

PARKS CANADA AGENCY SCREENING REPORT

SECTION A: GENERAL INFORMATION			
1. Project title:		Quark Expeditions – Cruise ship visit to Quttinirpaaq National Park (Tanquary Fiord and Arctic Adventure tours)	
2. Start of EA (date):		2007-06-22	3. CEARIS Registration (date): 2007-07-02
4. Environmental assessment (EA) conducted under:			
Canadian Environmental Assessment Act		<input checked="" type="checkbox"/> CEAR No.:	07-01-30251
Parks Canada Management Directive 2.4.2		<input type="checkbox"/> Internal Index No.:	
5. Location:		6. File No.:	
Quttinirpaaq National Park – Tanquary Fiord and Fort Conger			
7. Proponent:			
<input type="checkbox"/> internal Name of project manager:			
<input checked="" type="checkbox"/> external Name of person or organization: Quark Expeditions			
8. Representative of external proponent (name)		Title	
Susan Adie		Senior Expedition Leader	
9. Trigger:			
<input type="checkbox"/> Proponent		<input type="checkbox"/> Financial assistance	
<input type="checkbox"/> Transfer of interest in lands		<input checked="" type="checkbox"/> Permit or approval	
Reason for EA: Issuance of business licence			
10. Federal coordination: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Coordinator's name:			
Department or agency:			
12. Federal authorities (FA) in possession of specialist or expert information or knowledge:		Area of expertise	
Environment Canada		Migratory birds, Species at Risk, Water quality	
Fisheries and Oceans Canada		Fish and fish habitat, Marine mammals	
2. PROJECT DESCRIPTION:			
Cruise ships			
Quark Expeditions plans to conduct summer visits into Quttinirpaaq National Park. The ship, "Kapitan Khlebnikov" is an ice class vessel (LL3, Gross Registered Tons: 12,288) with a ship capacity of 112 visitors and 70 staff/crew.			
For the Tanquary Fiord tour, the ship will enter the park via Tanquary Fiord. Passengers will be transferred by zodiac (motor propelled), carrying 8-10 passengers, from the ship to the shore for day visits. Trips into the park will be made two to four times over the 24-30 hour period the ship will be in the fiord. Three walking tour options will be offered: a visit to the Independence Culture archaeological site; a walking trip to the Thule site; and a shoreline stroll. The timing of this trip is early August.			
For the Arctic Adventure tour, the ship will enter Lady Franklin Bay, outside the park. Passengers will access the Fort Conger site for a day trip via helicopter. Park staff will be present to monitor the land-based activities. The ship will be based in the area for approximately 6 hours. Trip timing is mid August.			

Activities associated with the cruise ship itself are:

- Travel
- Accidents/malfunctions

Canadian or international law prohibits activities such as ballast water disposal, waste disposal and sewage disposal in the areas near the parks; therefore we will not be evaluating these activities in this assessment.

Activities associated with zodiacs are:

- Travel
- Landing
- Accidents/malfunctions

Activities associated with helicopters are:

- Travel
- Landing
- Accidents/malfunctions

Activities associated with passengers visiting national parks on land are:

- Human waste disposal
- Waste disposal
- Hiking

3. PROJECT RATIONALE:

The national parks in Nunavut are very remote. Cruise ships provide one way of accessing these parks and providing tourists with an opportunity to experience the national park. Many of the passengers do not possess the physical fitness or skills to visit the parks in any other way. As a result, cruise ships provide access to these remote parks for a broader selection of visitors.

5. PROJECT COMPATIBLE WITH MANAGEMENT PLAN

☒ Yes ☐ No

The Interim management guidelines for Quttinirpaaq (late 1980's) does not refer to cruise ships.

Reasons:

The draft management plan (2007) recognizes cruise ships as acceptable an visitor activity with Tanquary Fiord as the predominant point of access. This draft plan is in the final approval stages and has the support from the Joint Park Management Committee.

6. SCOPE OF ENVIRONMENTAL ASSESSMENT

6.1 Scope of project:

The project includes:

- Cruise ship activity in national park waters (Tanquary Fiord) or near enough (Lady Franklin Bay) to directly impact national park lands or waters
 - Travel
 - Accidents/malfunctions
- Zodiac use in national park waters (Tanquary Fiord)
 - Travel

- Landing
- Accidents/malfunctions
- Helicopter use over and landing at Fort Conger
 - Travel
 - Landing
 - Accidents/malfunctions
- Passenger visits on the ground at Tanquary Fiord and Fort Conger
 - Disposal of human waste
 - Disposal of waste
 - Hiking

6.2 Scope of factors to be considered:

The environmental assessment of cruise ship activities is based on factors as outlined in section 16(1) of *CEAA*.

Valued ecosystem components

Valued ecosystem components (VECs) were selected based on issues of concern and ecological integrity indicators identified in the park management plans. The VECs selected represent ecosystem components that are particularly vulnerable to disturbance and/or are likely to be impacted by the project activities. The selected VECs serve as the focus of the environmental effects analysis. Concerns with respect to air quality are considered to be minimal and therefore will not be further discussed.

Vegetation and soils

Native vegetation species and communities could be affected by these activities. Soil structure could be impacted through compaction or erosion. There are no vegetation species at risk in the areas affected by this project.

Wildlife

Impacts (disturbance, displacement, and habituation) to all wildlife species will be considered, although special consideration will be given to species highlighted in management plans and species at risk.

Aquatic resources

Water quality could be impacted by pollution, human waste or erosion. Impacts to water quality may result in subsequent impacts to aquatic wildlife and vegetation species. Impacts to species at risk and other aquatic species, including marine mammals, will also be considered.

Cultural resources

Parks Canada Guiding Principles and Operational Policies (Canadian Heritage Parks Canada 1994) states that "Parks Canada will assess effects on cultural resources whether or not they flow from bio-physical effects" (Parks Canada 1998). To address both the requirements of *CEAA* and of Parks Canada's policies, direct impacts to cultural resources will be assessed in addition to indirect impacts caused as a result of changes in the environment.

Aboriginal land use

Traditional activities are protected by land claims and valued as part of ecological integrity of these national parks. As a result, direct and indirect effects of activities on Aboriginal land use will be considered. Visitors could interfere with the direct use of resources or indirectly affect Aboriginal use by, for example, negatively affecting wildlife populations, thereby decreasing hunting opportunities.

Visitor experience

Canada also has a mandate to facilitate the education and enjoyment of the parks by the public. To address this mandate, direct impacts to visitor experience will be assessed in addition to indirect impacts caused as a result of changes in the environment.

Geographic extent

The geographic extent will include Quttinirpaaq National Park of Canada (Quttinirpaaq) and will include the area from the cruise ship to the shore and the area of shore based activities.

Temporal extent

The temporal extent of the review will be for the duration of each visit. This environmental assessment will be reviewed in 5 years if it has not been replaced before that due to changes in the project.

7. DESCRIPTION OF ENVIRONMENT**Vegetation and soil**

Vegetation in the northern national parks of this class environmental assessment varies from boreal to arctic. The parks will be described individually based on the description of the ecoregion they fall within. The descriptions of ecoregions are taken from *A National Ecological Framework for Canada* (Ecological Stratification Working Group 1996) and *Ellesmere Island National Park Reserve Resource Description and Analysis* (1994).

Quttinirpaaq is found in the Eureka Hills, Ellesmere Mountains and Ellesmere Ice Caps ecoregions. Vegetation is sparse. Moss, lichen and cold-hardy vascular plants such as sedge and cottongrass are found in clumps. Occasionally arctic willow, *Dryas spp.*, kobresia, sedge and arctic poppy are found. Regosolic static, regosolic turbic cryosols, and orthic turbic cryosols are found on colluvial, alluvial and marine deposits. Ice fields and nunataks are common. The Tanquary Fiord area is a low coastal plain thinly covered with glaciofluvial and marine deposits. Local relief is low except along terrace margins; shallow raised beaches are common along the coast. Vegetation is sparse to barren. The Lady Franklin Bay Lowlands, in which Fort Conger is located, commonly has high, local relief with steep talus slopes. Vegetation is discontinuous.

Wildlife

Wildlife in the national parks in this environmental assessment can be harvested by Aboriginal people for subsistence use. The regulation of this activity and the management of wildlife populations is the responsibility of the Nunavut Wildlife Management Board. The Board works cooperatively with hunters and trappers committees/associations, the territorial government, other federal departments and Parks Canada. The birds and mammals will be described for each park. Marine mammals will be described separately.

