus (e.g., commercial fishing, shipping, mining, and tourism) to include:</p> <ul style="list-style-type: none"> ▪ a labour market analysis ▪ cost-benefit-analysis; ▪ identification of education and training opportunities and ability to gain transferable skills; ▪ identification of types and numbers of local employment opportunities and other benefits; and ▪ discussion of potential limitations on the ability of Inuit communities to effectively participate in job, training, or other economic opportunities associated with a given type of economic development.
Recommendations to address should the current moratorium be lifted					
41.	5.1 Physical Environment 7.1 Effects to Physical Environment	#75	Acoustic Environment Plankton Benthic Flora and Fauna Fish and Fish Habitat	Gaps and Uncertainty & Marine Planning	<p>Conduct baseline research to:</p> <ul style="list-style-type: none"> ▪ establish baseline atmospheric and underwater sound levels in Baffin Bay and Davis Strait; ▪ improve understanding of the potential effects of underwater noise and seismic

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
			Waterbirds Marine Mammals		<p>activities on plankton, benthic organisms and invertebrates (including shellfish and arthropods), fish, waterbirds, and marine mammals; and</p> <ul style="list-style-type: none"> ▪ apply research to develop threshold criteria for assessing injury and behavioural disturbance.
42.	5.1 Physical Environment		Geology	Gaps and Uncertainty	Conduct research, in consultation with industry leaders in petroleum exploration and production and other Arctic regions with oil and gas developments, to improve understanding of geohazards in the Area of Focus (e.g., glacial feature distribution, ice scour analyses, and seabed and underwater slope stability assessments) and geotechnical properties of marine sediment relevant to exploratory drilling and placement of structures on the seabed.
43.	7.2 Effects to Biological Environment		Fish and Fish Habitat Waterbirds Marine Mammals	Gaps and Uncertainty	<p>Conduct research to identify potential risks (including implications for the health and safety of individuals or populations) resulting from attraction to offshore structures and associated vessels for:</p> <ul style="list-style-type: none"> ▪ marine fish; ▪ waterbirds; and ▪ marine mammals.
44.	7.2 Effects to Biological Environment		Fish and Fish Habitat Waterbirds Marine Mammals	Gaps and Uncertainty	<p>Undertake research to:</p> <ul style="list-style-type: none"> ▪ identify current methods used to monitor for the presence of marine fish, waterbirds, and marine mammals in proximity to offshore oil and gas development infrastructure, and

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					<ul style="list-style-type: none"> assess the effectiveness of these measures to avoid or reduce adverse interactions or other impacts.
45.	7.5 Cumulative effects		Fish and Fish Habitat Waterbirds Marine Mammals Cumulative Effects	Gaps and Uncertainty	<p>Conduct research regarding the potential for cumulative effects on marine fish, waterbirds, and marine mammals with consideration of:</p> <ul style="list-style-type: none"> associated oil and gas activities combined with existing and potential future activities, including mining, marine transportation, commercial fishing, Inuit harvesting and traditional land use, and practices; direct project interactions; changes to water quality; habitat alteration or loss including disturbance of ice habitat; underwater noise; oil spills, including chronic leaks from platforms; and the release of sewage and grey water.
Recommendations to address through future assessments					
46.	7.1 Effects to Physical Environment	#65 and #74	Air Quality and Greenhouse Gas Emissions	Gaps and Uncertainty	<p>Conduct research to:</p> <ul style="list-style-type: none"> assess upstream and downstream greenhouse gas emissions at various scales

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					<p>of offshore oil and gas development in Baffin Bay and Davis Strait; and</p> <ul style="list-style-type: none"> ▪ determine if, and to what extent, oil and gas resources can be developed in the Area of Focus within the limits imposed under national and international carbon reduction targets.

The Board recognizes that one of the central purposes of the completion of the baseline research recommended by the Board is to inform the assessment of potential ecosystemic and socio-economic impacts. Consequently, the Board has noted where there are links between the recommendations regarding baseline research and the recommendations in relation to ecosystemic and socio-economic impacts below.

