DE BEERS

CANADA

GAHCHO KUÉ PROJECT

Wildlife Monitoring Plan

October

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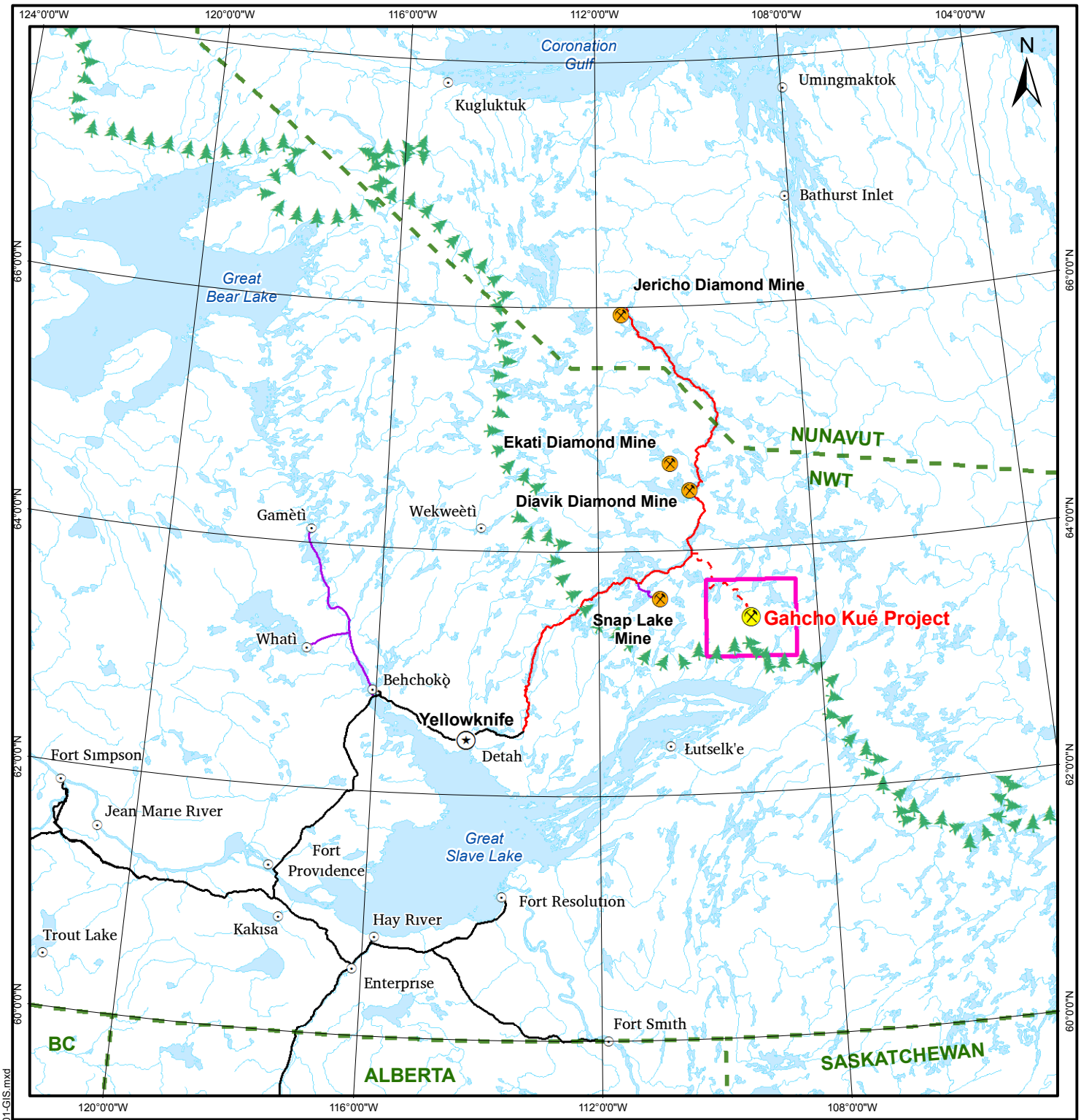
1 INTRODUCTION

1.1 BACKGROUND

The Gahcho Kué Project (Project) as proposed by De Beers Canada Inc. (De Beers) consists of an open pit mine located at Kennady Lake. The Project is located approximately 80 kilometres (km) southeast of the Snap Lake Mine, approximately 140 km northeast of the nearest community, Łutselk'e, and 280 km northeast of Yellowknife (Figure 1-1). Kennady Lake is approximately 870 hectares (ha) and located in the headwaters of the Lockhart River system, which flows into Great Slave Lake, approximately 340 km downstream.

At the Technical Sessions in May 2012, De Beers circulated the Environmental Monitoring and Management Framework (EMMF; De Beers 2012a), which outlined the functional application of environmental monitoring within a collaborative adaptive management approach for the Project. One of the programs that will provide input into the EMMF is the Wildlife Monitoring Plan (WMP). This document represents a working version of the WMP, which is intended to provide the detail on the Project-specific wildlife monitoring components and contributions to regional monitoring programs. The WMP has been developed with input from community representatives and government (De Beers 2012b), and will be finalized with applicable data sheets following the Gahcho Kué Panel's Environmental Impact Review (EIR) decision. The WMP will remain a living document that is adjusted as needed by De Beers based on input from the Adaptive Management Committee. The WMP is guided by the following principles:

- to provide a set of achievable goals and measurable objectives based on input from communities, government, and other people interested in the Project;
- to use the results from monitoring for adaptive management actions (e.g., additional mitigation practices, modify objectives or study designs, or special studies to better understand effects) when required (WLWB 2010);
- to incorporate local and Traditional Knowledge (TK) throughout the life of the Project; and
- to design studies and data collection protocols that are consistent and standardized with other programs in the region so that data can be used by government to assess and manage cumulative effects.



LEGEND

- Gahcho Kué Project
- Existing Mine
- Territorial Capital
- Populated Place
- Highway
- Existing Winter Road
- Tibbitt-to-Contwoyto Winter Road
- Winter Access Road
- Watercourse
- Waterbody
- Territorial/Provincial Boundary
- Treeline
- Project Regional Study Area

NOTES

Base data source: The Atlas of Canada

GAHCHO KUÉ PROJECT

Location of the Gahcho Kué Project

PROJECTION: Canadian Lambert Conf. Conic	DATUM: NAD83	
Scale: 1:5,000,000 (100 50 0 100 Kilometres)		
FILE No: B2011-Wild-001-GIS		DATE: December 12, 2011
JOB NO: 11-1365-0001	REVISION NO: 1	
OFFICE: GOLD-CAL	DRAWN: DC / CHECK: JV	

De Beers Canada

Figure 1-1

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The principles are linked to the adaptive management framework for monitoring caribou and other wildlife, such as carnivores and birds. As discussed by the Wek'èezhii Land and Water Board (WLWB 2010), some management actions may not be identified initially, but likely determined in response to the outcome of monitoring programs. Therefore, adaptive management can be considered as the process of 'learning by doing'. At the May 22 to 24, 2012 Technical Sessions held by the Panel staff, De Beers committed to the early development of a WMP for the Project in collaboration with government and communities. This document demonstrates De Beers' follow through on that commitment to date. The Adaptive Management Committee will ensure the government and aboriginal groups are directly involved with the evolution of the WMP over time.

1.2 PUBLIC ENGAGEMENT AND INCORPORATION OF TRADITIONAL KNOWLEDGE

At the Technical Sessions in May 2012, De Beers committed to support TK monitoring for the Project and implement a collaborative approach with communities and regulators in developing the WMP. The Panel's technical advisor on wildlife suggested that De Beers could coordinate a WMP working group to help develop the WMP in collaboration with community representatives and regulators. The Tłı̨chǫ Government further suggested that De Beers could hold a WMP workshop to obtain input from a broader audience. De Beers committed to both initiatives, which were carried out prior to the submission of this WMP and informed its content. The WMP working group meetings were held on August 7, 2012 and September 5, 2012 with a workshop on September 18, 2012. Working Group and workshop meeting materials are provided in Appendix A.

In addition to the working group meetings and workshop, De Beers has also carried out community visits in February 2012, site workshops for each Aboriginal group in August and September 2012, and De Beers is planning to travel back to the communities in the fall of 2012 to continue the Project planning discussions. An updated Record of Engagement will be provided to the Panel in November 2012. These engagement activities are part of an on going dialogue and De Beers will carry out annual community engagement, which includes coordinating the Adaptive Management Committee so that each Aboriginal group and government department can work directly with De Beers and provide input on the evolution of management and monitoring as defined by the guiding principles.

As outlined above, De Beers has provided numerous and meaningful opportunities for the communities to share TK and community-based views.

Those opportunities are in addition to the ones provided through the EIR and regulatory processes. De Beers has also provided details on how such opportunities will continue in the future. While De Beers is responsible for providing opportunities for communities to share TK and learn about the Project, the communities are equally responsible for actively participating in those opportunities and teaching De Beers how best to apply their knowledge. As discussed in the WMP workshop, successful wildlife monitoring requires a team effort between science and TK. Demonstrating this approach, the following are community recommendations for including TK in the WMP as suggested to De Beers during the 2012 engagement activities, which are being considered for the Project:

- employ Aboriginal Environmental Monitors for site duties, carry out monitoring programs with scientists, and monitor the use of the Project Winter Access Road in conjunction with Project protective services;
- employ a senior level TK Position at De Beers;
- provide a cabin at Kirk Lake for community monitoring use and TK cultural events;
- if caribou are present near the Project Winter Access Road while the winter road is active, then initiate a survey by community-based monitors;
- coordinate site visits at key times of the year;
- facilitate better communication to the communities;
- develop public education materials and signage on conservation and hunting from the Project Winter Access Road; and
- include a new objective in the WMP: To facilitate the sharing of TK and science, and to include local knowledge in environmental monitoring.

While the above initiatives for incorporating TK represent important positive steps, a goal of the WMP and adaptive management will be to facilitate on-going sharing of traditional and local knowledge and science in environmental monitoring and improve communication with communities and regulators. This approach will ensure that De Beers is able to meet its commitment to support TK for the life of the Project.

1.3 REGULATORY FRAMEWORK

De Beers is committed to monitoring wildlife in relation to the Project, and the details are described in this document. The development of the WMP details at this early stage of the planning and regulatory process clearly demonstrates De

Beers' commitment to build on lessons learned and carry out monitoring using best practices. De Beers fully understands the weight of commitments made on the public record that are incorporated into the decision of the Panel and Ministerial approval of the Project. De Beers is also aware that the Panel has the authority to require a follow-up program for the Project, which includes wildlife monitoring. The Panel also has the ability to assign measures not only to De Beers, but to government and aboriginal groups having authority and expertise in particular areas.

De Beers has been clear in its view that the NWT regulatory regime is holistic in its ability to assess project effects and regulate development (see Information Request Response to YKDFN 2.2 [De Beers 2012e]). With respect to wildlife in particular, the Government of the Northwest Territories (GNWT), Aboriginal Affairs and Northern Development Canada (AANDC), Environment Canada (EC), and the Mackenzie Valley Land and Water Board (MVLWB) all have regulatory responsibilities relating to wildlife. De Beers' commitment to work collaboratively with these regulators and communities on the implementation of the WMP, and the significance of the Panel's and Minister's approval assure with certainty that wildlife monitoring will be undertaken.

1.4 MONITORING FOCUS

For the WMP, the number of valued components (VCs) is focused on monitoring those species of primary concern to communities and government. Valued components represent ecological, social, cultural, and economic properties of the ecosystem that important to society. Species at risk that were observed near the Project (Appendix B) were also considered in the selection of VCs, and the WMP follows the species at risk guidelines developed by the Mackenzie Valley Environmental Impact Review Board (MVEIRB 2010).

Currently, the following VCs are the focus of the WMP, and will be included in the monitoring of Project-related effects:

- caribou (Section 5.1);
- grizzly bear (Section 5.2); and
- wolverine (Section 5.3).

Incidental observations of other species in the RSA, such as muskox, moose and wolf, will also be recorded.

De Beers will also collect data for regional and national wildlife monitoring programs that includes other VCs with the purpose of informing and supporting wildlife management and conservation or research. These species include:

- raptors (Section 5.4); and
- upland breeding birds (Section 5.5).

The focus of the monitoring effort will remain flexible and adaptive for the life of the Project to respond to emerging questions or concerns identified through the adaptive management process.

1.5 APPROACH TO WILDLIFE MONITORING

The process of developing a WMP for the Project is collaborative and requires input from communities, government, and other people interested in the Project (Figure 1-2). The approach suggested by the WMP working group is based on three questions, which are related to the goals of the monitoring program.

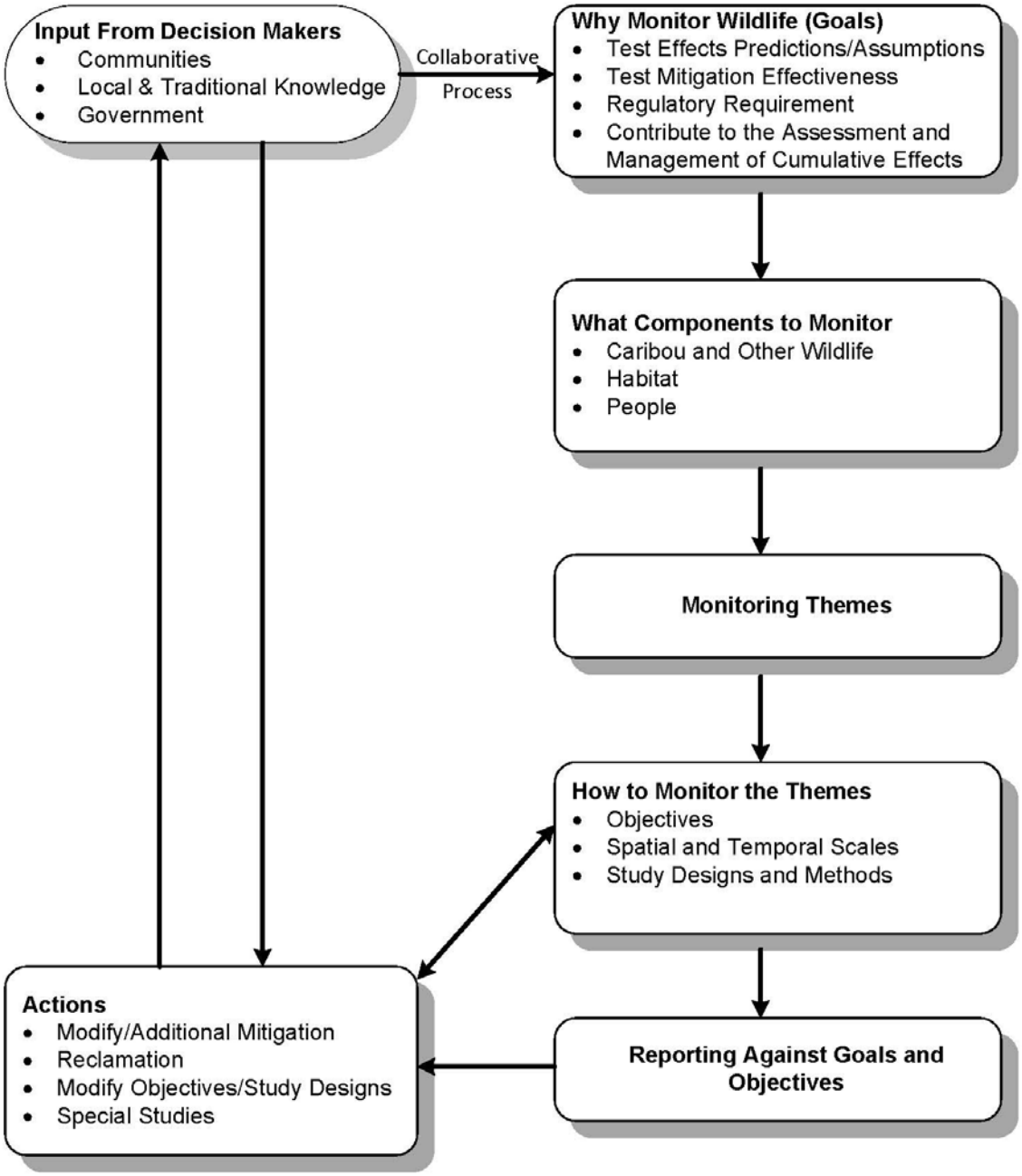
1) Why do we monitor?
2) What components should we monitor?
3) How do we monitor the selected components?