Smaller mammals such as lemmings, arctic fox, arctic hare and ermine are found in the park. Endangered Peary caribou (listed on Schedule 2 of *SARA*), muskoxen, and occasionally polar bears (listed as special concern on Schedule 3 of *SARA*) or arctic wolves are found in the park. Quttinirpaaq is north of the typical range for many bird species and has less regularly open sea water than other arctic areas. As a result, only 22 species are regularly observed there. Only the rock ptarmigan and occasionally the black guillemot winter in the park (Parks Canada 1994). The ivory gull, considered of "special concern" on Schedule 1 of *SARA*, is seen in Quttinirpaaq, but has not been seen nesting in the park.

Aquatic resources

Marine

The boundaries of Quttinirpaaq contain salt-water bays and other marine components. Marine mammals, anadromous fish and marine fish live in these waters. Several species of seals are found in Quttinirpaaq of which ringed seal is most common. Narwhal are considered the most common whale in the park area. Belugas are also recorded in the greater park area. Bowhead whale may be occasional visitors when severe ice conditions affect their normal migration routes.

Fresh

Fresh water resources are limited in the parks due to low precipitation and permafrost that prevent groundwater storage. Ponding and imperfect drainage are common in areas such as the Hazen Plateau in Quttinirpaaq. Rivers and streams are often fed by glacier melt or snowmelt and therefore have the largest volume in the spring and can vary dramatically in volume. Lake Hazen, found in Quttinirpaaq, is the largest lake north of the arctic circle, 537.5 km², with a maximum depth of 273 m. The ice covering the lake to depths of up to 236 cm does not all melt in the summer (not more than 50-60% clear). With a maximum temperature of 3°C, the water is very clear and unproductive. Arctic char is the only fish species found in the lake (Parks Canada 1994).

Growth rates and sexual maturity of northern fish populations are often retarded due to short growing season and low nutrient levels. However, seasonal abundance of insects and low metabolic requirements can create an older population of large fish. There is limited diversity of species although there can be large concentrations of resources in specific habitats. Important habitat types include estuaries, aufeis areas, fish holes, and deep lakes. Areas of fish congregation are often also areas of local concern for traditional use and continued success of migratory populations.

7.3 Human environment:

Cultural resources

The most vulnerable cultural resources consist of a few remnant buildings, and surficial features such as graves and caches. Cultural resources in the northern parks are sometimes challenging to recognize, for example an arrangement of rocks may look like any other rocks to an untrained observer. Known archaeological sites exist at both Tanquary Fiord and Fort Conger. Sites attributed to Independence I, Dorset and Thule cultures are found in the Tanquary Fiord area. A number of archaeological sites are found in the Discovery Harbour (Fort Conger) area. Fort Conger also has artefacts from the Greely base established there during the first International Polar Year (1881-82) and Peary's polar forays (1899-1900). The historic site at Fort Conger is designated as Zone 1, an area of special preservation.

Aboriginal land use

Under the Nunavut Land Claim Agreement, Aboriginal people are given access to Quttinirpaaq for traditional activities. Traditional activities can include travel, camping, gathering, hunting and trapping. Informal communication between Aboriginal groups and park staff is used to try to minimize the number of conflicts between visitors and traditional users. References to "visitors" within this environmental assessment do not refer to Aboriginal people.

Visitor use

In Nunavut, tourism is expected to continue to grow and eventually become the second most important economic sector in the territory. Consequently, an increase in the number of visitors to the national parks in Nunavut is also likely (Vail and Clinton 2002).

Table 1. Total number of visitors to national parks in Nunavut

Park	2003-2004	2004-2005	2005-2006	2006-2007
Sirmilik	608	608	230	106
Quttinirpaaq	262	149	117	30
Auyuittuq	458	200	482	350

8,9,10,11 Environmental effects, mitigation and residual effects

Table 2 identifies the interactions between project activities and valued ecosystem components and the potential resulting impacts. Please see the attached Table 3 for the description of mitigation and residual effects of all activities except accidents and malfunctions. Accidents and malfunctions in cruise ships could result in accidental groundings or spills of waste. Accidents and malfunctions in zodiacs could result in spills. Accidents and malfunctions in helicopters could result in crashes and spills. Each of these accidents and malfunctions has the potential to contaminate land and/or water. To minimize the potential for these accidents to occur and prepare for the possibility that they may occur, follow Canadian and International law. Notify Parks Canada if an incident occurs. The probability of an accident or malfunction is low; although if an incident did occur, the residual effects could be great. Due to the low probability of effects, the effects are not expected to be significant.

Table 2. Potential impacts of project activities on valued ecosystem components.

Activities	Valued Ecosystem Components					
	Soils and Vegetation	Wildlife	Aquatic Resources	Cultural Resources	Aboriginal land use	Visitors
Cruise ships						
Travel		Disturbance of birds	Disturbance marine mammals			
Accidents/ malfunction			Contamination			
Zodiacs						
Travel	Erosion	Disturbance	Disturbance of marine mammals			
Landing	Erosion Damage/ destruction of vegetation	Disturbance			Disruption	Diminished experience
Accidents/ malfunction			Contamination			
Helicopters						
Travel		Disturbance				
Landing	Damage/ destruction	Disturbance		Damage/ destruction	Disruption	Diminished experience
Accidents/ malfunction	Contamination					
On land						
Disposal of human waste	Contamination		Contamination			
Disposal of waste		Injury	Contamination			Diminished experience
Hiking	Trampling/	Displacement	Damage to	Damage or	Disruption	Diminished

	compaction Collection of plants Introduction of Non-native species Erosion Contamination	from habitat/ movement corridors Habituation Behaviour modification Destruction of nests	riparian areas	removal		experience
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12. CUMULATIVE EFFECTS AND SIGNIFICANCE:

Soils and vegetation

Minimal residual effects on vegetation and soil may occur, but past, present and future visitor use, Aboriginal use, research activities and park operations are the only projects in the parks that could cumulatively impact soil and vegetation. All of these activities occur at very low densities and none of the vegetation species are known to be threatened by them. With the implementation of the mitigation measures in this screening and the management plans, the adverse cumulative environmental effects on soils and vegetation are not likely to be significant.

Wildlife

In and around Quittinirpaaq the following projects may affect wildlife: aircraft landings, visitor use and researcher activities in the park, Aboriginal land use, and military activities. The military station Alert is located 44 km west of the park and some operations occur in the park. The station was established in 1956 and had over 200 personnel stationed there from 1970 to the late 1990s. Currently approximately 65 personnel are stationed at Alert. Parks Canada works cooperatively with the Department of Defence to minimize the impacts of their activities on the park, including flying at acceptable heights to protect wildlife. Although some vulnerable species populations exist in this area, there is no evidence that visitor use from the cruise ships in addition to other activities would contribute to their decline.

Therefore, cruise ship activities are not likely to threaten the continued existence of any wildlife species in any location in the parks; therefore the adverse cumulative environmental effects are not likely to be significant. Since there are no expected significant adverse cumulative environmental effects on wildlife, there will be no significant adverse cumulative environmental effects on Aboriginal hunt success.

Aquatic resources

In addition to cruise ship activities, use by other visitors, researcher activities, park management, and float-plane landings may impact water quality and the distribution of non-native aquatic species. These activities all have very minor residual effects on water quality and are infrequent. Aquatic non-native species have not been identified in the parks and are unlikely after the implementation of the mitigation. As a result, adverse cumulative environmental effects on aquatic resources are not likely to be significant.

Cultural resources

Cruise ship activities occur on very small areas of land, minimizing the potential for impacts to cultural resources. Given the implementation of mitigation measures in this screening it is not expected that the impacts of cruise ship activities will result in residual effects on the integrity or context of cultural resources or sites. Therefore, significant cumulative effects on cultural resources are not likely.

Aboriginal land use

Multiple cruise ships could cumulatively decrease Aboriginal land use experience. Aircraft landing and other visitors in the parks may also contribute to decreased Aboriginal land use experience. As described in Table 1 Quttinirpaaq has very low visitation making conflicts with visitors and decreased Aboriginal land use experience unlikely. The park is managed cooperatively with Aboriginal groups who address this issue as necessary. Furthermore, the park management plan, developed with Aboriginal groups, identifies appropriate activities, appropriate locations for activities and approaches to minimize conflicts between Aboriginal land use, aircraft and visitors. With the implementation of the mitigation measures in this screening and the management plan, the adverse cumulative environmental effects on Aboriginal land use are not likely to be significant.

Visitor experience

A cruise ships could decrease visitor's wilderness experience because of the large vessel and the large number of people. Aboriginal land use, non-commercially guided visitor use, and aircraft landings in the parks may also contribute to decreased visitor experience. Quttinirpaaq is managed cooperatively with Aboriginal groups who address conflicts between visitors and Aboriginal groups as necessary. Furthermore, the park management plan, developed with Aboriginal groups, identifies appropriate activities, appropriate locations for activities and approaches to minimize conflicts between Aboriginal land use, aircraft and visitors. As described in Table 1 the park has very low visitation making decreased visitor experience due to encounters with cruise ship groups unlikely. With the implementation of the mitigation measures in this screening and the management plan, the adverse cumulative environmental effects on visitor experience are not expected to be significant.