TABLE 37: SUMMARY OF BOARD RECOMMENDATIONS ADDRESSING ASSESSMENT OF ECOSYSTEMIC AND SOCIO-ECONOMIC IMPACTS

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
47.	7.2 Effects to Biological Environment	#24	Plankton	Gaps and Uncertainty	Conduct research on the potential for effects on plankton of: <ul style="list-style-type: none"> ▪ nutrient pollution from routine and produced water discharge from oil and gas activities; ▪ ballast water discharge from shipping activities; and ▪ the potential introduction of non-native plankton species to the region.
48.	7.2 Effects to Biological Environment	<#24, #19, #72 and ##49	Benthic Flora and Fauna	Gaps and Uncertainty	Conduct research on the relationship between changes in bloom phenology, abundance, productivity, and species composition of benthic flora and changes in the marine environment (e.g., sea ice distribution, ocean circulation, surface conditions, and temperatures) to better understand the potential non-linear feedback loops between climate change and the benthic marine environment.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address prior to lifting the current moratorium					
49.	7.2 Effects to Biological Environment	#48 and #72	Benthic Flora and Fauna	Gaps and Uncertainty	Conduct research on the effects on benthic filtering organisms resulting from the uptake of suspended solids due to increased turbidity from development activities on/near the seabed.
50.	5.2 Biological Environment	#37, #69 and #71	Special and Sensitive Areas and Areas of Concern and Importance	Gaps and Uncertainty	Conduct further research to assess: <ul style="list-style-type: none"> the resiliency of sensitive areas; and whether these areas would return to natural conditions following cessation of oil and gas development.
51.	6.6 Additional Factors	#19-#46	Alternative Development Options and Hypothetical Oil and Gas Development Scenarios	Marine planning	Incorporating all relevant updated baseline data (including Inuit Qaujimajatuqangit and Inuit Qaujimaningit) and in collaboration with the Nunavut government, Inuit organizations, and local communities, initiate marine-based regional planning throughout the Area of Focus, including the development of regional priorities
52.	6.6 Additional Factors	#38, #27 and #51	Alternative Development Options and Hypothetical Oil and Gas Development Scenarios	Alternatives	Reflecting updated baseline information and regional priorities identified in #51, conduct an analysis of the risks and benefits of: <ul style="list-style-type: none"> alternative economic development options (e.g., commercial fishing, renewable energy, and tourism) for the Area of Focus; and development of alternative energy sources which could support domestic energy consumption in Nunavut.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
53.	7.2 Effects to Biological Environment	#25 and #27	Fish and Fish Habitat; Waterbirds; Marine Mammals Climate Change	Gaps and Uncertainty	<p>Reflecting updated baseline research, assess the potential impacts of oil and gas development on components of the biological, physical, and human environments in the Area of Focus including:</p> <ul style="list-style-type: none"> ▪ sensitive areas; ▪ fish and fish habitat (including at different life stages); ▪ waterbirds; and ▪ marine mammals. <p>Assessment should address uncertainty regarding potential physiological and behavioural responses to impacts (such as acoustic and underwater noise) and should indicate how areas impacted by development are expected to change over time and under different climate change conditions/models.</p>
54.	8.9 Accidents and Malfunctions		Accidents and Malfunctions	Gaps and uncertainty	<p>Conduct baseline studies to understand potential effects of an oil or gas spill/release on:</p> <ul style="list-style-type: none"> ▪ the Arctic environment and wildlife (including migratory species of marine fish, waterbirds and marine mammals); ▪ the Inuit way of life, and northern economy, including tourism and fisheries, and food security; and ▪ preparedness for handling any spills that could occur.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
					Studies should consider potential effects of oil or gas spill/release under-ice and during the open water season.
Recommendations to address should the current moratorium be lifted					
55.	4.2 Spill Response Regime	#29, #1 and #31	Spill Response Regime	Lack of Readiness	<p>Establish a long-term, comprehensive Arctic spill prevention, response, and evaluation research program to:</p> <ul style="list-style-type: none"> ▪ predict and evaluate the effects of spills on the Arctic biological, physical, and human environments; and ▪ identify and evaluate effective spill prevention and response methods, equipment, and technology in the Arctic environment.
56.	7.2 Effects to Biological Environment		Special and Sensitive Areas and Areas of Concern and Importance	Marine Planning	Conduct research to improve understanding of the potential for oil and gas development to have impacts on sensitive areas in the Area of Focus, including for polynyas and areas with ice cover. This research should address how these areas may change over time, based on which types of oil and gas development activities occur, and which climate change conditions/models are used.
57.	7.3 Human Environment 8.9 Accidents and Malfunctions	27	Commercial Harvesting Accidents and Malfunctions	Gaps and Uncertainty	Building on updated baseline information about commercial harvesting collected under Recommendation #27, identify the potential for oil and gas development (including resulting from associated spills or other incidents) to have adverse economic effects on Nunavut's existing and future commercial fisheries.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address through future assessments					
58.	7.2 Effects to Biological Environment	#24 and #47	Plankton	Gaps and Uncertainty	<p>Project-specific assessments should include the assessment of potential impacts to plankton and benthic flora and fauna:</p> <ul style="list-style-type: none"> ▪ posed by an oil spill or other possible shipping impacts; and ▪ due to chronic disturbance from increased shipping activity and underwater noise.
59.	6.6 Additional Factors		Alternative Development Options and Hypothetical Oil Gas Development Scenarios	Alternatives	<p>Strategic environmental assessments on offshore oil and gas activities in specific areas of known resources, such as the Saglek Basin and the Sverdrup Basin should be undertaken prior to project-specific assessment. Future SEAs should:</p> <ul style="list-style-type: none"> ▪ analyze different configurations and phases of potential oil and gas activities; and ▪ choose locations, environmental conditions, and study objectives in collaboration with the Nunavut government, Designated Inuit Organizations, and local communities.
60.	6.6 Additional Factors	#59	Alternative Development Options and Hypothetical Oil Gas Development Scenarios	Alternatives	<p>Any future SEAs or project-specific assessments should include consideration of alternative technologies, particularly for marine seismic surveys.</p>