The overall reason why we should monitor wildlife is for follow-up on the concerns that communities, government and other regulators (i.e., MVLWB) have with respect to how the Project will influence the ecosystem.

More specifically, the first goal (question) is related to the different types of monitoring that are typically completed at a project such as:

- testing effects predictions, which can be related to measuring the response of the environment or population (i.e., monitoring component) to project stressors, and/or testing the assumptions associated with the predictions;
- testing the effectiveness of environmental design features and mitigation policies, practices, and procedures; and
- meeting and fulfilling regulatory requirements.

Figure 1-2 Conceptual Adaptive Management Response Framework for Monitoring Wildlife



The information collected through the different types of monitoring is used to provide recommendations regarding study designs and sampling methods (e.g., frequency and duration of sampling), and possible changes to components of the WMP (another element of adaptive management). The results from monitoring can be used to increase the confidence of impact predictions in future environmental assessments. Another type of monitoring is contributing to the assessment and management of cumulative effects by government. For example, the WMP will provide regional data on caribou, grizzly bear, wolverine, upland breeding birds and raptors that can be used to better understand the potential cumulative effects on these species and the tundra ecosystem. The WMP for the Project will use appropriate and standardized study designs and methods so that the data from the Project and existing diamond mines can be used to measure cumulative effects on wildlife.

The second goal is to determine what components of the environment and population should be monitored. For example, monitoring components for caribou are based on the effects pathways evaluated in the Environmental Impact Statement (EIS) (Section 5.1), which originate from the areas of public concern identified by communities and parties during the Environmental Impact Review Scoping Sessions (MVEIRB 2006). Monitoring components also consider the issues and direction given in the EIS Terms of Reference (Gahcho Kué Panel 2007).

The selection of monitoring components also considers the results of the environmental assessment, which includes the direct loss and alteration of aquatic and terrestrial habitats, and changes to habitat quality due to sensory disturbance factors (e.g., dust and noise). These changes in habitat can influence the local abundance and distribution of wildlife. In general, monitoring component studies included in the WMP are designed under one of two broad categories.

1) Site surveillance or local monitoring, which provides direct feedback into the adaptive management of mine operations. Examples include monitoring wildlife observations and interactions with the Project, and direct habitat loss and alteration. Supplemental targeted (special) studies may be developed as needed through the Adaptive Management Committee.

2) Regional monitoring, which contributes to collaborative regional or national monitoring initiatives is generally focused at the population level. Some examples of regional programs include zone of influence (ZOI) monitoring for caribou, the collaborative regional grizzly bear monitoring program and the North American Peregrine Falcon Survey.

Monitoring components broadly include caribou and other wildlife (grizzly bear, wolverine, raptors, and upland birds), habitat and people (Figure 1-2). To clarify the people aspect, people would be included as a component related to the effects pathway of increased access for harvesting caribou along the Project Winter Access Road. For each of the three broad components there could be one or more monitoring themes. After determining the monitoring themes that will be completed for each component and the type of monitoring (e.g., testing predictions or verifying mitigation), a set of clear and measurable objectives need to be defined. The objectives will inform the appropriate spatial and temporal scales of the monitoring, and the study designs and sampling methods (Figure 1-2).

The objectives must be achievable and linked to the different types of monitoring studies. The ability to achieve objectives is often related to the limitations in associated measurement endpoints or variables, which should have the following attributes:

- good knowledge of the variable to provide confidence in interpreting the results;
- accessibility and repeatability of collecting robust monitoring data (i.e., practical and cost-effective measurement endpoints);
- high signal to noise ratio (can separate mine-related changes in the variable relative to natural factors);
- provide reliable information for adaptive management of mine operations; and
- provide reliable data for collaborative regional studies that are designed for understanding and managing cumulative effects.

Results from local and regional monitoring programs are used to provide feedback to Project operations to determine if the goals and objectives are being met (Figure 1-2). Depending on the results of site surveillance monitoring, actions may be considered such as modifying and/or implementing additional mitigation. Similarly, changes to the objectives and/or study methods for local and regional monitoring programs may be required if it is determined that the measurement variable has a low sensitivity to detect Project-related changes or that the scale of the response does not match the objective. The results are shared with the Adaptive Management Committee (Figure 1-2), communities, government, and other people interested in the Project through annual monitoring and comprehensive analyses reports, and meetings.

In accordance with the concept of adaptive management, it is important to point out that the current proposed monitoring components, themes, objectives and studies may change over the life of the Project. Based on a principle of the WMP, the number of monitoring objectives should be focused to be manageable, and related to the predicted level or risk of effects (magnitude, duration, and spatial extent of effects). The initial selection of monitoring components, themes, objectives and studies for caribou and other wildlife considered the following information:

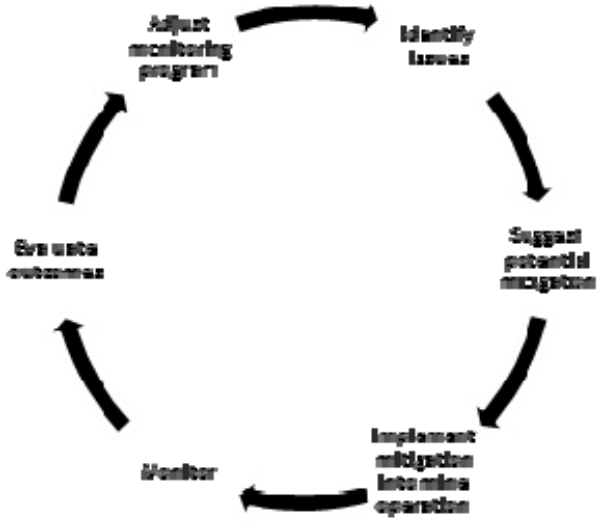
- the Terms of Reference and community scoping sessions;
- analysis and assessment of effects pathways for the Project, and associated degree of uncertainty (De Beers 2010);
- level of confidence in proposed mitigation and environmental design features for the Project (De Beers 2010);
- wildlife monitoring and management programs for the Snap Lake and Jericho mines (De Beers 2004; Tahera 2005; De Beers 2007);
- results of long-term monitoring from the Ekati, Diavik, and Snap Lake mines (De Beers 2008; BHPB 2010; DDMI 2010);
- reports of the diamond mine monitoring workshops (Marshall 2009; Handley 2010);
- standardized protocols for the NWT Cumulative Impact Monitoring Program (IMG-Golder Corp. 2008); and
- data Collection Protocols for the NWT Cumulative Impact Monitoring Program (Kavik-AXYS Inc. 2008).
- Gahcho Kué Project WMP working group meetings and workshop (Appendix A).

2 MITIGATION

This WMP outlines how De Beers proposes to monitor wildlife that use the landscape surrounding the Project. In the EIS, no significant effects were predicted on the abundance and distribution of wildlife from the addition of the Project to the existing landscape. Environmental design features and mitigation are intended to limit the magnitude, duration, and geographic extent of effects from the Project on wildlife.

Mitigation refers to policies and procedures implemented to control, reduce, eliminate or avoid adverse environmental impacts (WLWB 2010). Mitigation may be the form of actions (such as deterring wildlife from hazardous areas), prevention (such as continually monitoring and managing food waste), or environmental design features that are incorporated into the Project (such as skirting buildings). Mitigation is an essential component of the adaptive management cycle (Figure 2-1). In the context of wildlife monitoring, the goals of mitigation include keeping people safe, keeping wildlife safe, and limiting Project-related effects to wildlife and the environment.

Figure 2-1 Diagram of the Adaptive Management Cycle (adapted from WLWB 2010)



Policies and procedures to mitigate effects to wildlife are described in the Wildlife Effects Mitigation and Management Plan (Appendix C). The proposed mitigation followed a review of best practices from other similar operating mines in the region, including Snap Lake, Ekati and Diavik (De Beers 2007; BHPB 2010; DDMI 2010). Many of the policies and procedures are of general applicability to all wildlife such as:

- limiting the area of the mine footprint;
- progressively reclaim disturbed areas where practical;
- reduce noise, dust and odours from the mine;
- containment of hazardous chemicals; and
- deterrent actions to reduce harm to wildlife at the site.

Mitigation is also proposed that is specific to caribou. It is anticipated that caribou will interact with the Project. In other words, some caribou may be present within close proximity to the mine during the summer and fall seasons. The following policies, practices, and procedures are specifically related to caribou protection.

- Dewatering pipelines will have areas designed for caribou crossing as recommended by TK.
- Use of deflections to guide caribou away from the airstrip towards the north end of Area 8 of Kennady Lake as recommended by TK.
- All incidents involving interactions, deterrents, or injury of caribou will be documented and evaluated.
- All sightings of caribou will be reported to environmental staff on-site.
- Drivers will be notified when caribou are present at site.
- If caribou are crossing Project roads, traffic will stop and wait for them to cross (i.e., caribou have the right-of-way).
- Caribou will only be herded away from roads or the airstrip in specific circumstances, such as when there are incoming flights, safety concerns or emergencies.
- Blasting will stop if caribou are within the exclusion area for workers around the blast site.

Actions may be required to move caribou away from areas where they may be at risk. The appropriate level of action for a situation is one that removes the risk with the least disturbance to the caribou. The decision to use deterrent actions for caribou should consider the number of animals, and the potential risk to the safety of humans and caribou.

3 SPATIAL AND TEMPORAL SCALES

Spatial and temporal scales are highly correlated because processes that operate on large spatial scales typically occur at slower rates and have longer time lags (Wiens 1989; Chapin et al. 2004; Folke et al. 2004). Examples of large spatial scale processes that occur at slow rates include changes in the quality and quantity of lichens on caribou seasonal ranges, and the northern and southern extents of the boreal forest. Alternately, processes that occur at faster rates such as plant transpiration rates and animal foraging behaviour typically occur within more localized areas. Thus, caribou and other wildlife populations, and associated life history traits exhibit multiple patterns across a number of spatial (daily, seasonal and annual ranges) and temporal (daily, seasonal, annual and decadal cycles) scales.

The EIS used a range of applicable spatial and temporal scales to assess the effects from the Project (and other developments) on caribou, carnivores, and birds (De Beers 2010). Effects are related to the changes in both the magnitude of the stressor from the Project and the response by wildlife, which can be related to a particular phase of the Project (construction, operation, and decommissioning) and the current phase of the population cycle (increasing, decreasing, and stable).

For example, the effect from direct loss of habitat from the Project on caribou and other wildlife is likely strongest during construction and is mostly limited to the physical footprint, which influences individuals. Alternately, the spatial scale of indirect changes to habitat extends further into the local area around the physical footprint (i.e., zone of influence [ZOI]) and can affect several groups of individuals causing a change in local distribution. However, the magnitude of the effect from sensory disturbance on wildlife likely depends on the level of activity associated with different Project phases, the number of animals that encounter the ZOI, and the phase of the population cycle.

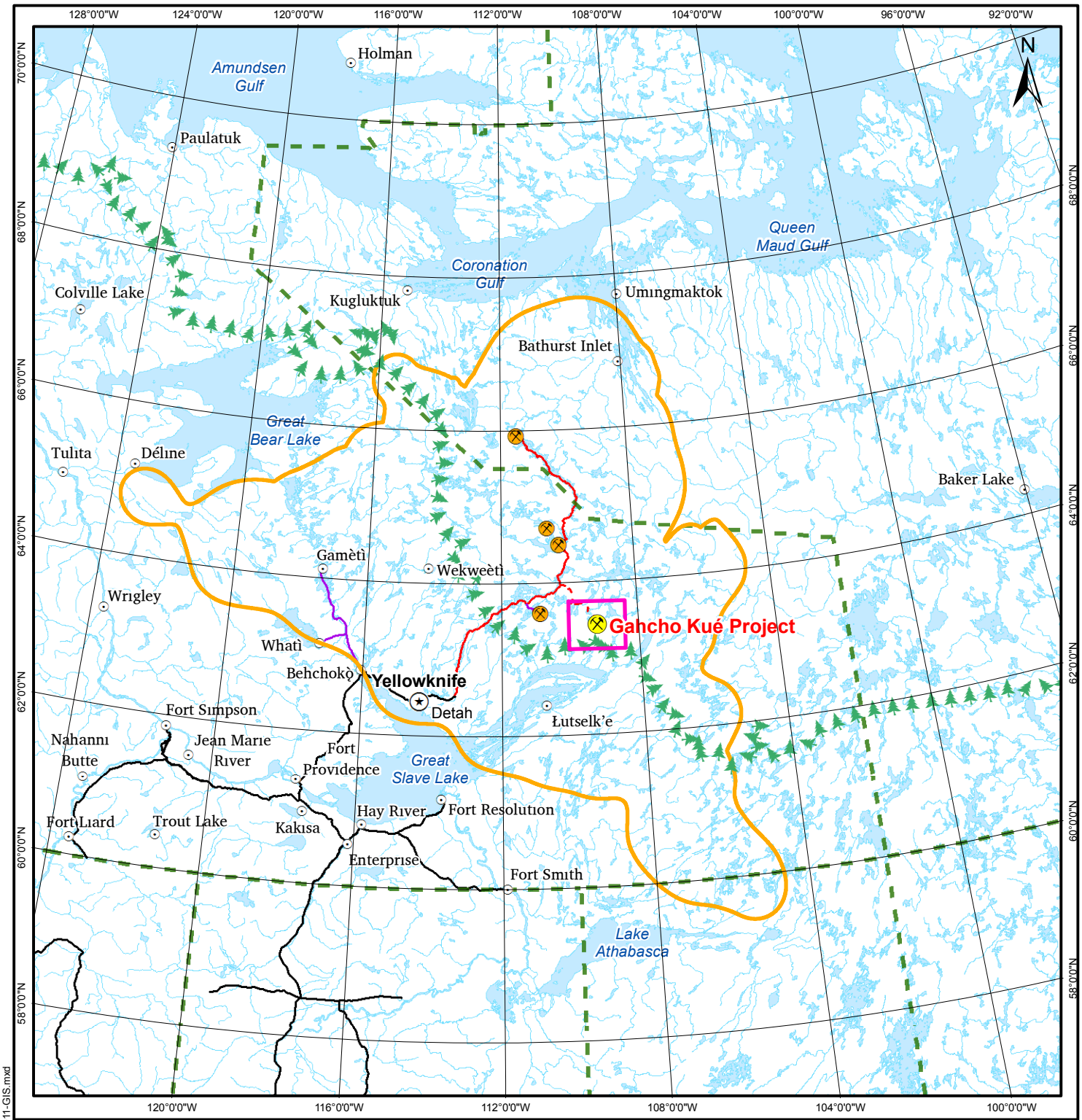
Because several of the wildlife VCs have large seasonal and annual ranges, providing data that can be used to analyze and manage cumulative effects should also be considered (collaboratively with government and other land users) in the design of monitoring studies. Subsequently, studies are proposed within the following spatial boundaries:

- the annual range of the Bathurst Caribou Herd (Figure 3-1);
- the regional study area (RSA) for the Project, including the winter access road (Figure 3-2); and

- the local study area (LSA) for the Project (Figure 3-2).