13. IMPACT ON ECOLOGICAL INTEGRITY:

Impacts from this project are expected to be localized and minor. These impacts are unlikely to impact any ecosystem wide functions or components. As a result, there is not expected to be an impact to ecological integrity from cruise ship operations in these parks.

14. PUBLIC CONSULTATION:

☐ Yes ☒ No

Public consultation was not considered necessary because there is little concern over these activities individually and the cumulative effects are addressed through public consultation on the management plan.

15. SURVEILLANCE:

☒ Yes ☐ No

Surveillance of cruise ships is on-going and ensures that required mitigation is implemented and restrictions or stipulations are followed. Surveillance also provides the opportunity to react to unpredicted environmental effects in a timely manner. Park staff will be present at Tanquary Fiord and will accompany cruise ship visitors to Fort Conger. Park staff routinely monitor conditions in the parks and will be able to evaluate whether cruise ship operators are implementing required mitigation. Park wardens, in cooperation with park managers, are also able to identify and enforce any site-specific or short-term mitigation to respond to unpredicted environmental effects. Cruise ship operators need to stay informed about park policies and management directions to ensure they are in compliance.

16. FOLLOW-UP:

☐ Yes ☒ No

The permitting system, yearly reports by day users, reports of bear sightings, and monitoring by Parks Canada are part of an adaptive management and cumulative effects assessment process. Parks Canada is responsible for on-going monitoring of ecological integrity indicators. Therefore, the appropriate follow-up monitoring programs are identified through the management planning and business planning processes. Examples of ongoing monitoring programs include: numbers and distribution of wildlife populations, number of interactions

between wildlife and people, area and distribution of vegetation burned, water quality. No specific follow-up of cruise ship activities is required as a result of this assessment because there are the above ongoing activities and there is no new technology, mitigation or setting involved in the cruise ship activities.

17. REFERENCES:

A National Ecological Framework for Canada (Ecological Stratification Working Group 1996)

Ellesmere Island National Park Reserve Resource Description and Analysis (1994)

Model Class Screening Report For Commercial Guiding Activities In Aulavik National Park of Canada, Auyuittuq National Park of Canada, Ivvavik National Park of Canada, Kluane National Park and Reserve of Canada, Quttinirpaaq National Park of Canada, Sirmilik National Park of Canada, Tuktut Nogait National Park of Canada, and Ukkusiksalik National Park of Canada (Parks Canada 2004)

Replacement Class Screening For Aircraft Landings In Aulavik National Park of Canada, Auyuittuq National Park of Canada, Ivvavik National Park of Canada, Kluane National Park and Reserve of Canada, Quttinirpaaq National Park of Canada, Sirmilik National Park of Canada, Tuktut Nogait National Park of Canada, and Ukkusiksalik National Park of Canada (Parks Canada 2004)

<http://laws.justice.gc.ca/en/index.htm> (for legislation references in appendix 4)

Marine Mammal Regulations

Migratory Birds Convention Act

National Parks Act

TABLE 3

SECTION D: MITIGATING MEASURE(S) AND RESIDUAL EFFECT(S)				
Description of project activities	Environmental components affected by project	Description of adverse environmental effects	Mitigating measures	Description of residual effects and significance
Cruise ship	Wildlife	Disturbance to birds as a result of proximity	Follow the Environment Canada "Guidelines for Visiting Seabird Colonies in the Canadian Arctic" and Wildlife section of letter from Environment Canada (attached) dated July 20, 2007.	Some minimal disturbance and expenditure of energy by the birds will remain with the implementation of the mitigation measures. However, residual effects are expected to be minimal and therefore effects are not expected to be significant.
	Aquatic resources	Disturbance of marine mammals	See Appendix 1 for general mitigations to minimize disturbance to marine mammals and site specific restrictions. See letter from Fisheries and Oceans Canada (attached) dated July 20, 2007 and section on spill contingency plan in Environment Canada's July 20 2007 letter.. See Appendix 4-6 on legislation affecting Northern Shipping.	Some minimal disturbance and expenditure of energy by the marine mammals will remain with the implementation of the mitigation measures. However, residual effects are expected to be minimal and therefore effects are not expected to be significant.
Zodiac	Soils and vegetation	Erosion Damage and destruction of vegetation	Avoid producing a wake that disturbs the shoreline and can cause erosion. Approach inshore areas at slow speeds to minimize disturbances to banks, shorelines and shallow water habitat.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.
	Wildlife	Disturbance to birds as a result of proximity	Follow the Environment Canada "Guidelines for Visiting Seabird Colonies in the Canadian Arctic" and Wildlife section of letter from Environment Canada (attached) dated July 20, 2007.	Some minimal disturbance and expenditure of energy by the birds will remain with the implementation of the mitigation measures. However, residual effects are expected to be minimal and therefore effects are not expected to be significant.
	Aquatic resources	Disturbance of marine mammals	See Appendix 1 for general mitigations to minimize disturbance to marine mammals. See letter from Fisheries and Oceans Canada (attached) dated July 20, 2007.	Some minimal disturbance and expenditure of energy by the marine mammals will remain with the implementation of the mitigation measures. However, residual effects are expected to be minimal and therefore effects are not expected to be significant.

				significant.	
	Aboriginal land use	Disruption	Inform clients about the right of Aboriginal people to participate in harvest for subsistence and the cooperative arrangements in place to ensure this harvest is sustainable. No interference with traditional activities is permitted.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	
	Visitors	Diminished experience	Cruise ship clients should remain with their group. Follow the guidance provided by on site park staff regarding interaction with other visitors.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	
Helicopters	Wildlife	Disturbance	See appendix 2 for mitigation.	Some minimal disturbance and expenditure of energy by the wildlife will remain with the implementation of the mitigation measures. However, residual effects are expected to be minimal and therefore effects are not expected to be significant.	
	Aquatic resources	Contamination	See appendix 2 for mitigation.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	
	Soils and vegetation Cultural resources	Damage, compaction, destruction Contamination	See appendix 2 for mitigation.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	
	Aboriginal land use	Disruption	If at all possible avoid flight paths over traditional users	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	
	Visitors	Diminished visitor experience	Do not circle or hover in area where other visitors are present, unless requirement for landing or take-off.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.	

On land activities	Soils and vegetation	Vegetation trampling/compaction Collection of plants Introduction of non-native species Erosion Contamination	Clean boots, especially soles, prior to leaving ship. See appendix 3 for mitigation	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.
	Aquatic resources	Damage to riparian areas Contamination	See appendix 3 for mitigation	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.
	Cultural resources	Damage of cultural resources Removal of cultural resources	Access to Fort Conger is conditional upon accompaniment by park staff. See appendix 3 for mitigation.	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.
	Aboriginal land use	Disturbance of Aboriginal land use	Visit parks in recommended locations that are least likely to interfere with Aboriginal land use. See appendix 3 for mitigation	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.
	Visitors	Diminished visitor wilderness experience	Visit parks in recommended locations that are least likely to interfere with other visitor experiences. See appendix 3 for additional mitigation	Negligible residual effects should occur after implementation of the mitigation measures and therefore effects are not expected to be significant.

SECTION E: DECISION

PROJECT TITLE: Quark Expeditions – Cruise ship visit to Quttinirpaaq National Park (Tanquary Fiord and Arctic Adventure tours)

CEAR No.: 07-01-30251

or Internal Index No.:

ENVIRONMENTAL ASSESSMENT DECISION CODES

Under section 20 of the *Canadian Environmental Assessment Act*, the responsible authority may make one of the following decisions in respect of a project after taking into consideration the screening report.

Code	Paragraph of section 20 of the <i>Canadian Environmental Assessment Act</i>
01	a) Taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects. The responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.
02	b) Taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is likely to cause significant adverse environmental effects that cannot be justified in the circumstances. The responsible authority shall not exercise any power or perform any duty or function conferred on it by or under any Act of Parliament that would permit the project to be carried out in whole or in part.
03	c) Refer the project to the minister for a referral to a mediator or a review panel where: <ul style="list-style-type: none">➤ it is uncertain whether the project, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, is likely to cause significant adverse environmental effects;➤ the project, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, is likely to cause significant adverse environmental effects and paragraph (b) does not apply; or➤ public concerns warrant a reference to a mediator or a review panel.