10.4. RECOMMENDATIONS ADDRESSING MITIGATION, MONITORING, MODELLING, MAPPING AND PREDICTION

Although the significant gaps in baseline data and the associated effects predictions have limited the recommendations that the Board can make in respect of these areas, the Board has included the following general recommendations with respect to measures designed to mitigate/limit and monitor for the potential for impacts and also requiring that impact modelling, mapping, and predictions are updated to reflect the baseline and effects assessment research recommended by the Board..

Table 38: Summary of Board Recommendations In Relation to Impact Mitigation

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address prior to lifting the current moratorium					
61.	7.1 Effects to Physical Environment	#19-#60	Mitigation	Gaps and Uncertainty; Marine Planning	<p>Reflecting updated baseline and effects assessment data, and the experience of the National Energy Board, Canada-Newfoundland and Labrador Offshore Petroleum Board, Canada-Nova Scotia Offshore Petroleum Board, and other relevant parties, and in collaboration with the Government of Nunavut, Inuit Organizations, and local communities and informed by Inuit Qaujimajatuqangit and Inuit Qaujimaningit conduct research to:</p> <ul style="list-style-type: none"> ▪ identify standard impact mitigation measures associated with offshore oil and gas development; and ▪ assess the effectiveness (or limitations) of these standard impact mitigation measures in the Arctic environment; and develop standard mitigation measures for potential impacts associated with oil and gas developments in the Area of Focus.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
62.	7.2 Effects to Biological Environment	#25, #27 and #53	Fish and Fish Habitat Waterbirds Marine Mammals Acoustics Mitigation	Gaps and Uncertainty	<p>Reflecting updated baseline and effects assessment data, conduct research to analyze the effectiveness of mitigation measures (including new technologies) designed to reduce potential acoustic impacts associated with oil and gas development and project-related shipping on:</p> <ul style="list-style-type: none"> ▪ fish; ▪ waterbirds; and ▪ marine mammals. <p>Research should include delineation between different species and their various life stages.</p>
Recommendations to address should the current moratorium be lifted					
63.	8.9 Accidents and Malfunctions		Accidents and Malfunctions	Lack of Readiness	<p>In the development of emergency response plans, spill contingency and prevention plans, standard operating procedures, etc. and in the design of impact mitigation measures, oil and gas developers should incorporate lessons learned from accidents and malfunctions in similar jurisdictions, including associated standard operating procedures and impact mitigation measures.</p>

Table 39: Summary of Board Recommendations Regarding Monitoring

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
64.	7.3 Human Environment 9.0 Other Matters Considered by the Board		Mitigation Monitoring	Marine Planning Inuit Qaujimajatuqangit	Establish a mechanism for harvesters and community members to report: <ul style="list-style-type: none"> any observed issues with the quality of country food; and any other observed changes or concerns regarding impacts associated with development activities in the Area of Focus.
Recommendations to address prior to lifting the current moratorium					
65.	5.1 Physical Environment		Climate and Meteorology	Gaps and Uncertainty	Develop an improved surface weather monitoring network for the Area of Focus designed to increase the accuracy of weather forecasting throughout the region, including mechanisms for taking into account rapidly changing climate conditions.
Recommendations to address should the current moratorium be lifted					
66.	7.3 Human Environment 9.0 Other Matters Considered by the Board		Mitigation Monitoring	Marine Planning Inuit Qaujimajatuqangit	Develop and implement programs to involve Inuit and nearby communities in local monitoring programs in Baffin Bay/Davis Strait (particularly including monitoring of priority harvesting areas).