In the EIS, the annual range of the Bathurst herd also included the effects study areas (i.e., estimated population boundary) for grizzly bear and wolverine, and the wildlife LSA and RSA. The wildlife LSA (about 200 square kilometres [km^2]) was selected to assess the immediate direct and indirect effects of the Project on individual animals and habitat. The wildlife RSA (approximately 5,600 km^2 [75 km by 75 km]) was used to assess Project-specific and cumulative effects on upland breeding birds and raptor populations. The RSA was also selected to capture the maximum extent of effects beyond the LSA, which can influence groups of individuals from populations with large seasonal and annual ranges (e.g., caribou, grizzly bear, and wolverine).

Temporal scales for monitoring consider the four phases of the Project, which include construction (two years), 11 years of operation, closure (two years), and post-closure.



LEGEND

- Gahcho Kué Project
- Existing Mine
- Territorial Capital
- Populated Place
- Highway
- Existing Winter Road
- Tibbitt-to-Contwoyto Winter Road
- Winter Access Road
- Watercourse
- Waterbody
- Territorial/Provincial Boundary
- Treeline
- Annual Range of the Bathurst Caribou Herd
- Project Regional Study Area

NOTES

Base data source: The Atlas of Canada
Bathurst caribou range derived from collar data provided by GNWT

GAHCHO KUÉ PROJECT

Annual Range of the Bathurst Caribou Herd

PROJECTION:	DATUM:
Canadian Lambert Conf. Conic	NAD83

Scale: 1:8,000,000

90 45 0 90

Kilometres

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FILE No:	DATE:
B2011-Wild-011-GIS	September 24, 2012

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Figure 3-1

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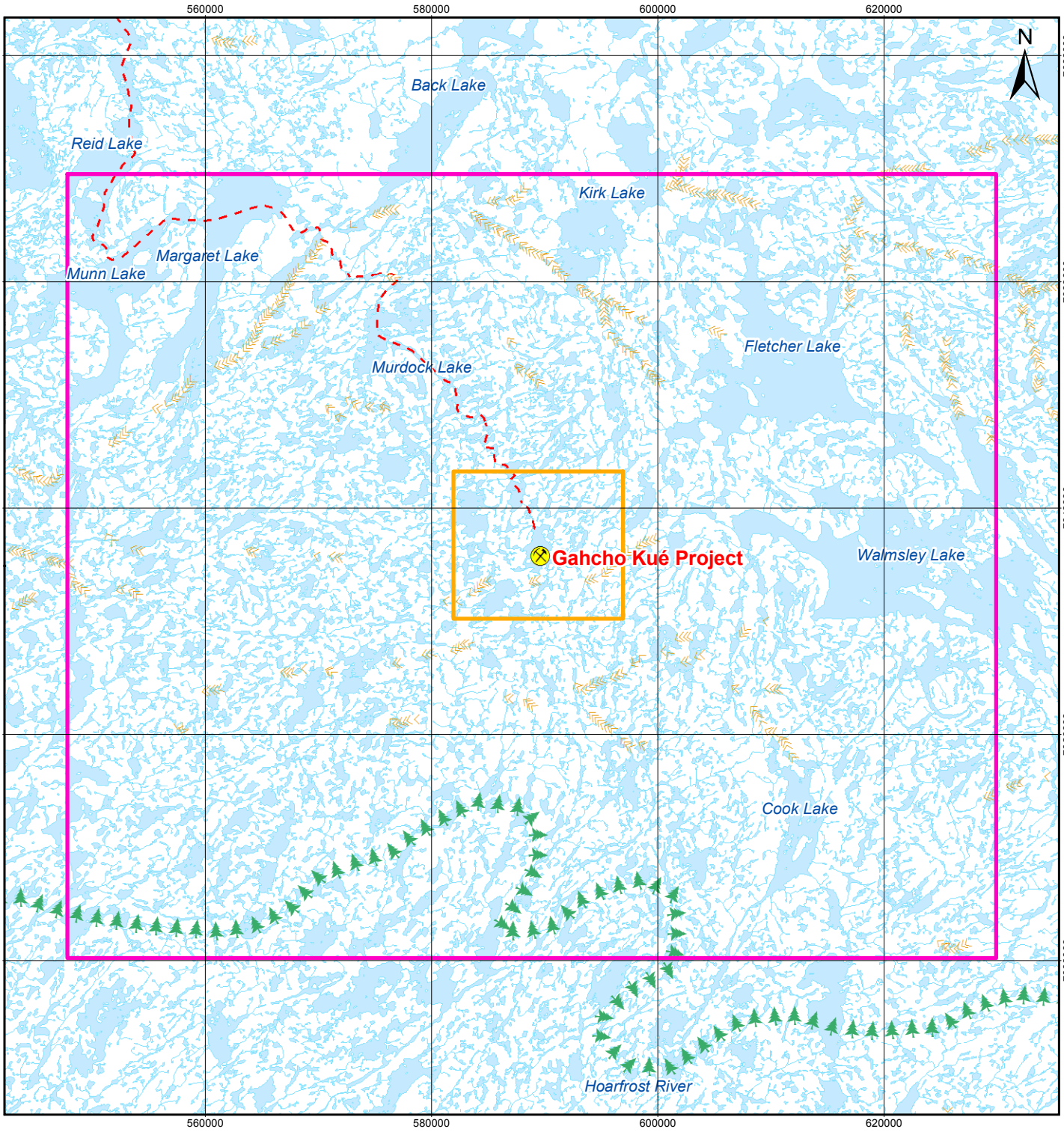

LEGEND

- Gahcho Kué Project
- Winter Access Road
- Watercourse
- Waterbody
- Esker
- Treeline
- Local Study Area
- Regional Study Area

NOTES
Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Local and Regional Study Areas for the Project

PROJECTION: UTM Zone 12	DATUM: NAD83	
Scale: 1:500,000 (10 5 0 10 Kilometres)		
FILE No: B2011-Wild-016-GIS		DATE: September 20, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 3-2
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4 SITE SURVEILLANCE OR LOCAL MONITORING

4.1 MONITORING WILDLIFE-PROJECT INTERACTIONS

Wildlife is expected to continue to be present near the Project during construction, operation and closure. Some wildlife species are attracted to human activity, and interactions or incidents between the Project and wildlife are anticipated. Incidents are defined in the WMP as any wildlife interaction that requires a response by Project personnel. Species that are often attracted to industrial developments in the NWT include gulls, ravens, fox, wolverine, and bears.

Site surveillance or local monitoring is proposed to identify the species, number, and location of wildlife incidents (including direct mine-related mortality), and identify risks to wildlife. Site surveillance monitoring also includes systematically recording the presence of all wildlife (i.e., common and uncommon species, and species at risk) within and around the Project footprint. The program is intended to provide direct feedback to mine operations regarding the effectiveness of waste management and wildlife mitigation practices.

The effectiveness of mitigation may be judged based on concordance of predicted and observed responses (WLWB 2010). At any time, if the mitigation appears to be ineffective, the adaptive management approach will be initiated. However, it is rarely possible to directly test the effectiveness of mitigation, as the data are affected by both the impacts from the development and the mitigation. Ultimately, the effectiveness of mitigation will be considered by the Adaptive Management Committee.

Environment staff, including Aboriginal Environmental Monitors (Section 1.2), will record the presence and movements of wildlife within and around the Project, which will help to keep environment staff apprised of wildlife activity and the potential for problems, and measure the effectiveness of mitigation. Regular inspections for wildlife and fresh wildlife sign around the Project, and regular communication with all staff will provide early warning of wildlife presence on-site before issues arise.

Site surveillance monitoring provides one of the few opportunities to immediately implement mitigation, and directly observe the effectiveness of that mitigation. To use a common example from other mines, local monitoring may detect that a wolverine has gained access and is taking shelter beneath a building. The common mitigation is to block the access through improved skirting, and follow-

up monitoring will confirm whether the mitigation was successful, or if further action is required.

This survey will consist of an inspection of areas within the Project site, scanning observations of wildlife, and records of recent wildlife sign (e.g., tracks, scat). A survey protocol with a targeted route and locations will be included in the final version of the WMP. The survey will be completed on foot and by truck, and environment staff will record the area surveyed, and the nature and location of all observations.

Project staff and contractors will be required to report all observations of large mammals to environment staff, both at the Project site, and along the Project Winter Access Road. Environment staff will respond to, investigate, and record the presence and incidents involving deterrent actions, injury, or mortality of animals, and complete follow-up procedures or management actions as necessary. Wildlife sighting logs will be maintained at various areas around the Project site for staff to record observations of wildlife. If wildlife injury or mortality occurs, then environment staff will conduct an investigation to determine the cause, collect photographs, and store the carcass until further direction from the Department of Environment and Natural Resources (ENR) and complete the follow-up procedures or management actions as necessary. All wildlife sightings, deterrent actions, injuries, and mortalities will be reported in the annual Wildlife Monitoring Report.

Surveys for wildlife presence within and around the Project will occur systematically at least once per week. Investigation and reporting of incidents will be completed as they occur. Monitoring will be continuous throughout the construction, operation, and closure phases of the Project. Environment staff may at any time suggest changes to environmental design features, mitigation and management practices and policies, or the need for additional training for staff, as a result of their investigations.

4.2 MONITORING DIRECT HABITAT LOSS AND ALTERATION

Construction of the Project will lead to the direct loss and alteration of vegetation and landscape features that currently provide wildlife habitat. Changes in habitat can influence the local abundance and distribution of wildlife, and will predominantly occur during construction and at certain periods during operation. Following initial construction of the Project, there will be several distinct phases of operation as each ore body is mined, as the mine rock piles and processed kimberlite containment facilities expand, and areas of Kennady Lake are isolated.

It will be necessary to maintain a record of the actual sequence of operations to document habitat loss and alteration.

Most habitat loss occurs during the construction phase with the development of the Project infrastructure. Habitat loss during operations will be less and at a slower rate, mainly associated with the expansion of mine rock piles. Therefore, monitoring will be initiated during construction and continue into operations. This monitoring theme is relevant to caribou and other wildlife.

As-built drawings of the Project footprint and facilities will be prepared, and compared against existing vegetation maps to estimate vegetation classes disturbed, which will provide a measure of direct habitat loss for wildlife. The comparison will be quantitative. Typically, these maps are created through the purchase of satellite imagery, then delineated and digitized in a Geographical Information System (GIS) platform. However, De Beers may suggest alternate means of producing the as-built maps if the information is available through engineering activities. Habitat alteration, resulting from factors such as dust deposition on vegetation, will be monitored through the Vegetation and Soil Monitoring Program (which include monitoring dust deposition). Maps that illustrate actual and predicted habitat loss will be included in reporting as suggested by communities at the WMP workshop (Appendix A).

4.3 MONITORING WASTE MANAGEMENT

Carnivores and scavengers have a keen sense of smell and can be attracted from long distances if food items are frequently present. Mining projects in the Arctic have reported carnivore and scavenger attraction, including wolverine, fox, grizzly bear, ravens, and gulls. This increases the risk for accidental mortality of wildlife (e.g., collisions with vehicles) and the potential for wildlife interactions with people and the Project.

Good waste management practices and staff education are key to decreasing the availability of attractants at mine sites. Environmental design features, mitigation, and waste management plans will be implemented at the Project to limit the attraction of wildlife, and the associated increased risks of wildlife interactions and mortality. These mitigation strategies will be similar to proven best management practices and policies at other mines in the NWT and Nunavut, including the Snap Lake Mine (e.g., De Beers 2007).

In conjunction with weekly site surveillance monitoring, environment staff will complete inspections of all waste management process components that involve potential attractants. The process will be described in the Waste Management

Plan. Inspections will include surveys of waste storage, transfer vehicles, incineration, landfill, and grey and sewage water treatment. Observations of wildlife and wildlife sign near waste or waste management facilities will be recorded. Wildlife incidents and wildlife deterrent actions will be reported to determine if they were linked to waste management processes.

Inspections will be completed by environment staff, and will document the areas inspected, the attractants found, infractions of the Waste Management Plan and follow-up actions. Inspections will be completed systematically at least once per week throughout the year and during construction, operation, and closure.

Should the inspections identify potential or actual availability of wildlife attractants (food waste in particular), or should observations of wildlife, wildlife sign, or wildlife incidents point to problems in the waste management process, immediate corrective actions will be taken or suggested by the environment staff. Some level of wildlife activity is anticipated regardless of the efficiency of waste management as wildlife may be present naturally or attracted to site even if there is no food reward. Regardless, the potential or actual availability of food waste for wildlife will be the trigger to initiate an investigation and corrective action.

4.4 MONITORING THE PROJECT WINTER ACCESS ROAD

A 120-km Project Winter Access Road, at kilometre 271 of the Tibbitt-to-Contwoyto Winter Road (MacKay Lake), is proposed (Figure 4-1). De Beers will operate the Project Winter Access Road, while the Tibbitt-to-Contwoyto road is operated by the Tibbitt-to-Contwoyto Winter Road Joint Venture (the Joint Venture). The Project Winter Access Road has been used occasionally in the past to bring supplies to the exploration site. Should the Project proceed, it would require that the existing Project Winter Access Road be used annually into closure. Although caribou have not been present in the area in high numbers during the time of year when the Project Winter Access Road is operating, the primary concern of communities and government is the potential for increased harvesting of caribou. Therefore, the objective of the proposed monitoring is:

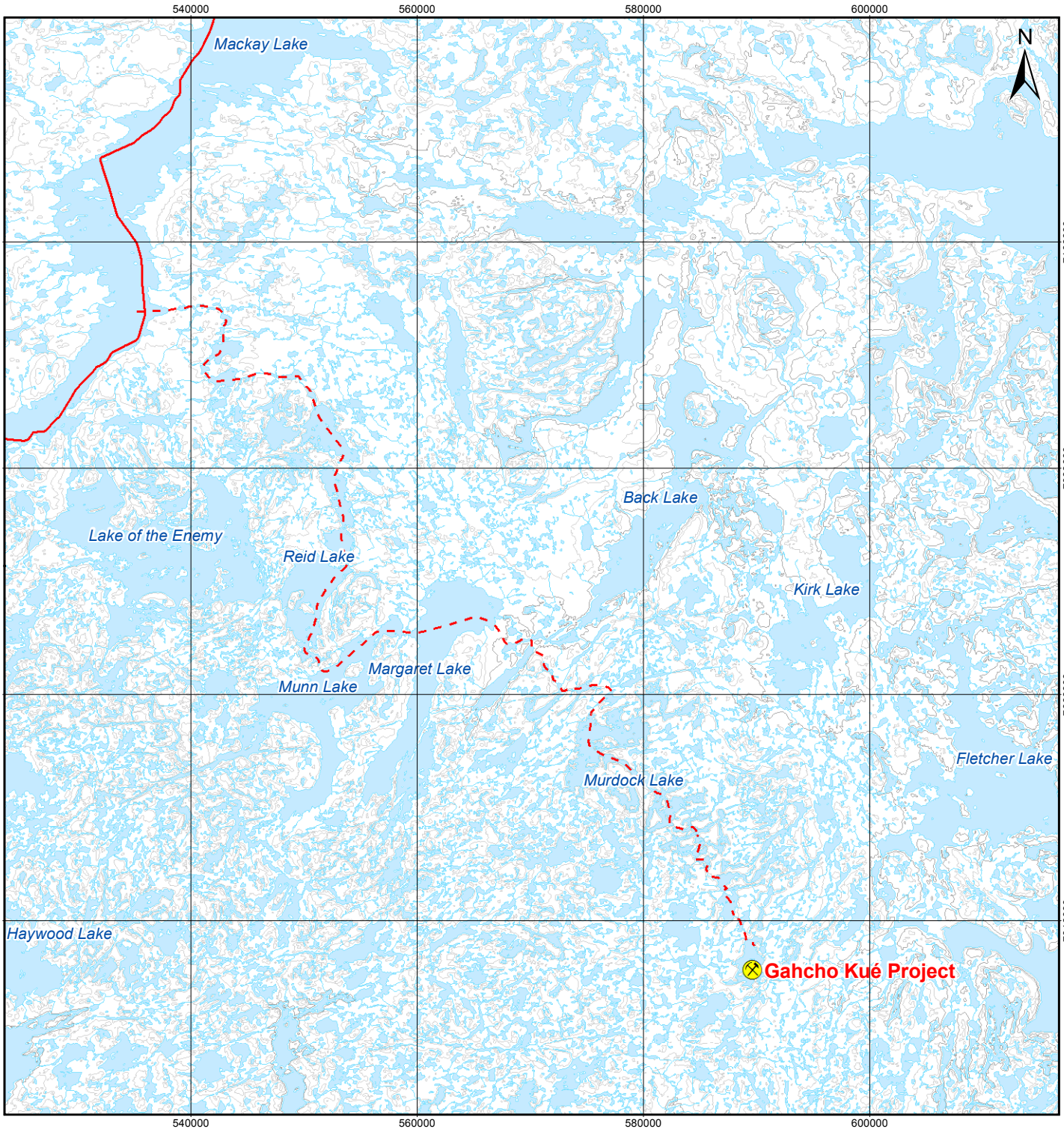
- to determine the amount and type of public use of the Project Winter Access Road.