Report written by:

Katherine Cumming (Template)
Jane Chisholm (Amendment)

EA Specialist, WCSC
Ecosystem Scientist II, Nunavut Field Unit




2007-01-11
2007-07-30

Name

Title



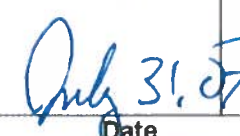
Date

Decision recommended by:

			01
Signature	Name and Title	Date	Code

DECISIONS OF RESPONSIBLE AUTHORITIES

Department: Parks Canada Agency

			01
Signature	Name and Title of authorized manager	Date	Code

Appendix 1 – Mitigation to protect marine mammals and marine ecosystems

Seals and walrus mitigation

- Vessel behaviour should be based on the most sensitive or easily disturbed species on site (which may not be the species that is sought for viewing)
- Approach at an indirect angle that provides the maximum visibility for the animals or birds
- Move closer gradually
- Monitor behaviour on approach. Watch for signs of agitation and increase your angle *away* from the animals if they become visibly agitated.
- Slow down to 5 knots (*no wake speed*) at 400 m
- Do not approach head on
- Avoid loud noises
- Avoid rapid movements
- Avoid sneaking up to animals
- Use radio communication with others on-scene to assess the situation
- Avoid circling islands or traveling close to shore at close distances
- Use binoculars, instead of your vessel, to bring animals into closer view
- Birthing areas are “*no go zones*”: remain at least 250 m offshore
- Avoid approaching pinnipeds on cliff areas or areas with steep drops where animals may injure themselves if they flee the area
- Do not approach closer than 100 m “*no go zone*”
- Be aware that this 100 m “*no go zone*” is a minimum distance: a greater distance may be required earlier in the season and/or year round at certain sites
- If stopping to view pinnipeds, avoid rapid movements: stop and depart slowly and keep a steady speed when viewing.
- Do not go ashore
- Up to 3 vessels “*under 5 tons*” or 1 vessel “*over 5 tons*” may be inside the “*close viewing zone*” (100-250 m) at one time
- If an animal approaches the vessel, it is appropriate to observe it at whatever distance the animal chooses
- Depart slowly from the “*no wake zone*” (400 m) and then increase speed gradually
- Limit observation time to less than 30 minutes with any one group

Whales mitigation

- Approach whales from the side; do not approach whales head on or from rear
- Establish layout and movement of other vessels before approaching whales
- Move closer gradually
- Slow down to 7-8 knots 800 m away
- Reduce speed to “*no wake speed*” at 400 m away
- Approach traveling whales from the side with speed and direction consistent with the behaviour of the whales
- If whales appear to be avoiding the vessel, increase distance between the vessel and whale
- Do not chase whales
- Vessels should be positioned only on one side of the whales; whales should not be circled
- Positioning vessels ahead of whales and waiting for the whales to pass is not to be used
- Avoid crossing ahead of traveling whales

- If crossing ahead of whales is unavoidable, there should be 800 m clearance
- Do not approach closer than 100 m “no go zone”
- Up to 3 vessels “under 5 tons” or 1 vessel “over 5 tons” may be inside the “close viewing zone” at one time
- Do not get between a mother and calf
- To avoid startling whales, paddlers should make some sort of regular, repetitive, low volume noise (like tapping floor of vessel) when inside the “close viewing zone”
- Avoid sudden alteration of vessel speed
- Avoid sudden alteration of vessel direction
- Avoid sudden alteration of vessel angle
- If a whale approaches the vessel, stop until it moves away at least 50-100 m
- Response and needs may be different for transient and resident killer whales. There is a greater potential to impact transients with noise: keep noise low
- Depart slowly until beyond “no wake zone” (400 m) and then increase speed gradually
- Limit observation time to less than 30 minutes with any one group

Appendix 2 – Mitigation measures for aircraft

Flight and operation of aircraft in all parks

Operators shall:

- Minimize use of fuel and emissions by reducing the time the aircraft runs on the ground, minimizing the number of flights, and minimizing the amount of time circling before landing.
- Ensure certification of noise compliance, if applicable, is current.
- Never circle, chase, hover over, dive bomb, pursue or in any other way harass wildlife. Aircraft landing permits are not to be used for wildlife viewing or photography. Do not alter the flight path to approach wildlife, avoid flying directly over animals. For passengers requesting photographic opportunities, pilots should explain that disturbance of wildlife could result in loss of business licence or charges under the CNPA.
- Avoid congregations of animals.
- Maintain a normal flying altitude of 2000 feet when in the air space over the park except for approach to land, take-off or for safety reasons.
- Maintain an altitude of 3500 ft above bird sanctuaries and areas with bird concentrations (colonies or moulting areas).

Approach and landing in all parks

Operators shall:

- Do not land in Zone 1 areas.
- Manage speed, approach distance, rate of descent to minimize noise to wildlife, visitors and Aboriginal people using the land.
- If wildlife are on the landing area, do not land until they are well away from the airstrip.
- Use tundra tires if required by landing permit.
- Do not refuel in any park.

Quttinirpaaq National Park of Canada

Aircraft access permits will be issued for the Tanquary Fiord Warden Station by the Superintendent.

Appendix 3 – Mitigations for land activities in national parks

General mitigation for all national parks

In addition to the measures outlined below, cruise ship operators are expected to comply with any local park regulations, policies, guidelines, travel restrictions, area closures, or other directives issued by Parks Canada for the purpose of mitigating environmental effects or ensuring public safety. Cruise ship operators are expected to follow other laws and regulations as applicable (i.e. boat safety).

Guides are expected to act as stewards, set proper examples and educate guests on the importance of keeping areas pristine. Guides are expected to monitor client actions and ensure that minimal impact practices are implemented.

Vegetation and Soil

- As part of a pre-trip briefing, operators and guides shall ensure that all clients are aware of national park regulations on picking or removing vegetation. Clients should be briefed on travel practices described in the mitigation including potential impacts to vegetation and soils prior to departure. Cleaning footwear of soil prior to entering different regions is recommended. Clients should be warned not to eat any edible plants or berries.
- Operators and guides should make use of any existing designated trails and established facilities.
- Guides should choose routes or locations that follow or utilise the most durable surfaces whenever possible. Rock, talus, gravel, sand, and gravel stream bottoms are considered to be the most durable surfaces. Snow is also a durable preferred travel surface provided that groups are equipped for comfort and safety.
- Guides should choose routes or locations that minimise impacts to vegetation and soils. Areas of naturally sparse vegetation are preferred routes as trampling can be easily avoided. When you must walk on vegetation use the following guidelines to choose the most resistant and resilient vegetation type. Choose dry vegetation and soils that are more durable than wet vegetation or soils. Avoid vegetated and soft soil areas, particularly grass-sedge meadows, which are critical feeding habitat for wildlife and are easily damaged by foot traffic. In steep terrain travel on rock outcrops or snow. Avoid soil-covered surfaces. When descending loose scree, move slowly and cautiously minimizing the movement of scree and the erosion. In general guides should avoid concentrating use in sensitive areas such as wet alpine meadows, steep slopes and riparian areas or other areas close to water.
- Guides should use discretion in the management of group travel and select the appropriate technique depending on the circumstances. If an informal trail or route is visible, ensure the whole group follows this trail. Also, in circumstances where travel is on durable surfaces it may be preferable to concentrate the group in one area or along one route. When traveling through areas of undisturbed vegetation (no informal trail or route is visible) groups should spread out laterally to avoid repeated trampling and the creation of informal paths.
- Select rest stops on durable surfaces.
- Ensure that clients have proper footwear for the trail and trail conditions.
- Do not make markers, cairns or inukshuks.
- Guides and operators are asked to report adverse trail and facility conditions, vandalism, and user group conflicts to Parks Canada.
- Fires are not permitted.

- Portable stoves, hibachis, or barbeques should be set up on durable, heat resistant surfaces and away from vegetation or litter wherever possible.

Wildlife

- As part of a pretrip briefing, operators and guides shall ensure that all clients are aware of wildlife sensitivities and potential hazards, understand wildlife viewing and safety practices and are aware of national parks regulations on feeding, enticing or disturbing wildlife. Clients must also be aware that the removal of bones or caribou antlers is prohibited in national parks.
- More specific guidance for dealing with polar bears in Nunavut, view the “Safety in Polar Bear Country” brochure.
- Guides shall manage groups during wildlife viewing opportunities such that the animal’s normal behaviour is not disturbed by not approaching wildlife, keeping lines of escape open for the animal and clients, and keeping groups close together. Use binoculars in situations where it is desirable to enhance viewing opportunities.
- Guides shall maintain a distance of at least 30 metres from large wildlife species.
- Keep the animal’s line of travel or escape route clear. If it approaches you, move away. Foxes and wolves can carry rabies. Do not allow them to approach you. Be especially suspicious if wildlife appears “friendly” or “tame”.
- Retreat immediately if you notice signs of aggression or any behaviour change. Avoid direct eye contact. Animals feel threatened by this. Muskoxen have been known to charge and gore people when they felt threatened. Keep your distance.
- Guides shall maintain a distance of at least 300 metres from known wildlife den sites, calving areas and nest sites. Minimise close contact with nesting birds or young animals.
- Watch for bird nests and chicks so as not to step on them; many arctic birds are ground nesters. Section 6(a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy nests or eggs of migratory birds.
- Guides shall leave the area immediately in the event that dens, nests or young animals are accidentally encountered.
- Guides and operators are asked to report wildlife sightings, unusual wildlife behaviour, encounters with wildlife, injured animals and carcasses to Parks Canada. Marked animals (radio collars, ear tags, leg bands on birds, neck bands on swans) and injured animals should also be reported.
- Operators and guides shall implement alternate trip or route plans as required to avoid close encounters with wildlife.