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
67.	7.3 Human Environment	#26	Mitigation	Inuit Qaujimajatuqangit	With the involvement of the Qikiqtani Inuit Association and communities, use food security research conducted under Recommendation #26 to inform project-specific impact assessments and monitoring programs

Table 40: Summary of Board Recommendations Addressing Impact Modelling, Mapping and Predictions

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address irrespective of the current moratorium					
68.	5.1 Physical Environment	#30#	Sea Ice and Iceberg Conditions	Marine Planning	Based on updated baseline information generated in Recommendation #30, model the temporal and spatial occurrence of sea ice in the Area of Focus.
69.	5.2 Biological Environment	#27, #50 and #71	Special and Sensitive Areas and Areas of Concern and Importance	Gaps and Uncertainty	Reflecting up to date information, including additional baseline gathered under Recommendations #27and #50, produce up-to-date online maps of sensitive habitats for the Area of Focus with layers of information for relevant species and factors considered to identify sensitive habitats.
Recommendations to address prior to lifting the current moratorium					
70.	5.1 Physical Environment	#35	Coastal Landforms	Gaps and Uncertainty	Based on additional baseline research on coastal habitat features conducted in accordance with Recommendation #35, develop a coastal/shoreline sensitivity atlas.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
71.	5.2 Biological Environment	#50 and #69	Special and Sensitive Areas and Areas of Concern and Importance	Marine Planning	Identify sensitive/critical habitat for Species at Risk where oil and gas activities should be limited, restricted, or prevented from occurring and/or where establishment of Marine Protected Areas may be appropriate.
72.	7.2 Effects to Biological Environment	#24, #39, #48 and #49	Benthic Flora and Fauna Plankton	Gaps and Uncertainty	<p>Reflecting updated baseline data, conduct modelling of the different habitats within Baffin Bay and Davis Strait to improve confidence in the assessment of potential effects from oil and gas activities on the habitat supporting:</p> <ul style="list-style-type: none"> ▪ benthic flora and fauna; and ▪ plankton. <p>Modelling should include consideration of strong currents in the area and the potential for currents to intensify and extend the footprint of the potential impacts of deleterious substances released into the environment.</p>
73.	7.7 Effects of the Environment		Effects of the Environment on Possible Offshore Oil and Gas Projects/Activities	Lack of Readiness	Investments should be made to improve ice monitoring and management services in the region to increase the accuracy of predictions in relation to sea ice extent, iceberg locations and trajectories, and the potential for extreme weather events.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
Recommendations to address should the current moratorium be lifted					
74.	5.1 Physical Environment	#19	Air Quality, Greenhouse Gas Emissions Climate Change	Gaps and Uncertainty	Shipping emissions associated with proposed oil and gas development should be modelled to understand the potential direct, indirect, and cumulative effects on air quality and contributions of greenhouse gas emissions
75.	5.1 Physical Environment	41	Acoustic Environment	Gaps and Uncertainty & Marine Planning	Based on baseline research conducted under Recommendation #41 to establish baseline atmospheric and underwater sound levels in Baffin Bay and Davis Strait, complete updated modeling of the dispersion of sound from anthropogenic sources and the potential direct, and cumulative effects, of noise from oil and gas development activities on wildlife receptors (including marine fish, waterbirds and marine mammals).
76.	7.3 Biological Environment	#50, #69, #71	Special and Sensitive Areas and Areas of Concern and Importance	Marine Planning	Establish setbacks or other potential development restrictions on the proximity of oil and gas development activities, infrastructure, and other components to the floe edge.
77.	7.3 Human Environment		Commercial Harvesting Special and Sensitive Areas and Areas of Concern and Importance	Marine Planning	Establish setbacks or other potential development restrictions on the proximity of oil and gas development activities, infrastructure, and other components (particularly seismic surveying activities) in areas, and during seasons, where commercial harvesting takes place currently, or in areas where expansion of commercial harvesting is expected to take place in the future.

No.	Report Sections	Related Recs.	Topic	Key Themes	Board Recommendation
78.	7.3 Human Environment	#77	Commercial Harvesting	Marine Planning	Consider establishing setbacks or other development restrictions on the proximity of oil and gas development activities, infrastructure and other components (particularly seismic surveying activities) in areas, and during seasons, that are currently closed to fishing in order to protect sensitive benthic areas and Narwhal overwintering habitats.
79.	8.9 Accidents and Malfunctions	#63	Accidents and Malfunctions	Marine Planning, Inuit Qaujimajatuqangit	In consultation with community members and Inuit knowledge holders, oil and gas developers should identify sensitive or important shorelines that could be impacted by spills, accidents, or other malfunctions associated with proposed oil and gas developments and project-shipping. When areas have been identified, oil and gas developers should ensure that spill plans incorporate this information and address community concerns, including items such as shipping restrictions during critical life cycle processes for marine wildlife (such as marine fish, waterbirds, and marine mammals).