Monitoring of access and evidence of wildlife harvest will include the entire length of the Project Winter Access Road. Monitoring will be undertaken in each year that the Project Winter Access Road is open, from construction through closure, and is largely specific to caribou.

Currently, three options are available and being evaluated to monitor road use by hunters and other non-Project vehicles on the Project Winter Access Road:

- Regular and frequent inspections of the road undertaken by De Beers Protective Services personnel. Inspections would be completed by driving the length of the Project Winter Access Road between the Project site and MacKay Lake (i.e., km 271 of the Tibbitt-to-Contwoyto Winter Road). All observations of non-Project vehicles or evidence of caribou and other wildlife harvest would be recorded and provided in annual reports. This information will be provided immediately to ENR if a concern is identified. A standardized reporting form would be developed in consultation with ENR.
- Station ENR personnel or an Aboriginal Environmental Monitor at a rest stop along the road. Check in by non-Project road users would be voluntary. Observations of non-Project vehicles would be recorded and provided in annual reports, and immediately to ENR in the event a concern is noted. A standardized reporting form would be developed in consultation with ENR.
- Survey the Project Winter Access Road during the operating window by Community Monitors when caribou are known to be in the area to record the presence and location of caribou, hunting activity and identify locations along the road that might restrict caribou movements. It is anticipated that this may serve as an opportunity for the transfer of TK to Aboriginal youth (Section 1.2).

Further to these options, ENR may pursue the establishment of another monitoring location along the Tibbitt-to-Contwoyto Winter Road in cooperation with the Joint Venture.



LEGEND

- Gahcho Kué Project
- Tibbitt-to-Contwoyto Winter Road
- Winter Access Road
- Watercourse
- Waterbody
- Index Contour (100m interval)
- Intermediate Contour (20m interval)

NOTES
Source: Figure 3.10-2 in De Beers 2010
Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Winter Access Road to the Project Site

PROJECTION: UTM Zone 12	DATUM: NAD83	De Beers Canada
Scale: 1:500,000 (10 5 0 10 Kilometres)		
FILE No: B2011-Wild-017-GIS		DATE: March 9, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 4-1
OFFICE: GOLD-CAL	DRAWN: CW / CHECK: PT	

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5 REGIONAL MONITORING

During the technical workshop meeting among De Beers, various agencies, and communities (De Beers 2012b), and the WMP working group meetings, De Beers was advised that the monitoring program for caribou should consider the effects pathways investigated in the EIS and the effects predictions. Monitoring should be designed to answer the three key questions – why, what, and how to monitor (Section 1.5, Figure 1-2). Therefore, Sections 5.1.1 and 5.1.2 provide the rationale for selecting the type of monitoring and what aspects (i.e., components and themes) of caribou and the environment to monitor. Monitoring objectives for each theme are also presented. Sections 5.1.3 through 5.1.9 provide the study designs for meeting the monitoring objectives. The revised Conceptual Caribou Monitoring Plan provided the basis for all the information contained in Section 5.1.

In contrast to caribou, the determination of monitoring components, themes and objectives for other wildlife VCs was based on established monitoring objectives, study designs and sampling methods. Monitoring of other wildlife VCs uses the lessons-learned and best practices for providing a regional understanding of changes in the spatial and temporal patterns of habitat use, and abundance and distribution of wildlife.

5.1 CARIBOU

As described in the EIS, the Bathurst caribou herd moves through the Project RSA during the northern migration to the calving grounds near Bathurst Inlet, and during the post-calving migration to the wintering grounds south of the treeline (De Beers 2010). Barren-ground caribou currently are not considered a species at risk (Appendix B) and are scheduled for assessment by the NWT SARC in December 2013 (NWT SARC 2012).

5.1.1 Effects Pathways and Monitoring Themes

All of the effects pathways assessed in the EIS are presented in Appendix D, Table D-1. The effects pathways were developed from the Project technical and community scoping sessions in the spring of 2006 (i.e., Report of Environmental Assessment [MVEIRB 2006]). Thus, the pathways integrate the concerns of communities, government, and other people interested in the Project. For background information, the pathways identified during these scoping sessions are provided in Appendix E (Figures E-1 to E-5). Pathways were also developed from the Terms of Reference (Gahcho Kué Panel 2007) and knowledge from operating diamond mines (Section 1.5). For example, the effects to caribou

predicted to be caused by mining was summarized in the Diamond Mine Wildlife Monitoring Workshop (Appendix F) as:

- direct habitat loss;
- indirect habitat loss due to sensory disturbances;
- alterations to caribou movement and avoidance of mine infrastructure (the zone of influence [ZOI]);
- behavioural disturbances;
- roads acting as barriers; and
- mine-related mortalities.

Table D-1 (Appendix D) lists the specific effects pathway assessed, assumptions, predictions and magnitude of effects from the 2010 EIS (De Beers 2010). As suggested by the WMP working group, the pathways are then linked to the monitoring components (caribou, habitat, people) and applicable monitoring programs associated with each pathway. Table 5-1 provides groupings of all the specific effects pathways listed in Table D-1 (Appendix D) into seven representative and manageable general effects pathways. Table 5-1 also links the seven representative effects pathways back to the initial monitoring components (caribou, habitat, people), it provides the overall effects prediction for each effects pathway, and lists the associated types of monitoring, and monitoring themes.

To clarify, the monitoring components are represented by several monitoring themes that capture the general effects pathways. These themes are used to design specific monitoring objectives and studies associated with each monitoring component (i.e., caribou, habitat, and people [Section 1.5]). This hierarchial approach to designing the monitoring plan was developed by the WMP working group. Using the example of a change in caribou distribution from the Project (i.e., zone of influence), Figure 5-1 shows the connection between the type of monitoring, the monitoring component and theme, and the monitoring objectives and study. There may be one or more objectives (and studies) related to each monitoring theme.

The monitoring themes include:

- habitat loss and alteration;
- access;
- direct mine-related mortality;

- caribou health;
- change in distribution;
- change in behaviour; and
- change in survival and reproduction.

For some themes, supporting information will be collected by other monitoring programs. Linkages to these other monitoring programs are also provided in Table 5-1. Data gathered through the monitoring programs will help to test key effects predictions, assumptions, and mitigation for each pathway (Appendix D, Table D-1).

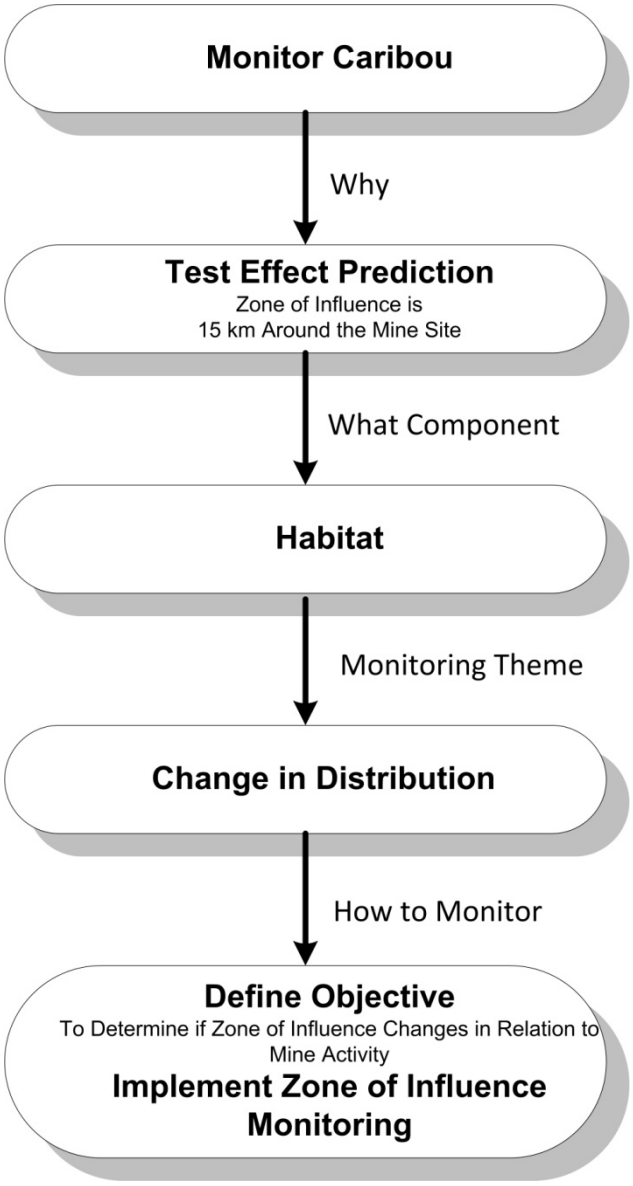
Table 5-1 Summary of Monitoring Components, Effects Pathways, Effects Predictions, Types of Monitoring and Monitoring Themes

Monitoring Components	General Pathways	Effects Predictions	Types of Monitoring	Monitoring Themes	Applicable Monitoring Programs
Habitat	Direct and indirect habitat loss	Negligible to low	Testing effects	Habitat loss and alteration Change in distribution Change in behaviour	Site Surveillance Monitoring Vegetation and Soil Monitoring Program
People	Access	Negligible to low	Testing effects Testing mitigation effectiveness	Access Change in survival and reproduction	Site Surveillance Monitoring
Habitat and Caribou	Sensory disturbance	Negligible to low	Testing effects	Habitat loss and alteration Change in distribution Change in behaviour Change in survival and reproduction	Site Surveillance Monitoring Regional Monitoring
Habitat and Caribou	Dust deposition	Nil to low	Testing effects	Habitat loss and alteration Change in distribution Change in behaviour Caribou health	Site Surveillance Monitoring Regional Monitoring Vegetation and Soil Monitoring Program Air Quality Monitoring Program Surveillance Network Program Aquatic Effects Monitoring Program
Caribou	Physical and chemical hazards	Nil to negligible	Testing effects Testing mitigation effectiveness Regulatory requirement[(a)]	Direct mine-related mortality Caribou health	Site Surveillance Monitoring Vegetation and Soil Monitoring Program Wildlife Mitigation and Management Plan Waste Management Plan Emergency Response Plan Surveillance Network Program Aquatic Effects Monitoring Program
Habitat and Caribou	Dewatering and changes to downstream flows	Nil to negligible	Testing effects Regulatory requirement[(a)]	Habitat loss and alteration Change in distribution Change in behaviour Direct mine-related mortality	Site Surveillance Monitoring Vegetation and Soil Monitoring Program Surveillance Network Program
Habitat	Seepage and leaching from Fine PKC Facility and Coarse PK and mine rock piles	Nil	Testing effects Regulatory requirement[(a)]	Habitat loss and alteration Change in distribution Change in behaviour	Site Surveillance Monitoring Surveillance Network Program Aquatic Effects Monitoring Program Decommissioning Monitoring

[(a)] Potential permitting requirement (e.g., Aquatic Effects Monitoring Program).

PK = processed kimberlite; PKC = processed kimberlite containment.

Figure 5-1 Example of the Process for Developing Specific Monitoring Objectives and Study Designs and Methods



5.1.2 Monitoring Themes, Objectives and Studies

As discussed in Section 1.5 and shown in Figure 5-1, monitoring themes are used to expand on the monitoring components and help determine the specific written objectives of monitoring. A set of clear and measurable objectives need to be defined as the objectives will inform the appropriate spatial and temporal scales of the monitoring, and the study designs and sampling methods. The monitoring themes from Table 5-1 are presented again in Table 5-2 with links to the corresponding objectives and studies. Further details on each theme are provided in the following sections.

An additional objective for the WMP is to incorporate and consider TK throughout the life of the Project. The ways in which De Beers proposes to achieve this objective are described in Section 1.2.

Table 5-2 Monitoring Themes and Associated Objectives, Spatial Scale, Temporal Scale and Studies

Monitoring Theme	Objectives	Spatial Scale	Temporal Scale	Specific Studies
Direct mine-related mortality	To identify instances where the Project presents direct physical hazards to caribou	Project footprint Individuals	Construction Operation Decommissioning	Caribou-Project Interactions Monitoring Waste Management Monitoring
Caribou health	To identify and mitigate risks to the safety and health of caribou	Project footprint Individuals	Construction Operation Decommissioning	Vegetation and Soil Monitoring Air Quality and Dust Monitoring Caribou-Project Interactions Monitoring
Habitat loss and alteration	To confirm that the amount of total direct terrestrial landscape alteration does not exceed predictions To confirm that changes in vegetation surrounding the Project does not exceed predictions	Local Study Area Individuals	Construction Operation	Direct Habitat Loss Monitoring Vegetation and Soil Monitoring Air Quality and Dust Monitoring
Access	To determine the amount and type of public use of the Project Winter Access Road	Project Winter Access Road Corridor Population	Construction Operation Decommissioning	Project Winter Access Road Use Monitoring
Change in distribution	To determine whether the zone of influence changes in relation to mine activity (Handley 2010)	Regional Study Area Population	Construction Operation Decommissioning	Caribou Zone of Influence Monitoring Vegetation and Soil Monitoring Air Quality and Dust Monitoring
Change in behaviour	To determine if caribou behaviour changes with distance from the mine (Handley 2010)	Regional Study Area Population	Construction Operation Decommissioning	Caribou Activity Budget Monitoring Vegetation and Soil Monitoring Air Quality and Dust Monitoring
Change in survival and reproduction	To contribute to the Bathurst Caribou Management Plan[(a)]	Annual Range Population	Construction Operation	Contributions to the Bathurst Caribou Management Plan

(a) To be determined through discussions with ENR.

5.1.3 Direct Mine-related Mortality

The incidence of direct mine-related mortality at diamond mines has been extremely low. Marshall (2009) reports that there only two mine-related caribou mortalities have occurred since 1996. To clarify, there have been instances where caribou have died near mines, but only rarely has the cause of death been attributed to mining activity. At the Diamond Mine Wildlife Monitoring Workshop (Marshall 2009), participants did not provide any substantive comments with respect to mine-related caribou mortalities, or suggestions for improvements. Mitigation appears to have been successful at avoiding impacts.

Monitoring will be implemented to identify hazards to caribou, and prevent mine-related caribou mortalities at the Project (Section 4). Site surveillance and waste management monitoring are proposed to evaluate the effectiveness of mitigation throughout all phases of the Project (Table 5-2).