Operators and guides shall ensure that food and food smells are managed to avoid enticing wildlife:

- All garbage and food waste must be taken back to the cruise ship
- Minimize food smells, particularly from leftovers, by triple bagging them, placing in air tight containers or eating them.
- No washing of dishes or utensils in the park.

Aquatic Resources

Operators and guides should be aware that riparian areas are often susceptible to damage through trampling due to wet soil conditions. Aquatic wildlife, groundwater and surface water resources and riparian areas are among the most sensitive ecosystem features that may be impacted by outdoor recreation activities. Environmental management and mitigation is focused on preventing direct damage to sensitive aquatic wildlife and riparian vegetation and preventing chemical contamination of water resources.

- Passengers should bring their own drinking water to the park.
- Guides should avoid deviating from established trails and rest stops adjacent to streams and lakes unless durable surfaces or dry surfaces are used. Rest stops should be on high dry ground away from the waters edge.

Human waste

Operators should use the following mitigation to avoid visual and aesthetic impacts as well as to protect water sources from contamination. As appropriate, encourage passengers to follow these mitigation measures as well.

- Encourage clients to use washrooms prior to leaving the cruise ship.
- Urine in healthy people is sterile. Urinate 50 meters away from aircraft landing sites, travel routes, camping areas and water bodies.
- Pack it out or bury it under rocks away from trails, campsites and any fresh water source. At the very last resort feces can be deposited under rocks 50 meters from camp sites, travel routes and water bodies. Avoid disturbing plant communities.
- If near a body of *salt water* (i.e. one of the coastal areas of the park) it is acceptable to deposit your feces in a shallow pit below the high water mark.
- Minimize the use of toilet paper. Burn it as completely as possible or pack it out. Tampons should be packed out, in a zip-lock bag, with other garbage.
- Those visitors who use “Depends”, tampons or other sanitary products must also plan for their disposal. Please bring along enough plastic ziplock bags to pack these items out- the same as you pack out all your food garbage. A little powdered bleach in the baggies can reduce the smell. Sanitary items cannot be dealt with in the same manner as toilet paper and should not be left behind at the outhouses with feces or toilet paper.

Snow

- Guides shall ensure that groups move well off main trail or landing area for bathroom breaks. Latrine areas should be located in sites not likely to be traveled through by others, well away from water bodies and buried deeply when leaving.

Cultural Resources

- Educate clients about the value of cultural resources when at a cultural site.
- Guides are responsible to ensure that clients do not remove any items from cultural sites or vandalize the sites.
- Guides are responsible to ensure that clients do not deface or write on rocks, outcrops, or park infrastructure.
- Limit foot traffic to hardened trails in the area if cultural sites are exposed as a result of trail braiding or the development of informal trails.
- Report the discovery of an artifact or cultural site to Parks Canada – do not remove or otherwise disturb the site.
- Do not remove or disturb any rocks from any features that look – even remotely – like an archaeological site. These sites include cairns, tent rings, fox traps and food caches and are almost indiscernible to the untrained eye.

Aboriginal Land Use

- Guides will inform clients about the right of Aboriginal people to participate in harvest for subsistence and the cooperative arrangements in place to ensure this harvest is sustainable.
- No interference with traditional activities is permitted.
- Visitors will not approach aboriginal camps unless invited by the members.

Visitor Experience

Large commercially guided groups may have a negative effect on the perception of the environment and the visitor experience of other park users.

- Operators shall comply with group size restrictions as per business licence stipulations, zoning and area management restrictions.
- Guided groups do not have precedence over other groups. Guides shall act in a courteous manner towards other user groups.
- Guided groups should travel as a group within calling distance from the front to the back of the group. Guided groups should attempt to keep noise to a minimum.
- Guides should pick up garbage and take reasonable measures to restore impacted sites that are encountered during the course of an excursion.
- When requested, or when a perceived need arises, guides are expected to pass environmental management or interpretive information on to non-guided groups and to offer emergency or other assistance to non-guided groups when needed.
- Do not build cairns, other markers, or leave messages in the dirt.
- Guides are to ensure that data collection sites and equipment are not disturbed.

Quttinirpaaq Cultural Sites

- Guides should be familiar with, and avoid areas of cultural significance identified below. Guides should be aware that there is local community concern over visitation of gravesites. Guides should respect these concerns and practice voluntary avoidance of gravesites.
- Guides should leave in place and report locations of found artifacts.
- Guides are encouraged to include cultural interpretation of Park resources and are advised to work with PC to locate cultural sites which are less sensitive to disturbance for this purpose. PC will provide background information and assist with developing interpretive materials.

Fort Conger 16X

The site, on the northeast shore of Discovery Harbour first served as a wintering site for the Nares Expedition (1875) and Peary used the site several times eventually dismantling Greely's habitation to build the three huts that survive today (1899, 1900-1902). A burial is southeast of the main site, consisting of an oval outline of bricks measuring 2.5m north-south x 1.15m east-west, partly embedded in the ground. There is no record of expedition members being buried at Fort Conger and the burial may pre-date European arrival and was subsequently outlined by expedition members. Numerous other site features and artifacts are present including depressions, pits, 13 tent outlines, brick concentration, barrels, stove parts, portable forge parts and tin cans.

Kettle Lake

50X3

The site is located on a sparsely vegetated gravel terrace(s) at the south end of Kettle Lake in the small valley created by May Creek. The site consists of six caches, three cairns, two fox traps, one tent ring, a platform and two unidentified stone features. The site has been assigned a possible Thule affiliation (A.D. 1100-1700).

50X4

The site is located at the base of a small hill (mesa-like remnant of a river terrace) south of Kettle Lake. Two stone features (fox traps or meat caches), a bone scatter and soapstone fragments are present. The site has been surface collected and is an easy walk from Tanquary Camp.

Kettle Lake 50X7

Six localities situated on moraine deposits and river terraces around Kettle Lake, were documented in 1965. Twenty-three "ruins" in 6 groups were identified and mid-passage dwellings with central hearths plus a square building with stone walls (common kitchen?) were recorded. At least six tent rings appear to have been excavated. In 2000, 20 features were recorded including 15 house/ring features of various diameters. Radiocarbon dates place the site within the Independence 1 Culture (4000 – 3700 B.P.).

Kettle Lake Outlet 50X8

The site is on a large, flat, unvegetated terrace about 2 km from Tanquary and north of Kettle Lake, just north of a high ridge with a visible marker cairn on it. The primary site feature is a large divided stone house with several internal components. A considerable amount of bone is present on the surface. The site may be related to the Independence 1 Culture, 4000 - 3700 B.P.

Quttinirpaaq Zone 1 Areas

The following are Zone 1 areas that require special mitigation.

Fort Conger

All persons – including Inuit – traveling by motorized means to or from this area must be accompanied by a Parks Canada staff member. Education about polar bear safety for all visitors to/users of the site is required.

Kettle Lake and Muskox Wall Archaeological Sites

This is representative of high arctic archaeology. Self-guided interpretive walk will be developed that will provide park visitors and users with guidelines on appropriate behaviours at the site, as well as interpretive details about the features in the area.

Appendix 4 – Legislation Affecting Northern Shipping

(Note: Appendix 4 is a guide to the legislation affecting northern shipping, but is not to be considered comprehensive)

Regulatory and policy protection

Note: The *Canada Shipping Act* and *Arctic Waters Pollution Prevention Act* apply in national park waters so all of the provisions identified below under it would apply in national parks as well. If there are differences between the above acts and the *Canada National Parks Act*, then it becomes more complicated, but likely the CNPA would be paramount/applicable act because it is more specific. I have not found any contradictions so far, but if for example a superintendent's order was issued to restrict ships in an area at a certain time, that would be different that the CSA. The superintendent's order will stand.