5.1.4 Caribou Health

The theme caribou health includes pathways related to physical and chemical hazards from the Project (e.g., exposure to hazardous substances), and some effects from changes in soil and vegetation chemistry due to dust deposition. The monitoring objective proposed in Table 5-2 is intended to guide the identification of such risks, so that they can be promptly managed. Monitoring potential risks to caribou health will be completed through studies designed to measure changes in water, soil, and vegetation chemistry. These studies would include the Vegetation and Soil Monitoring Program, Surveillance Network Program and Aquatic Effects Monitoring Program (Tables 5-1 and 5-2). The ecological risk assessment for the Project demonstrated that health risks to caribou spending time around the mine are negligible. Subsequently the concern for caribou is largely related to cumulative health effects. Therefore, the data from these monitoring programs could be provided to government and used at their discretion to complete a screening level ecological risk assessment to determine cumulative potential health risks to caribou. Monitoring would be carried out through all phases of the Project.

5.1.5 Habitat Loss and Alteration

The loss and alteration of caribou habitat will occur from several components of the Project infrastructure and local dust deposition. These changes in habitat can influence the local abundance and distribution of caribou, and other wildlife. The monitoring objectives include the loss and alteration of habitats on the landscape (including vegetated and non-vegetated areas) (Table 5-2). Although caribou often use frozen lakes in winter and during the spring migration, monitoring will

focus on habitat use during the summer and fall seasons when caribou are travelling and foraging in the area.

Habitat loss during operations will be smaller and at a slower rate relative to construction and mainly associated with the expansion of mine rock piles. Therefore, site surveillance monitoring will be initiated during construction and continue into operations (see Section 4.2 for further details). As-built drawings of the Project footprint and facilities will be prepared, and compared against existing vegetation maps to estimate vegetation classes disturbed as a measure of direct habitat loss for wildlife. The comparison will be quantitative. Habitat alteration, resulting from factors such as dust deposition on vegetation, will be monitored through the Vegetation and Soil Monitoring Program (which include monitoring dust deposition). Maps that illustrate actual and predicted habitat loss will be included in reporting as suggested by communities at the WMP workshop (Appendix A).

5.1.6 Access

The theme access is intended to address concerns regarding a possible increase in caribou harvesting as a result of the Project Winter Access Road. The objective of the proposed monitoring is to determine the amount and type of public use of the Project Winter Access Road (Table 5-2). Although this road is not a new feature to the landscape, it will come into regular and more intensive use during the construction and operation of the Project. Monitoring of access and evidence of caribou and other wildlife harvest will include the entire length of the 120 km road. Monitoring will be undertaken in each year that the Project Winter Access Road is open, from construction through closure, and is largely specific to caribou harvest (see Section 4.4 for further details).

5.1.7 Change in Distribution

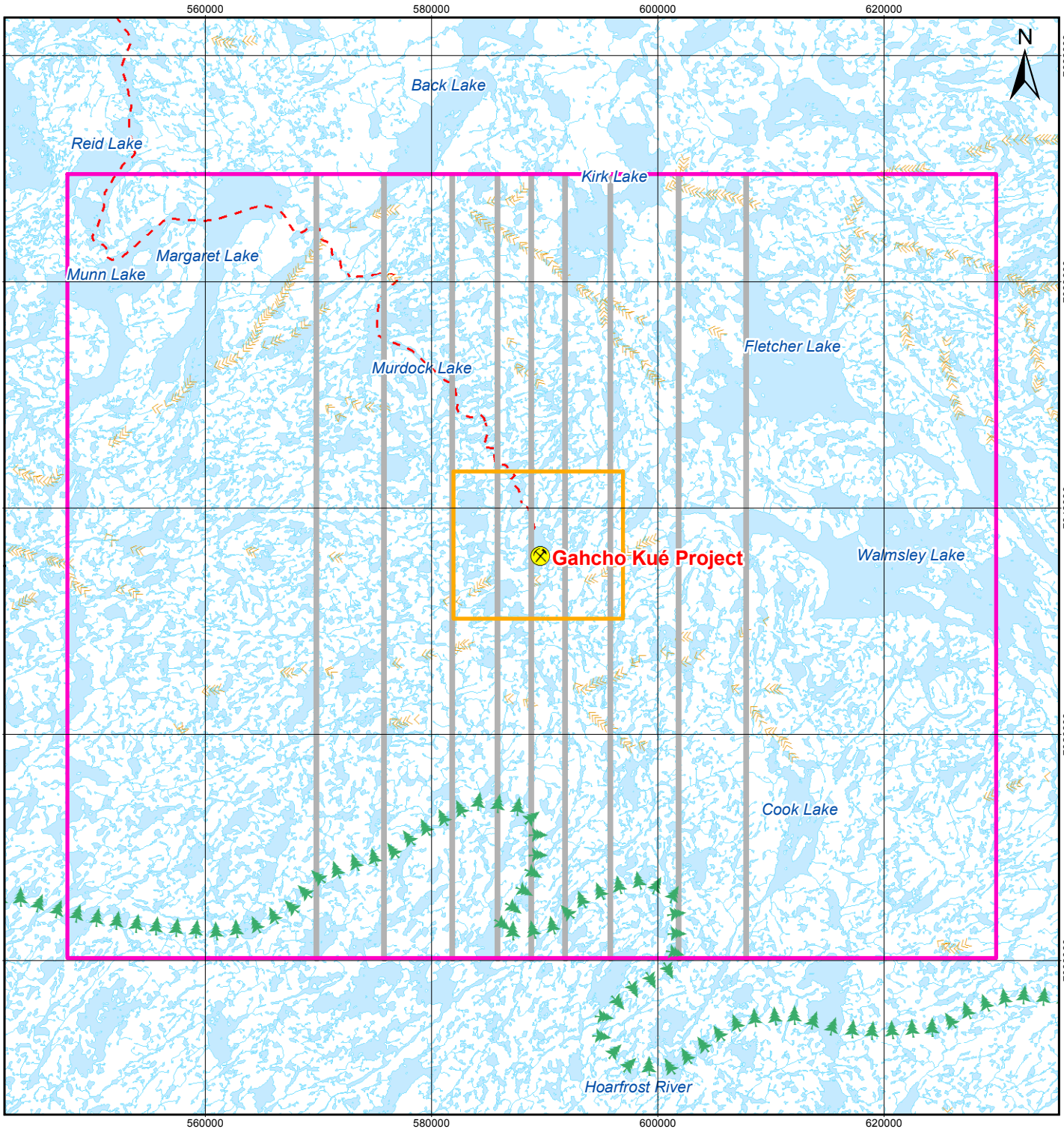
Changes to caribou distribution from alterations in movement are anticipated to occur as caribou respond to habitat loss and sensory disturbance. The monitoring objective is to determine if the ZOI changes in relation to mine activity (i.e., there is a change in the spatial extent of the ZOI through time) (Table 5-2). The objective is based on recommendations during the Diamond Mine Monitoring Technical Workshop in September 2010 (Handley 2010). It was assumed in the EIS for habitat modelling purposes that the ZOI at the Project will be similar (i.e., 15 km) to that observed at the Ekati-Diavik diamond mine complex (see Golder 2011; Boulanger et al. 2012). Under the current level of development, these local changes in the distribution of animals around the Project and other previous, existing and reasonably foreseeable developments were predicted to have no significant effect on the abundance and movement of caribou across their seasonal ranges. Because the monitoring objective includes estimating the

ZOI in relation to mine activity, monitoring should be undertaken during the construction, operation, and closure of the Project, and is largely specific to caribou habitat.

Studies on the ZOI around the Project are not likely to provide information helpful to adaptively manage mining operations. However, monitoring caribou distribution around the Project would likely contribute information for future environmental assessments and for the on-going assessment and management of cumulative effects by government under different development scenarios. In other words, estimating a ZOI for the Project provides habitat information at the population level if government develops the necessary modelling tools to use the information. As suggested during the Diamond Mine Wildlife Monitoring Workshop (Marshall 2009; Appendix F), the aerial surveys may not necessarily be undertaken annually if no new information is being gathered (i.e., caribou are infrequently in the study area).

As the predicted ZOI is considerably smaller than the RSA used for baseline studies, a new study area should be established so that efforts can be better allocated across space and time. The monitoring study area will consider both the geographic extent of indirect effects from the Project, and the trade-off of actual sampling coverage versus study area size. In other words, a larger study area may result in proportionately less sampling coverage, which could generate ZOI estimates with poor accuracy and precision. Baseline studies predict that the most common seasons for caribou to encounter the Project are during the summer dispersal and fall migrations, extending from early July to late October. Subsequently, the summer and fall migration seasons will be the focal period for monitoring caribou distribution relative to the Project.

To improve the accuracy and precision of ZOI estimates a new caribou aerial survey design within the RSA that focuses sampling effort closer to Project footprint is proposed (Figure 5-2). The proposed design includes 70 km-long transects oriented in a north-south direction and spaced at 3 km, 7 km, 13 km and 19 km from either side of a centrally located transect that intersects the Project footprint (total number of transects is nine). The survey will cover an area of 755 km^2 (13.5% of the RSA and 40% of the LSA) using a 600 m observation width on either side of the aircraft. The proposed design will result in 630 1 km-long transect segments that will be used to estimate the ZOI. Distances associated with these segments range from 0 km to 38 km, and 60% of these distances are less the 21 km from the edge of the Project footprint. The resulting increase in area surveyed closer to the Project footprint is expected to improve the precision of estimates generated from previous designs (e.g., Golder 2011; Boulanger et al. 2012).



LEGEND

- Gahcho Kué Project
- Winter Access Road
- Watercourse
- Waterbody
- Esker
- Treeline
- Survey Transect
- Project Local Study Area
- Project Regional Study Area

NOTES
Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Proposed Study Area and Aerial Survey Transects for Zone of Influence Monitoring

PROJECTION: UTM Zone 12	DATUM: NAD83	
Scale: 1:500,000 (10 5 0 10 Kilometres)		
FILE No: B2011-Wild-014-GIS		DATE: September 20, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 5-2
OFFICE: GOLD-CAL	DRAWN: DC / CHECK: JV	

DE BEERS CANADA

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While monitoring caribou distribution at existing diamond mines has included aerial transect surveys and use of collared caribou data, questions continue to be raised about the efficacy of these methods and the potential disturbance to caribou and other wildlife from aerial surveys in particular. The result is a need to carefully consider study methods measured against the added value of the data collected, which should be determined by the Adaptive Management Committee.

5.1.8 Change in Behaviour

Studies at Ekati and Diavik have observed that in some cases there are minor behavioural changes in caribou near the mines, which is likely to have a negligible effect on the energy budget of caribou (BHPB 2010; Golder 2011). These changes were detected with broadly defined behaviours by grouping observations into feeding/resting and moving categories, and for caribou groups divided into those with calves and without calves. However, ENR has cautioned that it is difficult to separate the effects associated with the mines from natural factors that affect caribou such as weather and insect harassment (Marshall 2009; Appendix F). There have also been consistent difficulties in collecting sufficient data for analysis, as behavioural studies can only be undertaken when there are large numbers of caribou present in the study area and when environmental monitors are available to respond immediately (Marshall 2009; BHPB 2011). Due to the variability introduced by natural factors, a large amount of data is required before conclusions can be made. In a number of years, there have been too few caribou in the study area (or for too short a duration) for sufficient data to be collected.

The objective for monitoring changes in caribou behaviour is based on recommendations from the Diamond Mine Wildlife Monitoring Workshop (Marshall 2009) (Table 5-2). The objective is largely related to testing the assumption of the energetic model used in the EIS. For example, it could be tested that 55% of caribou groups show a behavioural response to sensory disturbances and that when disturbed, groups run away from the source for 15 minutes. The data collected could be provided to ENR to further develop caribou behaviour and energetic models. As noted for monitoring changes in caribou distribution (Section 5.1.7), monitoring caribou behaviour around the Project could contribute to future environmental assessments and the assessment and management of cumulative effects by government under different development scenarios.

However, based on the results of monitoring at existing mines, behaviour changes are minor, making them difficult to detect and attribute to energetic effects, vary from year to year, and appear to be largely driven by factors other than the mine (Marshall 2009).

The study design and sampling methods would be consistent with data collection procedures used at Ekati and Diavik, and with input from communities and TK (Section 1.5; Figure 1-2). For example, at the working group meeting (August 7, 2012), it was stated that Elders may have important knowledge on the differences in behavioural categories for solitary males versus females with calves.

5.1.9 Change in Survival and Reproduction

Measurable changes to caribou survival and reproduction are not predicted to result from the Project. The pathways investigated represent changes that operate at a population level, and result from the cumulative effects of numerous developments and natural factors rather than from the Project alone. Caribou survival and reproduction are influenced by natural factors throughout their range, such as insect harassment and range conditions affected by climate and herd density, making it difficult to separate Project-related effects from natural factors. For example, a population viability analysis was completed in the EIS and expanded in an addendum. The results of the analyses showed that disturbance to caribou habitat and energetics from the Project had a statistically non-measurable effect on the population. Increases in insect harassment and harvest rate had a much stronger effect on the population relative to the incremental and cumulative effects from the Project and other developments. Therefore, monitoring effects to caribou survival and reproduction are most meaningful at the population scale and requires collaboration among government, communities, and industry.

Concerns have been raised regarding possible cumulative effects of harvesting, development, and climate change to caribou (ENR 2011). De Beers recognizes that they are one of the many land users on the Bathurst caribou annual range. De Beers may contribute to population level monitoring of the Bathurst caribou herd, the strategy of which is outlined in the Barren-ground Caribou Management Strategy (ENR 2011). Although the details of this contribution have not yet been defined, and will likely change from year to year, discussions between ENR and De Beers will continue. Possible monitoring contributions by De Beers towards the Caribou Management Strategy include the following activities.

- Support for collaborative studies on wolves in the Bathurst caribou range to investigate wolf abundance and predation, which is an area of importance for communities during the decline of the Bathurst caribou herd.
- Support of GPS collar deployment, which could also provide information to assess habitat use in the RSA. Increased interest and recognition of

the need for more collars was identified by communities at the WMP workshop.

- Participate in the development of a public education program regarding responsible use of the winter roads with input from TK.
- Support of meetings, workshops, or other studies indicated in the Caribou Management Strategy.
- Monitoring of factors that are linked to caribou energetics such as snow melt, and weather.

5.2 GRIZZLY BEAR

The combination of natural environmental factors and cumulative human-related activities influence the abundance and distribution of grizzly bears. If barren-ground grizzly bears have a similar sensitivity to human disturbance as other bear populations (described in McLellan 1990), they may tend to avoid the developments (Johnson et al. 2005). Alternately, grizzly bears could be attracted to human activity and the odours associated with developments in remote areas, which can lead to dangerous interactions between humans and bears. The western population of grizzly bear is currently not considered a species at risk (Appendix B) and is scheduled for assessment by the Northwest Territories Species at Risk Committee in December 2015 (NWT SARC 2012).

As described in Section 5.1.2, the approach used for the determining types of monitoring and monitoring themes for grizzly bears was similar to that used for caribou but was not based on examination of all effects pathways. The types of monitoring include testing effects and mitigation, and cumulative effects monitoring, the monitoring component is grizzly bear and the monitoring theme is contributing to regional monitoring.

Based on the effects assessment, it is predicted that mine-related impacts to grizzly bears populations will be negligible. As described in the EIS, the history at four operating diamond mines in the NWT indicates that grizzly bears may interact with the Project site, but that direct mine-related mortality has been low (0.074 mortalities per mine year; De Beers 2010). Direct habitat loss and alteration, mitigation, and bear interactions and mortalities at the Project will be monitored through site surveillance monitoring (Section 4). However, other mine-related effects have proven to be more difficult to assess. Past grizzly bear monitoring designs and data have been inadequate to evaluate indirect effects on abundance and distribution (e.g., potential ZOI) (Marshall 2009; Handley 2010). This has primarily been a function of low numbers of bears with large home ranges relative to project-specific study areas. Therefore, previous

objectives for monitoring grizzly bear were revised to a single objective at the 2010 Diamond Mine Wildlife Monitoring Workshop (Handley 2010):

- To determine if mine-related activities influence the relative abundance and distribution of grizzly bears over time.