1. Emptying Ballast Water

Regulations

Canada Shipping Act *Ballast Water Control and Management Regulations*

- Includes a requirement to exchange ballast water 200 miles from shore in depths of at least 2000 m before entering Canada's waters.
- If a ship can't comply with above because impractical or would compromise the stability of the ship, they can discharge: in respect of a voyage to a port, offshore terminal or anchorage area in the Higher Arctic, an area in Lancaster Sound east of 80° west longitude where the water depth is at least 300 m. Also for trips to Hudson Bay, Hudson Strait east of 70° west longitude where the water depth is at least 300 m can be used.
- If that is not possible, best management practices such as treatment is required.
- Every ship captured under this regulation is required to have a ballast water management plan.
- note from RIAS: "The Regulations identify zones in each part of the country where ships may exchange their ballast. A preliminary scan conducted in support of the strategic environmental assessment (SEA) suggests that further consideration be given to the selection of areas where exchange is permitted. Thus, for the selection of these zones, TC sought scientific advice from DFO. In order to provide this advice, DFO used scientific criteria to select zones where the environmental impact caused by ships releasing their ballast would be minimized. The zones were critically reviewed through DFO's peer review process. TC has implemented the advice provided by DFO in order to fulfill its requirement under the SEA process."
- Cruise ships are covered by the regulation, but are a minor concern for this issue due to the limited amount of ballast water on board and often not requiring discharge in Canadian waters.

2. Spills

Prevention

Convention for the Prevention of Pollution from Ships (MARPOL Convention)

- is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
- is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years. (source: cited from European Environment Agency website, definition from the International Marine Organization).
- According to the IMO website, Status of Conventions page, Canada is signatory to Annexes I, II, and III (30/06/2006), See Appendix 5 for: Annex I (oil) and Annex II (noxious liquid substances in bulk)
- An International Oil Pollution Prevention Certificate is given by Transport Canada to indicate compliance with MARPOL.

Arctic Waters Pollution Prevention Act

- 4(1) powerful prohibition -- "no person or ship shall deposit or permit the deposit of waste of any type in the arctic waters or in any place on the mainland or islands of the Canadian arctic under any conditions where the waste or any other waste that results from the deposit of the waste may enter the arctic waters."
- prescribes shipping safety control zones where ships must meet certain minimum safety standards defined in the Act.

Arctic Pollution Prevention Regulations (AWPPA)

- Construction standards
- Navigation control
- Absolute liability
- Require owners/operators to obtain arctic pollution prevention certificates and to have ice navigators to guide them through certain areas before taking their ship through certain Arctic waters. Also must notify Coast Guard of intended route and timing.
- Prescribe times and zones (*Shipping Safety Control Zones Order*) whereby ships carrying [varying amounts of] oil may navigate Arctic waters.

Arctic waters oil transfer guidelines

- Transport Canada non-statutory guidelines in force since 1991.
- Seek to prevent cargo/fuel oil spillage and the resulting environmental damage during transfer of same between any two vessels or between a vessel and shore terminal/storage depot, in either direction.
- Outlines notifications, preparations, procedures, communications, training etc. that should be observed for safe transfer of oil cargo or fuel under all reasonable circumstances (speaks to sound, well-rehearsed practices, adequate numbers of trained and alert personnel, sufficient materials, and well maintained, thoroughly tested equipment). Also outlines what procedure to follow in the event of a spill.

Oil Pollution Prevention Regulations (CSA)

- applies to all ships operating in all Canadian waters.
- deal with protection of the Canadian marine environment from damage caused by pollution originating from operational and accidental discharges of oil and oil mixtures from ships and from loading and unloading facilities for ships.
- concerns procedures and practices during transfer operations (i.e. loading or unloading of oil or an oily mixture from a ship to a facility or another ship), supervisory roles during operations, standards for construction, inspection, authorized discharges, emergency plans.
- *Boat and fire drill regulations* – requires fire drills
- *Dangerous goods shipping regulations, Transportation of Dangerous Goods Act*

Spill response

- Ships must have spill response plan
- Ships do drills of spill response
- Ships must have materials to deal with spill for first 24-48 hours
- Ships must have insurance to cover liability
- Coast guard covers response with large deposits of materials in Tuktoyaktuk, Hay River, Iqaluit and Churchill. First Response Units are currently located at Rankin Inlet, Coral Harbour, Cape Dorset, Clyde River, Arctic Bay, Gjoa Haven, Cambridge Bay, Kugluktuk and Resolute.

- Agreements exist between territories and internationally (US, Denmark) to indicate responsibilities in the case of spill. An updated NWT/Nunavut agreement will be signed this fall.
- EC chairs the Arctic Regional Environmental Emergencies Team REET.
- CNPA has provisions for cleaning up pollution in s. 32.

3. Daily water/sewage/garbage/air release

- Section 5.1 (1) of the *Migratory Birds Convention Act* (MBCA), prohibits deposits and requires reporting of substances harmful to migratory birds at sea
- Section 36.3 of the *Fisheries Act* (FA) prohibits deposits of deleterious substances into Fisheries Waters
- *Canada Shipping Act Air Pollution Regulations* – density of smoke allowed
- *Species at Risk Act* – if a species is designated under SARA prohibitions, prohibitions on damaging or destroying a residence and/or destroying critical habitat may be relevant.
- *Canada National Parks Act*
 - Provides opportunity to develop regulations to protect air quality, but they do not exist right now. Likely, we would not require higher air quality standards in one fiord because that would likely require different technology. More likely we would ask Transport Canada to enforce the existing regulations and if necessary limit the amount of time a cruise ship could spend in a fiord where air quality may be an issue. Superintendent orders could be used to control the amount of time a cruise ship spent in a fiord for protection of ecological integrity and public health.
 - *National Parks Garbage Regulations* s. 8 “No person shall discard or dispose of or deposit garbage anywhere in a park except in such places and at such times and under such conditions as the superintendent may authorize.” The definition of garbage includes a wide variety of things including sewage.

Arctic Waters Pollution Prevention Act

- 4(1) powerful prohibition -- “no person or ship shall deposit or permit the deposit of waste of any type in the arctic waters or in any place on the mainland or islands of the Canadian arctic under any conditions where the waste or any other waste that results from the deposit of the waste may enter the arctic waters.”
- Therefore this is stricter than the MARPOL Convention requirements. Essentially 0ppm is the restriction under the AWPPA, but under MARPOL in restricted areas it is 15ppm or 100ppm elsewhere.
- ‘waste’ definition is all-encompassing, “any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water to an extent that is detrimental to their use by man or by any animal, fish or plant that is useful to man..” (+ other elements)

Arctic Shipping Pollution Prevention Regulations

- 28. Any ship and any person on a ship may deposit in the arctic waters such sewage as may be generated on board that ship.
- Only untreated sewage is given this exemption because the chemical treatment is considered worse than the sewage. Chemicals are harmful and can't be handled by normal sewage treatment plants, so probably there is nowhere in the arctic for sewage to be disposed of on land if they kept it in holding tanks.

Convention for the Prevention of Pollution from Ships (MARPOL Convention)

Annex IV (sewage from ships)

- In force since 27 September 2003

Sewage		
From treatment plants	Comminuted and disinfected	Untreated
- treatment plant has been approved by the Administration - no visible floating solids or discoloration of surrounding water	-treatment plant has been approved by Administration - at least 4 nm from the nearest land	-retained in holding tanks -at least 12 nm from the nearest land -discharge rate approved by the Administration -ship is proceeding en route -minimum speed 4 knots

Convention for the Prevention of Pollution from Ships (MARPOL Convention)
Annex V (garbage from ships)

Within special areas ⁵			Outside special areas		
Plastics	Other garbage	Food wastes	Plastics	Dunnage, lining and packing material which will float	Food wastes and other garbage
Prohibited	Prohibited	At least 12 nm from the nearest land	Prohibited	At least 25 nm from the nearest land	At least 12 nm from the nearest land But: 3 nm if passed through a comminuter or grinder

⁵ Special areas: North Sea, Baltic Sea, Mediterranean Sea, Black Sea, Red Sea, Gulfs area, Antarctica, Caribbean

4. Incidental/intentional wildlife disturbance during travel

Regulations

- Site specific restrictions under the *Canada Shipping Act* have to go to the International Maritime Organization (IMO) to have them approved and put on world navigation charts.
- Site specific regulations see Appendix 6
- *Species at Risk Act*
 32 (1). No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.
 33. No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.
 58. (1) Subject to this section, no person shall destroy any part of the critical habitat of any listed endangered species or of any listed threatened species — or of any listed extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada — if
 (a) the critical habitat is on federal land, in the exclusive economic zone of Canada or on the continental shelf of Canada;
 (b) the listed species is an aquatic species; or
 (c) the listed species is a species of migratory birds protected by the *Migratory Birds Convention Act*, 1994.
- *Canada National Parks Act*
 - Provides authority to close or put restrictions on areas.

5. Anchoring Regulations

- **Canada Shipping Act/International Marine Organization**
Cautions for anchorages are shown on charts such as pipes and electrical lines.
- **Canada National Parks Act National Parks General Regulations**
24(1) The superintendent may erect lettered or symbolic signs or devices designating a wharf or other location in a Park as requiring a mooring permit.