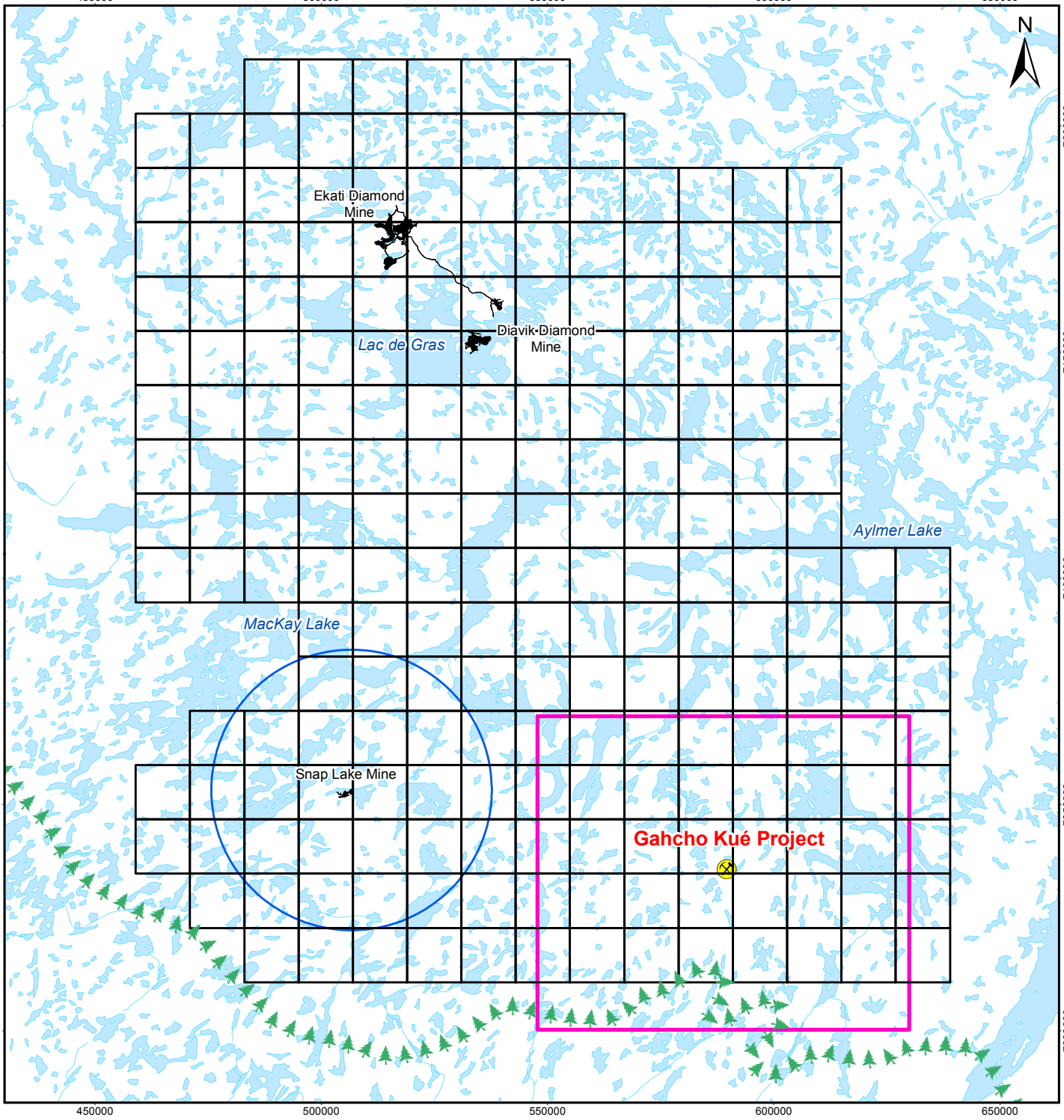
A regional-scale hair-snagging approach based on collaboration among De Beers, BHP Billiton, Rio Tinto Canada Inc. and ENR has been initiated to meet this objective and to assess potential cumulative effects (Rescan 2012). The results of the program may also be informative to federal and territorial species at risk assessments.

The abundance and distribution of grizzly bears in the proposed study area will be monitored using hair snagging methods to collect deoxyribonucleic acid (DNA) data on individual bears (Figure 5-3). The regional program covers approximately 30,500 km^2 around the Ekati, Diavik, and Snap Lake mines and the Project. The southern area (14,500 km^2) will be surveyed by De Beers for the Project and Snap Lake Mine, which are close to the treeline (Figure 5-3).

Hair samples from bears will be collected using a tripod made of lumber and wrapped with barbed wire. A non-reward lure that provides little nutritional value will be placed in the centre to attract bears and used to avoid habituation by animals associated with baits. The distribution of stations will use a 12 km x 12 km grid-cell pattern with one station per cell. The selection of sites within each cell will be informed by TK. The total number of stations has not been finalized. Hair snagging stations will be checked a total of six times, approximately every 10 to 14 days from June/July to September. Hair present will be collected and archived for later DNA analysis.

Initially, this component of the monitoring program will begin in 2013 and 2014. The long-term monitoring frequency will depend on:

- the ability of the data to meet the objective;
- the amount of change that has been observed;
- the contribution to adaptive management;
- input from communities and ENR; and
- the contribution to the understanding of regional cumulative effects.



LEGEND

- Gahcho Kué Project
- Watercourse
- Waterbody
- Treeline
- Grizzly Bear Study Area
- Mine Footprint
- Project Regional Study Area
- Snap Lake Mine Regional Study Area

NOTES

Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Proposed Grizzly Bear Study Area

PROJECTION: UTM Zone 12	DATUM: NAD83	De Beers Canada
Scale: 1:1,250,000 (25 12.5 0 25 Kilometres)		
FILE No: B2011-Wild-012-GIS		DATE: September 20, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 5-3
OFFICE: GOLD-CAL	DRAWN: DC / CHECK: JV	

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5.3 WOLVERINE

Wolverines may be attracted to developments in search of food or shelter, which may lead to an increased risk of mortality from vehicle collisions or human interaction. Since 1996 there have been 11 wolverine mortalities at existing and previous mine sites in the region for an annual mine-related mortality rate of 0.204 wolverines per mine per year (De Beers 2012d). However, the number of such incidents has decreased notably, as waste management practices have improved. Since 2006 three mine-related wolverine mortalities have occurred for a rate of 0.167 per mine per year.

The Western population of wolverine is currently not considered a species at risk (Appendix B) and is scheduled for assessment by the NWT SARC in December 2014 (NWT SARC 2012). Direct habitat loss and alteration, mitigation, and wolverine interactions and mortalities at the Project will be monitored through site surveillance monitoring (Section 4). Hair snagging studies were undertaken in 2004 and 2005 to determine a point estimate of the abundance of wolverine in the Kennady Lake region. In addition, snow tracking was completed in 2011 and 2012 to collect baseline data for assessing potential mine-related effects on the relative activity and distribution of wolverines. As described in Section 5.1.2, the approach used for the determining types of monitoring and monitoring themes for wolverine was similar to that used for caribou but was not based on examination of all effects pathways. The types of monitoring include testing effects and mitigation, and cumulative effects monitoring, the monitoring component is wolverine and the monitoring theme is contributing to regional monitoring.

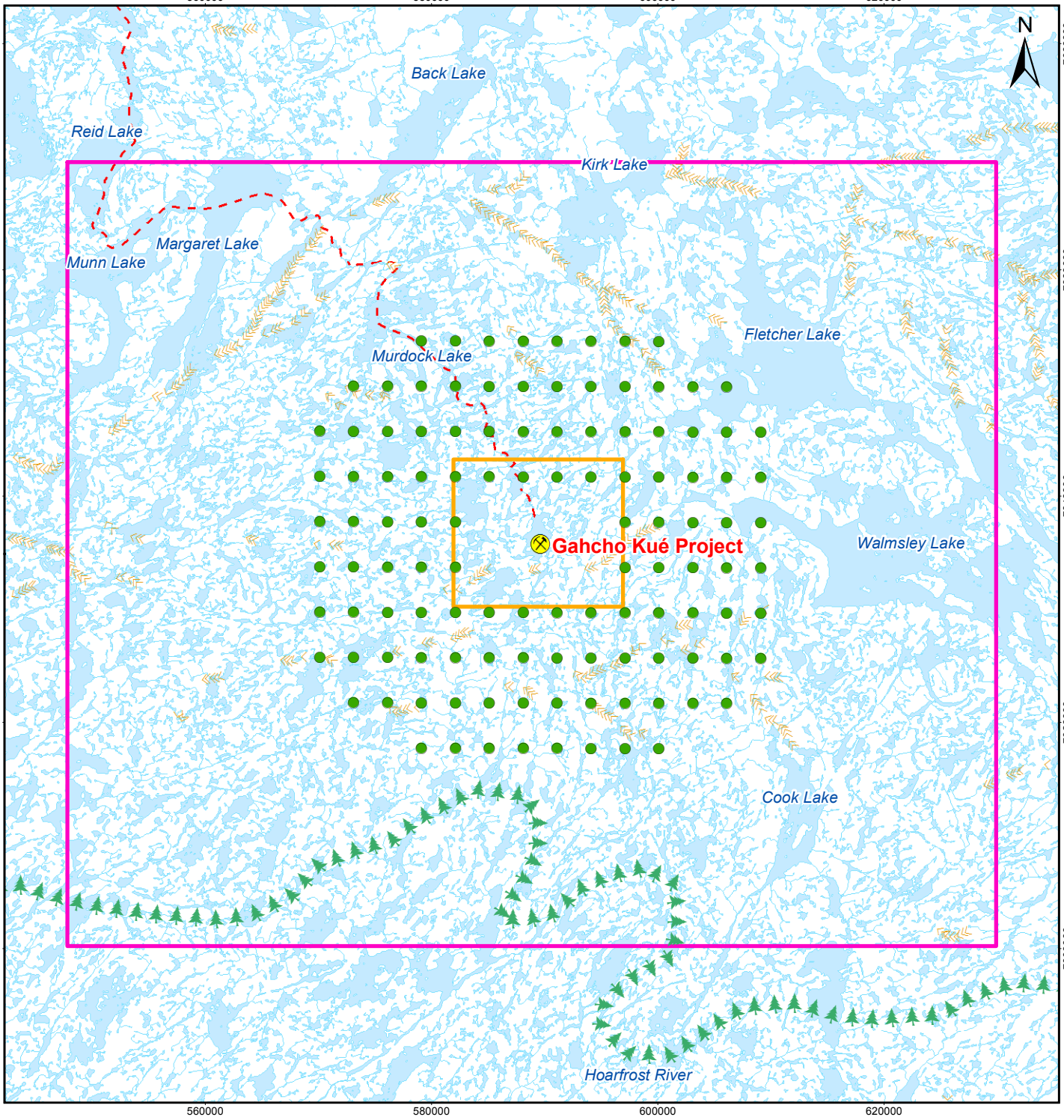
Currently, there are three existing wolverine hair-snagging studies in the Lac de Gras area. Wolverine hair-snagging studies are completed at the Ekati and Diavik diamond mines and at ENR's Daring Lake research camp located near these developments, on a cycle of once every three years. Monitoring by De Beers would complement these other studies by providing information from a different area and will contribute to regional information on the density, vital rates, and population trends of barren-ground wolverines in the NWT, and to federal and territorial species at risk assessments. As shown in the EIS, impacts to local wolverine populations have largely been mitigated through improvements to limit access to shelter and through waste management practices. A single monitoring objective for wolverine hair-snagging was determined at the 2010 Diamond Mine Wildlife Monitoring Workshop (Handley 2010):

- To provide estimates of wolverine abundance and distribution in the study area over time.

The purpose of the wolverine monitoring is to estimate wolverine density and, over longer periods, survival and dispersal rates and population trends for management of the species in the North Slave Region of the NWT. The study will also contribute towards an existing database of wolverine DNA 'fingerprints'. This will allow other fingerprinted wolverine (collected from harvested or relocated animals, mine-related mortalities and wolverine identified in other hair-snagging studies) to be related back to the study population.

The hair snagging approach is proposed as the primary means of monitoring wolverine and will follow methods described in Mulders et al. (2007) and Boulanger and Mulders (2008). Hair-snagging posts will be distributed within a 1,500 km^2 area surrounding Kennady Lake in a grid cell area of 12 km^2 (120 posts in a 3 km by 4 km grid, Figure 5-4). Posts distributed at this density (1 per 12 km^2) and spatial scale will balance the needs of relatively high recapture rates for precise estimates of density and demographic parameters, while reducing the operational costs of the study. For example, efficient (cost-effective and precise) estimates of wolverine population size have been generated using grid cell areas of 9 and 18 km^2 at Daring Lake and the Ekati and Diavik mines (Mulders et al. 2007; Boulanger and Mulders 2008). No posts would be erected within 5 km of the Project site to avoid attracting wolverine to site. Post location within each cell will be informed by TK.

The monitoring schedule used at other diamond mines has included two consecutive years of sampling so that a high proportion of individuals in the local population are identified for recapture during future years. Thus, hair snagging is proposed to occur in 2013 and 2014. Future monitoring would then be aligned to occur in the same year as existing programs in the Lac de Gras region.



LEGEND

- Gahcho Kué Project
- Winter Access Road
- Watercourse
- Waterbody
- Esker
- Treeline
- Wolverine Hair Snagging Post
- Project Local Study Area
- Project Regional Study Area

NOTES
Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Wolverine Study Area

PROJECTION: UTM Zone 12	DATUM: NAD83	DE BEERS CANADA
Scale: 1:500,000 — 10 5 0 10 Kilometres		
FILE No: B2011-Wild-013-GIS		DATE: September 20, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 5-4
OFFICE: GOLD-CAL	DRAWN: DC / CHECK: JV	

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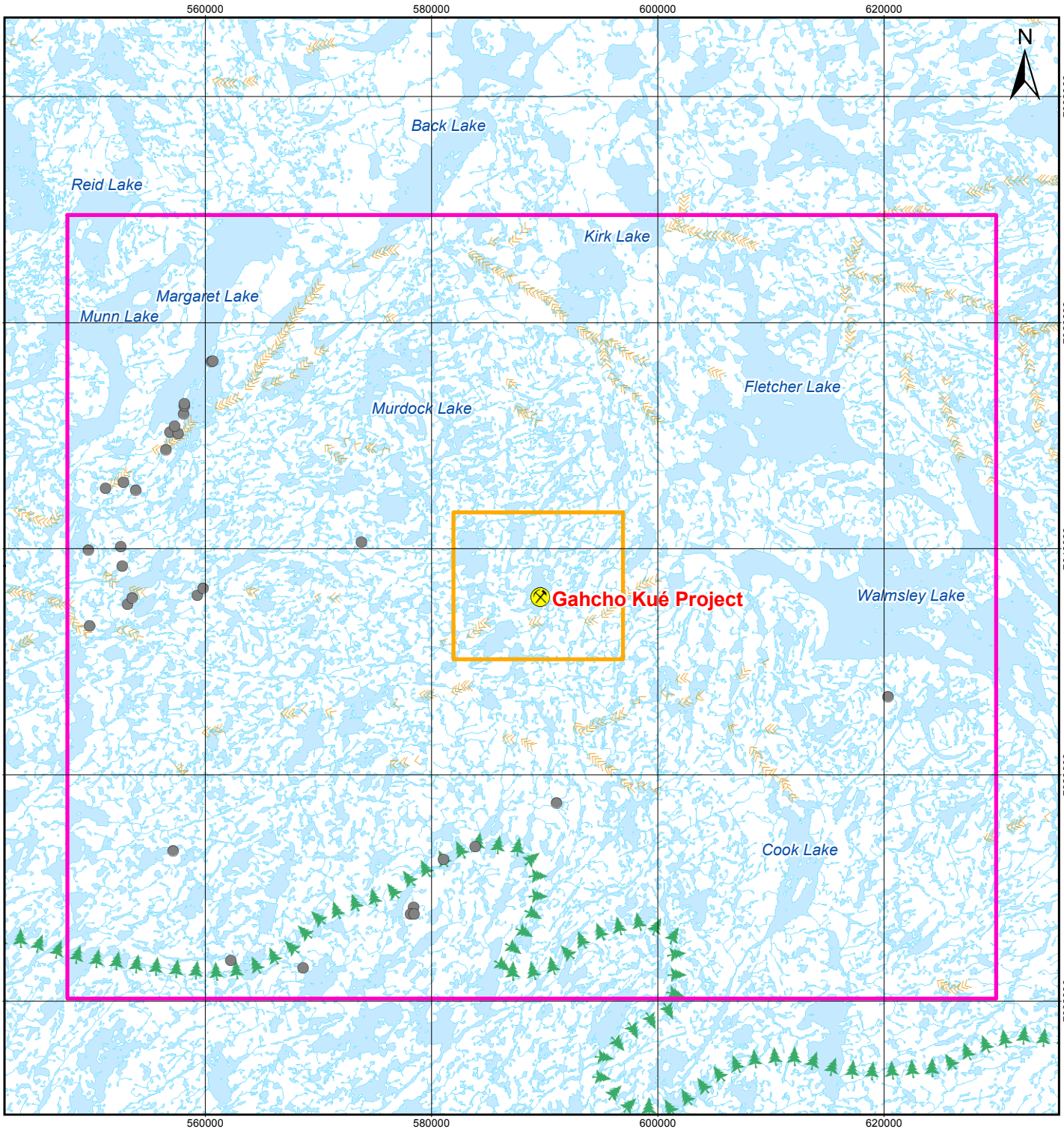
5.4 RAPTORS

Raptors are birds of prey and include falcons, eagles, hawks, and owls. Raptor species observed nesting within the Project RSA include peregrine falcon (likely the *tundris* subspecies), gyrfalcon, rough-legged hawk, and short-eared owl. The nearest active raptor nest site is 18 km from the proposed mine site, and the Project is predicted to have no significant effect on raptors (De Beers 2010).

The peregrine falcon and the short-eared owl are considered species at risk (Appendix B). Peregrine falcon is scheduled for assessment by the Northwest Territories Species at Risk Committee in December 2016 and short-eared owl has not been scheduled for assessment through 2017 (NWT SARC 2012). Mitigation, and raptor interactions and mortalities at the Project will be monitored through site surveillance monitoring (Section 4), and will include surveys for raptor nesting activity within the Project site. Any reports or observations of raptor nesting activity on Project structures or within open pits will be documented and reported. In these cases, the follow-up action will be determined in consultation with ENR, and will consider any hazards to the nest. Ideally, the nest will be allowed to remain intact and Project staff will be requested to avoid disturbing the nest.

De Beers will contribute nest survey data to the North American Peregrine Falcon Survey. Nest sites will be surveyed by helicopter using standard fly-by methods to identify occupying species and to count eggs and young. Surveys will be completed during late May or early June to determine occupancy, and during mid to late July to determine nest success and productivity. Nests will be considered occupied if at least one adult bird is observed. Nests will be recorded as successful if at least one chick is observed in the nest. The presence of eggs and chicks will be noted, and the number of eggs and chicks will be recorded, if possible. Raptor nest monitoring data may be made available to ENR for regional monitoring purposes, or to the North American Peregrine Falcon survey, which occurs every five years (next scheduled for 2015). The survey area will not be limited to the Project RSA, but will also include raptor nests in the Snap Lake Mine RSA, and any known nests between these two areas.



LEGEND

- Gahcho Kué Project
- Watercourse
- Waterbody
- Esker
- Treeline
- Raptor Nest
- Project Local Study Area
- Project Regional Study Area

NOTES

Base data source: National Topographic Base Data (NTDB) 1:250,000

GAHCHO KUÉ PROJECT

Raptor Nests in the Project Regional Study Area

PROJECTION: UTM Zone 12	DATUM: NAD83	De Beers Canada
Scale: 1:500,000 — 10 5 0 10 Kilometres		
FILE No: B2011-Wild-015-GIS		DATE: September 21, 2012
JOB NO: 11-1365-0001	REVISION NO: 1	Figure 5-5
OFFICE: GOLD-CAL	DRAWN: DC / CHECK: JV	

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5.4.1 Small Mammal Monitoring

De Beers will undertake monitoring of small mammals (including lemmings and voles). Although not a WMP component or related to an impact prediction, this program would fill a regional data gap in ecosystem monitoring by ENR and responds to the TK input from the WMP workshop recommending that the monitoring approach be holistic and consider the ecosystem. Small mammal populations cycle, and these cycles influence the reproductive success of raptors and fox, and other components of the arctic ecosystem. The nearest small mammal monitoring location is at the Daring Lake research facility, operated by ENR.

5.5 UPLAND BIRDS

Upland birds (including shorebirds and songbirds) are found in low densities in the central Canadian Arctic. Past monitoring at the Ekati Diamond Mine found limited effects within 1 km on the upland bird community, and no measurable effect on the reproductive success of Lapland longspurs (Male and Nol 2005; Smith et al. 2005). Mitigation, and upland bird interactions and mortalities at the Project will be monitored through site surveillance monitoring (Section 4).

Monitoring for population trends during the operating life of the Project would fill existing information gaps in the N7 Bird Conservation Region. Therefore, the objective of monitoring for upland birds will be:

- To detect changes in regional bird populations over time.

Monitoring can be accomplished through a standard technique for surveying shorebirds, the Program for Regional and International Shorebird Monitoring, which includes Environment Canada's rapid survey approach (CWS 2008). The rapid survey approach includes ground-based surveys of 12 ha plots completed by two staff to record species encountered and habitat conditions. This type of survey provides 100% coverage of the sampled plot. The location and number of plots to meet the monitoring objective will be determined with input from Environment Canada.

6 REPORTING AND ADAPTIVE MANAGEMENT

The WMP is a component of the larger framework of the Adaptive Management Response Framework, a concept described in the EMMF (De Beers 2012a). The exact definition of adaptive management varies among monitoring components, but typically adheres to having four themes as follows (WLWB 2010):

1) learning to reduce management uncertainties;
2) using what is learned to change policy and practice;
3) focusing on improving management; and
4) doing the above in a formal, structured and systematic way.

The Adaptive Management Response Framework will be implemented collaboratively by an Adaptive Management Committee (AMC) coordinated by De Beers. The committee will be responsible for reviewing monitoring reports and providing input on areas of study and management actions. The draft Terms of Reference for the AMC were submitted to the public registry on June 29, 2012.

Each year, a monitoring report will be completed by De Beers for review by the AMC. The annual report will contain a summary of methods, current data collected, results and a record of wildlife observations, interactions, deterrent actions, and incidents (including mortalities). The report will also suggest changes for future years, if required. The report will describe contributions to the Bathurst Caribou Management Plan, and ENR would be asked to report on outcomes of the Bathurst Caribou Management Plan and other regional and species management initiatives for a given year. Other federal departments, such as Aboriginal Affairs and Northern Development Canada and Environment Canada, with responsibilities for cumulative effects monitoring or wildlife would also be asked to present their activities for a given year to the AMC. Where Traditional Knowledge studies are undertaken, communities would be asked to share as well. Aboriginal group representatives would be responsible for sharing AMC meeting outcomes with their communities and participate in community engagement activities undertaken by De Beers in their communities. This approach would dramatically improve communication and understanding between groups over the life of the Project.

Due to the large degree of natural variation inherent in ecosystems, it is often difficult to detect effects on caribou distribution and behaviour until several years of data have been collected. Therefore, a comprehensive analysis and discussion of all caribou data and other relevant data from the monitoring

program could be completed every 3 to 5 years. The comprehensive report will provide a review of data collected, an assessment of effects that are detected, an assessment of the effectiveness of mitigation, and recommendations for future monitoring for the AMC to consider.

If changes to wildlife are determined to be greater than the predictions in the EIS, or if monitoring of the Project operation identifies potential hazards to wildlife, then the options available to De Beers include the following:

- modify the monitoring effort to verify confidence in the observed trends;
- implement new monitoring programs or special studies (i.e., studies that occur outside the scope of the WMP and have defined (shorter) timeline) to further understand the effects; or
- implement additional mitigation to reduce the effects.

7 REFERENCES

BHPB (BHP Billiton Canada Inc.). 2010. Ekati Diamond Mine 2009 Wildlife Effects Monitoring Program. Prepared by Rescan Environmental Services Ltd. for BHP Billiton Diamonds Inc. March 2010.

BHPB. 2011. Ekati Diamond Mine 2010 Wildlife Effects Monitoring Program. Prepared by Rescan Environmental Services Ltd. for BHP Billiton Diamonds Inc. March 2011.

Boulanger, J. and R. Mulders. 2008. Analysis of 2005 and 2006 wolverine DNA mark-recapture sampling at Daring Lake, Ekati, Diavik, and Kennady Lake, Northwest Territories. Prepared by Integrated Ecological Research, Nelson, BC.

Boulanger, J, K.G. Poole, A. Gunn, and J. Wierzchowski. 2012. Estimating the zone of influence of industrial developments on wildlife: a migratory caribou and diamond mine case study. Wildlife Biology 18:164-179.

Chapin, F.S., G. Peterson, F. Berkes, T.V. Callaghan, P. Angelstam, M. Apps, C. Beier, Y. Bergeron, A.S. Crépin, K. Danell, T. Elmqvist, C. Folke, B. Forbes, N. Fresco, G. Juday. J. Niemelä, A. Shvidenko, and G. Whiteman. 2004. Resilience and vulnerability of northern regions to social and environmental change. Ambio 33:344-349.

CWS (Canadian Wildlife Service). 2008. 2008 Program for Regional and International Shorebird Monitoring (PRISM) Field Manual. Yellowknife, NWT.

DDMI (Diavik Diamond Mine Inc.). 2010. 2009 Wildlife Monitoring Program. Prepared by Diavik Diamond Mines Inc. April 2010.

De Beers (De Beers Canada Inc.). 2004. Snap Lake Diamond Project: Wildlife Effects Monitoring Program. Prepared for De Beers Canada Inc. by Golder Associates Ltd.

De Beers. 2007. Snap Lake Project: Wildlife Management Plan. Prepared for De Beers Canada Inc. by Golder Associates Ltd.

De Beers. 2008. Snap Lake Mine: Analysis of Environmental Effects on Wildlife 1999 to 2007. Prepared for De Beers Canada Inc. by Golder Associates Ltd.

De Beers. 2010. *Environmental Impact Statement for the Gahcho Kué Project.* Volumes 1, 2, 3a, 3b, 4, 5, 6a, 6b, 7 and Annexes A through N. Submitted to Mackenzie Valley Environmental Impact Review Board. December 2010.

De Beers. 2012a. Environmental Monitoring & Management Framework. De Beers Canada Gahcho Kué Project. Submitted to Mackenzie Valley Environmental Impact Review Board. May 2012.

De Beers. 2012b. Report of a meeting with De Beers and representatives of interested parties regarding caribou monitoring. June 1, 2012. Available at http://www.reviewboard.ca/upload/project_document/EIR0607-001_Meeting_Record_on_Wildlife_Monitoring_Plan_May_25__2012.PDF

De Beers. 2012c. Gahcho Kué Project – Draft Conceptual Caribou Monitoring Plan, Version 2. Submitted to the Wildlife Monitoring Plan Working Group August, 2012.

De Beers. 2012d. Government Northwest Territories - Information Request Responses – Gahcho Kué Project Environmental Impact Review. Submitted to Mackenzie Valley Environmental Impact Review Board. April 2012.

De Beers (De Beers Canada Inc.). 2012e. Yellowknives Dene First Nation Round 2 Information Request Responses – Gahcho Kué Project Environmental Impact Review. Submitted to Mackenzie Valley Environmental Impact Review Board. September 2012.

ENR (Government of the Northwest Territories, Department of Environment and Natural Resources). 2011. Caribou Forever – Our Heritage, Our Responsibility. A Barren-ground Caribou Management Strategy for the Northwest Territories 2011-2015. Published by the Government of the Northwest Territories, Department of Environment and Natural Resources.

Folke, C., S.R. Carpenter, B.H. Walker, M. Scheffer, T. Elmqvist, L. Gunderson, and C.S. Holling. 2004. Regime shifts, resilience, and biodiversity in ecosystem management. Annual Review of Ecology and Evolutionary Systematics 35:557-581.

Gahcho Kué Panel. 2007. Terms of Reference for the Gahcho Kué Environmental Impact Statement. Mackenzie Valley Environmental Impact Review Board. Yellowknife, NWT.

GNWT (Government of the Northwest Territories). 2010. Species at Risk Act (NWT). S.N.W.T. 2009, c.16. Yellowknife, NWT.

Golder (Golder Associates Ltd.). 2011. Analysis of Environmental Effects from the Diavik Diamond Mine on Wildlife in the Lac de Gras Region. Prepared for Diavik Diamond Mines Inc. Yellowknife, NWT.

Handley J. 2010. Diamond Mine Wildlife Monitoring Workshop Report. Prepared for Environment and Natural Resources. Yellowknife, NWT.

IMG-Golder Corp. 2008. Standardized protocols for collection of monitoring information for the NWT cumulative impact monitoring program working group and valued components advisory teams. Prepared for Indian and Northern Affairs Canada.

Johnson C. J., M. S. Boyce, R. L. Case, D.H. Cluff, R. J. Gau, A. Gunn, and R. Mulders. 2005. Cumulative Effects of Human Developments on Arctic Wildlife. Wildlife Monograph No. 160. The Wildlife Society.

Kavik-AXYS Inc. 2008. Data collection protocols for the Northwest Territories cumulative impact monitoring program. Valued Components: Caribou Fish Habitat, Population & Harvest Water & Sediment Quality. Prepared for: Indian and Northern Affairs Canada.

Male, S.K. and E. Nol. 2005. Impacts of Roads Associated with the Ekati Diamond MineTM, Northwest Territories, Canada, on Reproductive Success and Breeding Habitat of Lapland Longspurs. Canadian Journal of Zoology 83: 1286-1296.

Marshall, R. 2009. Diamond mine wildlife monitoring workshop report. Prepared by Rob Marshall for Diavik Diamond Mines Inc.

McLellan, B. N. 1990. Relationships between human industrial activity and grizzly bears. International Conference on Bear Research and Management 8:57-64.

Mulders, R., J. Boulanger, and D. Paetkau. 2007. Estimation of population size for wolverines Gulo gulo at Daring Lake, Northwest Territories, using DNA based marck-recapture. Wildlife Biology 13:38-51.

MVEIRB (Mackenzie Valley Environmental Impact Review Board). 2006. Reasons for Decision and Report on Environmental Assessment for De Beers Gahcho Kué Diamond Mine, Kennady Lake, NWT. Mackenzie Valley Environmental Impact Review Board, June 28, 2006, Yellowknife, NWT.

MVEIRB (Mackenzie Valley Environmental Impact Review Board). 2010. Guidelines for considering wildlife species at risk in environmental impact assessment in the Mackenzie Valley. Yellowknife, NWT.

NWTSARC (Northwest Territories Species At Risk Committee). 2012. Approved Assessment Schedule for 2012 – 2017. Government of the Northwest Territories Website, http:// http://nwtspeciesatrisk.ca/tiki/tiki-index.php?page=SARC. Accessed 21 September 2012.

Rescan. 2012. Joint Regional Grizzly Bear DNA Proposal, 2012. Prepared for BHP Billiton Canada Inc., De Beers Canada Inc., and Rio Tinto Canada. Vancouver, BC.

Smith, A.C., J.A. Virgl, D. Panayi, and A. R. Armstrong. 2005. Effects of a Diamond Mine on Tundra-breeding Birds. Arctic 58(3): 295-304.