(2) No person shall moor a watercraft at a wharf or other location designated pursuant to subsection (1) without a mooring permit issued by the superintendent or obtained in a manner described in subsection 5(7). 5(7) was revoked in 1994.

6. Ice breaking Regulations

- Ice breaking is only regulated by the fact that the strength of ship that can go in an area under certain ice conditions is regulated by the *Arctic Waters Pollution Prevention Act* and *Arctic Pollution Prevention Regulations*. Currently, the only ice breakers are the Canadian Coast Guard, but there is nothing to prevent a company from buying an ice breaker of the appropriate build and breaking ice.

7. Other Regulations

Dredging

- Dredging requires Navigable Waters Protection approval if the dredging process affects navigation.
- Dredging proposals undergo review under the *Fisheries Act* to assess impacts to fish habitat.
- Dredging activities in marine waters and disposal of a substance at sea is subject to permitting under the *Disposal at Sea, Part 7, Division 3, of CEPA, 1999*.
- Canadian Environmental Protection Act

Division 3 concerns the disposal of a substance (*but not 'waste'*) at sea from a ship or aircraft or platform...or the disposal of dredged material into the sea. The substance could be the ship, aircraft or platform itself. A permit to dispose can be obtained.

- (1) No person or ship shall dispose of a substance in (a) the territorial sea of Canada; (b) the internal waters of Canada, excluding all the rivers, lakes and other fresh waters in Canada and the St. Lawrence River(c) any exclusive economic zone that may be created by Canada; (d) the arctic waters within the meaning of section 2 of the *Arctic Waters Pollution Prevention Act*; (e) an area of the sea adjacent to the areas referred to in paragraphs (a) to (d) that is specified under paragraph 135(1)(g); unless (a) the substance is waste or other matter; and (b) the disposal is done in accordance with a Canadian permit. (issued by the Minister of the Environment)
- “disposal” means (a) the disposal of a substance at sea from a ship, an aircraft, a platform or another structure, (b) the disposal of dredged material into the sea from any source not mentioned in paragraph (a), (c) the storage on the seabed, in the subsoil of the seabed or on the ice in any area of the sea of a substance that comes from a ship, an aircraft, a platform or another structure, (d) the deposit of a substance on the ice in an area of the sea, (e) the disposal at sea of a ship or aircraft, (f) the disposal or abandonment at sea of a platform or another structure, and (g) any other act or omission that constitutes a disposal under regulations made under paragraph 135(3)(c),

but does not include

- (h) a disposal of a substance that is incidental to or derived from the normal operations of a ship, an aircraft, a platform or another structure or of any equipment on a ship, an aircraft, a platform or another structure, other than the disposal of substances from a ship, an aircraft, a platform or another structure operated for the purpose of disposing of such substances at sea, (i) the placement of a substance for a purpose other than its mere disposal if the placement is not contrary to the purposes of this Division and the aims of the Convention or the Protocol, (j) the abandonment of any matter, such as a cable, pipeline or research device, placed on the seabed or in the subsoil of the seabed for a purpose other than its mere disposal, or (k) a discharge or storage directly arising from, or directly related to, the exploration for, exploitation of and associated off-shore processing of seabed mineral resources.

1) *Disposal at Sea Regulations* (pursuant to *CEPA 1999*)

- details the reports required when a substance is disposed of at sea in the event of an emergency from a ship or an airplane.
- establishes lower levels of concentration for certain metals, organic compounds, and 'persistent plastics' that do not require a report.

Seismic

Canada Oil and Gas Operations Act (COGOA)

4. No person shall carry on any work or activity related to the exploration for or the production of oil or gas in any area to which this Act applies unless

- (a) that person is the holder of an operating licence issued under paragraph 5(1)(a);
- (b) that person is the holder of an authorization issued, before the commencement of operations, under paragraph 5(1)(b) for each such work or activity; and
- (c) where it is required, that person is authorized or entitled to carry on business in the place where that person proposes to carry on the work or activity.

5(1)(b) may authorize in writing each work or activity proposed to be carried on, subject to such approvals, requirements and deposits as he determines or as may be prescribed by the regulations, including

- (i) requirements relating to liability for loss, damage, costs or expenses,
- (ii) requirements for the carrying out of environmental programs or studies, and
- (iii) requirements for the payment of expenses incurred by the National Energy Board in approving the design, construction and costs of production facilities and production platforms as those terms are defined in the regulations.

EA required under CEAA (*Inclusion List Regs*) if:

79. Seismic surveying in Canada not otherwise provided for under this schedule that is either of the following:

- (b) marine or freshwater seismic surveying, if during the survey the air pressure measured at a distance of one metre from the source would be greater than 275.79 kPa (40 pounds per square inch).

Appendix 5

Annex I (oil)

TABLE I
OIL TANKERS OF ALL SIZES
Control of discharge of oil from tank areas including cargo pump room

Within special areas³, within 50 nautical miles (nm) from the nearest land any discharges are prohibited, except clean or segregated ballast.

Outside special areas, more than 50 nautical miles from the nearest land, any discharge is prohibited, except clean or segregated ballast, or when:

1. the tanker is proceeding en route, and
2. the instantaneous rate of discharge of oil does not exceed 30 litres/nm, and
3. the total quantity of oil discharged into the sea does not exceed
 - 1/15,000 (for existing tankers) and/
 - 1/30,000 (for new tankers)of the total quantity of the cargo which was carried on the previous voyage, and
4. the tanker has in operation a monitoring and control system for the discharge of oil, and slop tank arrangements as required by Regulation 15.

³ Special areas: North Sea and Baltic Sea

TABLE II
OIL TANKERS OF ALL SIZES
OTHER SHIPS OF 400 GRT AND ABOVE
Control of discharge of oil from machinery spaces

Within special areas³ any discharge is prohibited, except when

1. the ship is proceeding en route, and
2. the oil content of the effluent without dilution does not exceed 15 ppm, and
3. the ship has in operation oil filtering equipment with automatic 15 ppm stopping device, and
4. bilge water is not mixed with oil cargo residue or cargo pump room bilges (on oil tankers)

Outside special areas any discharge is prohibited, except when

1. the ship is proceeding en route
2. the oil content of the effluent is less than 15 ppm, and
3. the ship has in operation an oil discharge monitoring and control systems, oily-water separating or filtering equipment of other installation required by Regulation 16, and
4. bilge water is not mixed with oil cargo residue or cargo pump room bilges (on oil tankers)

Note: Oily mixtures which are not mixed with oil cargo residue or cargo pump room bilges, and where the oil content of the effluent without dilution does not exceed 15 ppm may be discharged outside special areas without any additional restrictions.

TABLE III

SHIPS BELOW 400 GRT OTHER THAN OIL TANKERS

Control of discharge of oil from machinery spaces

Within special areas³ any discharge is prohibited, except when the oil content without dilution does not exceed 15 ppm.

Outside special areas any discharge is prohibited, except when the Flag State considers that all the following conditions are satisfied as far as practicable and reasonable:

1. the ship is proceeding en route, and
2. the oil content of the effluent is less than 15 ppm, and
3. the ship has in operation suitable equipment as required by Regulation 16

Note: Oily mixtures where the oil content of the effluent without dilution does not exceed 15 ppm may be discharged without any additional restrictions.

Annex II (noxious liquid substances in bulk)

1. General

Division of noxious substances into 4 categories:

Category	Hazard to marine resources or human health	Harm to amenities or other legitimate uses of the sea
A	Major hazard	Serious harm
B	Hazard	Harm
C	Minor hazard	Minor harm
D	Recognizable hazard	Minimal harm

Group	In all areas	
A, B, and C	<ul style="list-style-type: none">- ship is proceeding en route- minimum speed 7 knots (self-propelled) or 4 knots (not self propelled)- at least 12 nm from the nearest land- discharge below the waterline- minimum water depth 25 metres	
and	outside special areas	within special areas ⁴
A	Maximum conc. of tank washings 0.1% by weight	Maximum concentration of tank washings 0.05% by weight
B	<ul style="list-style-type: none">- per tank max. 1 cubic metre or 1/3000 of the tank capacity in cubic metres- concentration of the substance in the wake astern of the ship max. 1 ppm	<ul style="list-style-type: none">- tank has been precleaned, and the washings have been discharged to a reception facility- concentration of the substance in the wake astern of the ship max. 1 ppm

C	<ul style="list-style-type: none"> - per tank max. 3 cubic metres or 1/1000 of the tank capacity in cubic metres - concentration of the substance in the wake astern of the ship max. 10 ppm 	<ul style="list-style-type: none"> -per tank max. 1 cubic metre of 1/3000 of the tank capacity in cubic metres - concentration of the substance in the wake astern of the ship max. 1 ppm
D		<p style="text-align: center;">in all areas</p> <ul style="list-style-type: none"> - ship is proceeding en route - minimum speed 7 or 4 knots - at least 12 nm from the nearest land - max. 1 part of the substance in 10 parts water

⁴ Special Areas: Baltic Sea, Black Sea, Antarctica

Appendix 6 – Site Specific Regulations

Oceans Act

- pursuant to s. 35 (3) and 52(1) of the *Oceans Act*, the Minister of Fisheries and Oceans may set aside marine protected areas.
- A marine protected area is an area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada and has been designated under this section for special protection for one or more of the following reasons:
 - (a) the conservation and protection of commercial and non-commercial fishery resources, including marine mammals, and their habitats;
 - (b) the conservation and protection of endangered or threatened marine species, and their habitats;
 - (c) the conservation and protection of unique habitats;
 - (d) the conservation and protection of marine areas of high biodiversity or biological productivity; and
 - (e) the conservation and protection of any other marine resource or habitat as is necessary to fulfil the mandate of the Minister.
- regulations are made specific to each MPA, e.g. Gully Marine Protected Area Regulations (created in 2004), Gilbert Head MPA Regulations (" 2005) , Basin Head MPA Regulations (" 2005) wherein: the area is legally described; zones are set up (reminiscent of terrestrial zoning in NP's); contents of management plans for the area are detailed; management of activities such as research and fishing are prescribed/regulated.
- each regulation contains a powerful protective prohibition....no person shall
 - a) disturb, damage or destroy in the Gully Marine Protected Area, or remove from it, any living marine organism or any part of its habitat;
 - (b) disturb, damage or destroy in the Gully Marine Protected Area, or remove from it, any part of the seabed, including the subsoil to a depth of 15 m of the seabed; or
 - (c) carry out any activity — including depositing, discharging or dumping any substance, or causing any substance to be deposited, discharged or dumped — in the Gully Marine Protected Area, in the vicinity of that Area or in any area adjacent to it, that is likely to result in the disturbance, damage, destruction or removal of anything referred to in paragraph (a) or (b).

The *Canada National Marine Conservation Areas Act* allows the Governor in Council to set aside MCA consisting of submerged lands and waters within the internal waters or territorial sea of Canada and any coastal lands or islands within Canada. None have been scheduled as yet, although it would appear one on Lake Superior is 'close'. The Act came into force in June 2002.



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July 20, 2007

Our file Notre référence
NU-07-0045

Jane Chisholm
Parks Canada
Nunavut Field Unit Parks Canada
Box 278
Iqaluit, NU X0A 0H0

Dear Ms Chisholm:

Subject: Response to RA to subsection 12(3) CEAA request for project review for expert or specialist information/knowledge.

As requested, we have reviewed the project description for cruise ships operating in and around marine mammals, provided by you pursuant to subsection 12(3) of the *Canadian Environmental Assessment Act*. Our review of this project was limited to its impacts on fish and fish habitat.

Although the *Marine Mammal Regulations* prohibit the disturbance of marine mammals, there are no specifically legislated definitions of the term. Section 11 prohibits, unless specifically licensed by DFO, i) moving a live marine mammal from the immediate vicinity in which it is found, and ii) tagging or marking (or attempting to do so) a live marine mammal in any manner. Generally, disturbance is interpreted as any behaviour that affects an animal's normal life processes, e.g. to pursue, accompany, overtake, encircle, approach repeatedly, hunt, disperse, drive or herd individuals or groups of marine mammals.

Based on the information provided, we will not likely require an environmental assessment under section 5 of the *Canadian Environmental Assessment Act*. However, since the near shore activities anticipated in connection to Arctic marine transits are likely most consistent with opportunistic 'whale-watching', we recommend the following measures:

- Aircraft should maintain a minimum altitude of 500m over marine mammals.

When whale watching is not the purpose of the boating activity, boaters should:

- Manoeuvre around marine mammals at a slow pace or steer a parallel course, at a reduced speed and at a distance if the marine mammals do not move away;
- Not accelerate within 400 metres from marine mammals;
- Maintain course at reduced speed if marine mammals move away; and,
- Maintain look out for marine mammals.

When whale watching is the purpose of boating activity, boaters should:

- Not move at high speed towards, encircle or repeatedly approach marine mammals;
- Not approach marine mammals from the front or rear, but approach only from the side;
- Approach and depart slowly, gradually accelerating when more than 400 m away;

- Be passive: do not approach closer than 100 m, shift engine into neutral, let animals control the approach;
- Not disturb groups of resting marine mammals;
- Maintain low speeds and constant direction when travelling parallel to marine mammals, avoid crowding them near shore or coming between them and the shore; and,
- Limit observation time to less than 30 minutes with any one group of marine mammals. If more than one boat is involved, coordinate activities to minimize time spent with any one group of animals

Please note that this advice is provided to satisfy the requirements of subsection 12(3) of the *Canadian Environmental Assessment Act* and should not be taken to imply DFO's approval of the project, or any part thereof, in accordance with the *Fisheries Act* or any other federal legislation.

Should you have any questions or comments, please contact me directly by phone at (867) 979-8007, by fax at (867) 979-8039, or by e-mail at Liua@dfo-mpo.gc.ca.

Yours sincerely,



Amy Liu
Fish Habitat Biologist
Fisheries and Oceans Canada – Eastern Arctic Area



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July 20, 2007

RE: Quark Expeditions - Parks Canada Business License Permit

On behalf of Environment Canada, I have reviewed the information submitted with the above-mentioned application.

In order to effectively assess Quark Expedition tourism activities proposed tour details of the arctic region need to be included. The Initial Environmental Evaluation submitted has no relevance to Canadian law or Canadian Arctic waters, communities or National parks. The company should clearly describe their proposed tour plan and operating season including all sensitive areas that will be visited. In addition, sensitive species and species at risk should be identified in the Environmental Evaluation along with appropriate mitigation measures.

Spill Contingency Plan

Does Quark expedition have an Emergency Response Plan in place that addresses spills in Arctic waters? EC is concerned about the potential for oil to be released from the streamer. Even small spills of oil can have very serious effects on migratory birds and under the Migratory Birds Regulations, "no person shall deposit or permit to be deposited oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds." Environment Canada recommends that the proponent consider what steps would be taken to protect wildlife in the event of a spill. The plan should include specific measures to keep wildlife out of any area contaminated by a spill, equipment available to do this, and when such procedures should be used. Having this information outlined not only benefits wildlife, but also gives clear direction to the field crew on what to do in a spill situation if wildlife is nearby.

- Spills shall be documented and reported to the 24 hour Spill Line at (867) 920-8130.
- All releases of harmful substances, regardless of quantity, are immediately reportable where the release:
 - is near or into a water body;
 - is near or into a designated sensitive environment or sensitive wildlife habitat;
 - poses an imminent threat to human health or safety; or
 - Poses an imminent threat to a listed species at risk or its critical habitat.

Wildlife

- There are numerous seabird colonies in the Eastern Canadian Arctic. Information on important marine bird areas is available in the Canadian Wildlife Service Occasional Paper "Key Marine Habitat Sites for Migratory Birds in Nunavut and the Northwest Territories". (Available at <http://www.cws-scf.ec.gc.ca/publications/abstractTemplate.cfm?lang=e&id=1063>). Cruise ships should ensure that their activities do not negatively impact the birds nesting at these colonies. Cruise ships should follow attached guidelines if they plan on viewing the seabird colonies.
- A Migratory Bird Sanctuary permit issued by the Canadian Wildlife Service of Environment Canada is required for access into a Migratory Bird Sanctuary. Contact the Canadian Wildlife Service office in Iqaluit for further information on Migratory Bird Sanctuary permits.
- Helicopters can cause severe disturbance at seabird colonies and should not be used near nesting cliffs;
- Cruise ships should anchor well away from the breeding cliffs and the cliffs should be approached by zodiac only;

- Zodiac landings are discouraged;
- Zodiac visitation of bird cliffs should be limited to the morning and early afternoon (Murre chicks fledge in August, primarily in the late afternoon and evening. Disturbance during peak fledging can cause premature fledging and consequently, high chick mortality.);
- Noise should be kept to a minimum during visits to the colony. Do not blow ship horns or discharge firearms in an attempt to cause a mass flight of adults from the colony. This causes heavy losses of eggs and chicks.

The Canadian Wildlife Service is interested in wildlife sightings made by nature-oriented tour groups. If you keep a record of bird sightings and where the sightings were made, we would appreciate receiving a copy of your list.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at cindy.parker@ec.gc.ca.

Yours truly,

Original signed by

Cindy Parker
Environmental Assessment Specialist

cc: (Carey Ogilvie, Head- EA North, Environment Canada, Yellowknife, NWT)
(Myra Robertson, Environmental Assessment Coordinator, CWS, Yellowknife, NWT)