SRPR (Species at Risk Public Registry). 2012. Website, http://www.sararegistry.gc.ca. Accessed 21 September 2012.

Tahera (Tahera Diamond Corporation). 2005. Proposed Wildlife Mitigation and Monitoring Plan for the Jericho Diamond Project. Prepared for the Tahera Diamond Corporation by Golder Associates Ltd.

Wiens, J.A. 1989. Spatial scaling in ecology. Functional Ecology. 3:385-397.

WLWB (Wek'eezhı`i Land and Water Board). 2010. Guidelines for adaptive management - a response framework for aquatic effects monitoring. Yellowknife, NT, Wek'eezhı`i Land and Water Board.

8 ACRONYMS AND GLOSSARY

8.1 ACRONYMS AND ABBREVIATIONS

AMC	Adaptive Management Committee
CWS	Canadian Wildlife Service
De Beers	De Beers Canada Inc.
DNA	deoxyribonucleic acid
EIS	Environmental Impact Statement
EMMF	Environmental Monitoring and Management Framework
ENR	Government of the Northwest Territories, Department of Environment and Natural Resources
GNWT	Government of the Northwest Territories
ha	hectares
km	kilometres
km^2	square kilometres
LSA	local study area
MVEIRB	Mackenzie Valley Environmental Impact Review Board
NWT	Northwest Territories
PK	processed kimberlite
PKC	processed kimberlite containment
Project	Gahcho Kué Project
RSA	regional study area
TK	Traditional Knowledge
VC	valued component
WLWB	Wek'èezhii Land and Water Board
WMP	Wildlife Monitoring Plan
ZOI	Zone of Influence

8.2 GLOSSARY

Adaptive Management	The exact definition of adaptive management varies among monitoring components, but typically adheres to having four themes as follows (WLWB 2010): 1) learning in order to reduce management uncertainties; 2) using what is learned to change policy and practice; 3) focusing on improving management; and 4) doing the above in a formal, structured and systematic way.

Effects Pathways	Interactions between the Project and the environment. For example, the possible effects of dust on vegetation is considered to be a pathway.
Effects Predictions	Predictions of the degree of environmental effect that may result from each effects pathway. The degree of the effect considers magnitude (strength), duration (length of time) and geographic extent (distance or area). Derived from the analysis and assessment in the EIS.
General Pathways	A term used to describe the broad categories of similar effects pathways
Monitoring Components	A term used to broadly describe the aspect of the environment and population that may be impacted and monitored. Monitoring components used here included: Habitat Caribou and other wildlife VCs People
Monitoring Themes	A term used to describe the broad categories of possible wildlife monitoring. The monitoring themes used here included: habitat loss and alteration access direct mine-related mortality caribou and other wildlife health; change in distribution; change in behaviour; and change in survival and reproduction
Negligible	A change to the environment that is difficult to notice or measure when compared to natural changes
Terms of Reference	The document issued by the Mackenzie Valley Review Board Gahcho Kué Panel, which outlined the issues that De Beers must address in the environmental assessment.
ZOI	Zone of Influence. Defined as the area surrounding a development that changes the behaviour, movement and distribution of wildlife.

Appendix A

Materials from the Wildlife Monitoring Plan Working Group Meetings and Workshop

APPENDIX A

Wildlife Monitoring Plan Engagement

Working Group and Workshop Materials

Meeting Notes

May 25, 2012 Technical Session Break out meeting notes

DE BEERS
CANADA
GAHCHO KUÉ PROJECT

Meeting Report

June 1, 2012

Meeting Topic: De Beers Canada Inc Gahcho Kue Project, Wildlife Monitoring Plan

Meeting date: Friday May 25, 2012. 3pm – 5pm MST.

Meeting Location: ENR office Yellowknife

Attendees:

- Jan Adamczewski (ENR)
- Kim Poole (YKDFN Consultant)
- John Nish (Tlicho Government Consultant)
- Anne Gunn (MVEIRB Panel Consultant)
- Mike Tollis (LKDFN)
- Boyan Tracz (ANNDC, CIMP)
- Stephen Lines (De Beers)
- Damian Panayi (De Beers)
- Cameron Stevens (De Beers)

Summary of discussion:

The group discussion focused on the need for a collaborative, innovative and coordinated approach to monitoring, particularly with respect to caribou. The connection between the effects listed in the pathway analyses and monitoring objectives was emphasized, as well as making use of existing data. Some possible advantages and limitations of monitoring methods were also discussed. Attention focused on the rationale for specific monitoring such as verification of the Zone of Influence. A need to clarify and prioritize monitoring objectives for caribou was identified and could be achieved using the categories applied to classify residual effects. The need to design the monitoring programs included discussion of appropriate spatial and temporal scales in the sense of local and regional monitoring and that the latter included monitoring for cumulative effects. There was agreement on the value of initiating discussion on wildlife monitoring early in the EIR and regulatory process.

A DIVISION OF DE BEERS CANADA INC.
SUITE 300, 5102 – 50th AVENUE, YELLOWKNIFE, NT X1A 3S8
TEL: 1 (867) 766-7300 FAX: 1 (867) 766-7347
www.debeerscanada.com

De Beers commitment(s):

Commitments 10 to 14 from the Technical Session (MVEIRB correspondence dated May 29, 2012) as follows:

10. DeBeers is committed to using a collaborative approach – with communities and regulators – in developing the Wildlife Effects Monitoring Plan (WEMP).

11. DeBeers to commit to forming a working group – with communities and regulators – to develop a management framework for the WEMP, and hosting a workshop – mid to late September.

12. DeBeers to provide more detail on the WEMP prior to the workshop mentioned in previous commitment.

13. Regarding the Adaptive Management Advisory Committee proposal, DeBeers reiterates its existing commitment to develop monitoring programs that are effective, collaborative, and innovative, that will evolve over time. As part of this commitment DeBeers will be developing a Terms of Reference with input from participants to September 2012 workshop.

14. DeBeers is committed to providing ongoing capacity and resources to develop a TK monitoring program for life of mine

Outstanding issue(s) for De Beers:

- Linking predicted effects to detailed caribou monitoring objectives.

Action Items:

1. De Beers to prioritize monitoring objectives for caribou, and propose monitoring actions at regional and local scales. The outcome of which to be provided in conjunction with commitment #12 for information prior to the WMP.

2. In preparing the monitoring objectives, De Beers should consider each of the effects pathways identified in the EIS along with the effects classification, biological relevance, probability and consequence.

DE BEERS
CANADA
GAHCHO KUÉ PROJECT

The Meeting Record was circulated to the group for review and comment, with agreement that GNWT-ENR and De Beers would sign-off.

Signature of GNWT-ENR representative: _____
Jan Adamczewski

Signature of De Beers representative: _____
Stephen Lines

Date: June 1, 2012

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SUITE 300, 5102 – 50th AVENUE, YELLOWKNIFE, NT X1A 3S8
TEL: 1 (867) 766-7300 FAX: 1 (867) 766-7347
www.debeerscanada.com

Invitation Letters to Participate in the WMP Working Group

June 15, 2012

DE BEERS
CANADA
GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Chuck Hubert
Senior Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
P.O. Box 938
Yellowknife NT X1A 2N7

Dear Mr. Hubert:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

As you are aware from the Technical Sessions held May 22 to 25, 2012, a Wildlife Monitoring Plan Working Group (Working Group) is to be established to meet Commitment #11 made by De Beers Canada Inc (De Beers):

> De Beers to commit to forming a working group – with the communities and regulators – to develop a management framework for the WEMP, and hosting a workshop – mid to late September.

As a precursor to the Working Group, parties including De Beers, Aboriginal representatives, Government of the Northwest Territories Environment and Natural Resources, Aboriginal Affairs and Northern Development Canada, and Panel Advisor met immediately following the wildlife technical discussions (May 25, 2012) to continue the conversation regarding a collaborative opportunity to develop a Wildlife Monitoring Plan (WMP) for the Gahcho Kué Project. The outcome of that meeting was recorded and posted to the Public Registry by the Panel on June 4, 2012.

The May 25, 2012 meeting was the beginning of productive discussions on wildlife monitoring perspectives, particularly in the key area of caribou. To further advance those discussions in a timely manner during the Environmental Impact Review (EIR) process, De Beers recommends that the participants of the May 25, 2012 meeting form a focused and effective Working Group that is representative of the various interests, and meets the intent of Commitment #11.

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Yours truly,

Stephen Lines
Superintendent, EA & Permitting

DE BEERS
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June 15, 2012 File: S110

Mike Tollis
Lands & Wildlife Manager
Lutsel K'e Dene First Nation
P.O. Box 28
Lutsel K'e NT X0E 1A0

Dear Mr. Tollis:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

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Stephen Lines
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c: C. Hubert, Senior Environmental Assessment Officer, MVEIRB

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June 15, 2012 File: S110

Todd Slack
Research & Regulatory Specialist
Yellowknives Dene First Nation
Land & Environment
P.O. Box 2514
Yellowknife NT X1A 2P8

Dear Mr. Slack:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

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Stephen Lines
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GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Rosy Bjornson
IMA Coordinator
Deninu Kué First Nation
P.O. Box 1899
Ft. Resolution NT X0E 0M0

Dear Ms. Bjornson:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

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Stephen Lines
Superintendent, EA & Permitting

c: C. Hubert, Senior Environmental Assessment Officer, MVEIRB

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GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Kerri Garner
A/Director, Lands Protection
Tlicho Government
Bag 5
Behchoko NT X0E 0Y0

Dear Ms. Garner:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

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Stephen Lines
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GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Sheryl Grieve
Manager, Lands
North Slave Métis Alliance
P.O. Box 2301
Yellowknife NT X1A 2P7

Dear Ms. Grieve:

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Stephen Lines
Superintendent, EA & Permitting

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DE BEERS
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GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Tim Heron
IMA Coordinator
NWT Métis Nation
P.O. Box 720
Ft. Smith NT X0E 0P0

Dear Mr. Heron:

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CANADA
GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Jan Adamczewski
Wildlife Biologist, Ungulates
Environment & Natural Resources
Government of the NWT
P.O. Box 1320
Yellowknife NT X1A 2L9

Dear Mr. Adamczewski:

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Superintendent, EA & Permitting

c: C. Hubert, Senior Environmental Assessment Officer, MVEIRB
L. Ransom, Environmental Assessment Analyst, ENR, GNWT

DE BEERS
CANADA
GAHCHO KUÉ PROJECT

June 15, 2012 File: S110

Boyan Tracz
CIMP Advisor
Cumulative Impact Monitoring Program (CIMP)
Aboriginal Affairs & Northern Development Canada
P.O. Box 1500
Yellowknife NT X1A 2R3

Dear Mr. Tracz:

Gahcho Kue Project Wildlife Monitoring Plan Working Group

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Yours truly,

Stephen Lines
Superintendent, EA & Permitting

c: C. Hubert, Senior Environmental Assessment Officer, MVEIRB

From: Lines, Stephen
To: Hodson,James [Yel]
Subject: working group meeting Sept 5
Date: August-27-12 11:33:00 AM
Attachments: 120821-WMP_WG_Meeting 2 draft details.pdf

Hi James,
As you may know the next working group meeting for the Gahcho Kue project wildlife monitoring plan development is Sept 5.

We have two hours to talk about birds. I'm wondering if you or Craig will participate?

Whoever attends for EC, I'm wondering if they could put a few slides together on the upland bird PRISM methods and national program as well as the North American Peregrine Falcon Survey and how the data is used by EC.

Let me know if that can be done, I think it would be helpful to the group.

I'll be sending out the meeting materials today.

Regards,

Stephen Lines P.Biol., M.Sc.
Superintendent, Environmental Assessment & Permitting
Gahcho Kué Project
De Beers Canada Inc.
Suite 300, 5102 -50th Ave
Yellowknife, NT, X1A 3S8
Tel: 867-766-7352
Cell: 867-445-8129
Fax: 867-766-7347
stephen.lines@debeerscanada.com
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July 9, 2012 File: S110

Chuck Hubert, MVEIRB
Loretta Ransom, GNWT
Boyan Tracz, AANDC
Rosy Bjornson, DKFN
Mike Tollis, LKDFN
Sheryl Grive, NSMA
Tim Heron, NWTMN
Kerry Garner, Tlicho Government
Todd Slack, YKDFN

Dear Parties,

Re: Gahcho Kué Project Wildlife Monitoring Plan Working Group

In follow-up to the De Beers Canada Inc. (De Beers) letter dated June 14, 2012 inviting interested parties to participate in a Wildlife Monitoring Plan (WMP) Working Group for the proposed Gahcho Kué Project, De Beers is pleased to advise that all contacted parties have responded positively regarding their participation in this initiative. The following groups have indicated that they would like to provide a representative for the Working Group:

- Aboriginal Affairs and Northern Development Canada
- Government of the Northwest Territories – Environment and Natural Resources
- Mackenzie Valley Environmental Impact Review Board Panel
- Lutsel K'e Dene First Nation (LKDFN)
- Yellowknives Dene First Nation (YKDFN)
- Deninu Kue First Nation (DKFN)
- Tlicho Government
- North Slave Métis Alliance (NSMA)
- NWT Métis Nation

Those Aboriginal groups that have expressed an interest to participate have also noted that the balance of their intervener funding was insufficient to allow for their meaningful participation in the Working

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Group meetings and September WMP Workshop. De Beers views input from the Aboriginal groups as key to the development of the WMP, and is therefore prepared to provide additional capacity funding in the amount of $5,000 for each Aboriginal group to ensure the timely development of a draft WMP. This capacity funding is provided to support the participation of one representative from each of the Aboriginal Groups listed above at two WMP Working Group meetings and the Workshop, including time to review meeting materials. Additional funding will be provided to allow each Aboriginal group to send two additional community representatives to the September 2012 Workshop.

The purpose of the WMP Working Group is to review, discuss and provide recommendations on the wildlife monitoring programs in advance of a September 2012 Workshop. The WMP Working Group discussions are expected to be technical and as such it is recommended that participants have an appropriate level of technical expertise. The purpose of the September 2012 Workshop will be to present the wildlife monitoring recommendations collaboratively developed by the Working Group to interested parties so that additional input/feedback may be incorporated into the draft WMP prior to submission to the MVEIRB Public Registry.

To facilitate the Working Group's activities in a timely manner in preparation for the September WMP Workshop, attached are proposed dates for the first Working Group meeting along with a draft agenda.

At this time De Beers is preparing the following meeting materials, to be circulated to the Working Group at least ten days prior to the first meeting:

- Conceptual Caribou Monitoring Plan
- Draft Site Surveillance Monitoring Plan

It is anticipated that Working Group meetings will be topic specific to maintain focus. Working Group meeting #1 will focus on the Working Group's objectives, caribou and site surveillance monitoring. Working Group meeting #2 will be topic specific to address carnivores and birds or other areas of wildlife monitoring identified by the Working Group in the first meeting.

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As a reminder, the purpose of the Working Group is to collaborate and provide input to De Beers on the development of a draft WMP for presentation at the September Workshop. To clarify, the September Workshop will be open to a broader audience to provide recommendations and gather additional input before finalizing the draft WMP for submission to the MVEIRB Public Registry for the Panel's consideration.

Please respond regarding the preferred meetings dates listed below and comments on the agenda to De Beers by **July 17, 2012**. De Beers welcomes the Working Group participants and looks forward to productive discussions.

Yours truly,

Stephen Lines
Superintendent, Environmental Assessment & Permitting

attached: Working Group draft agenda and proposed dates for meeting #1

cc: James Hodson, Environment Canada - CWS

Gahcho Kué Project
Wildlife Monitoring Plan Working Group
Meeting #1
Proposed Meeting Dates & Draft Agenda

Proposed Meeting Dates

- Option 1: Tuesday, August 7, 2012
- Option 2: Thursday, August 2, 2012

Draft Meeting Agenda

8:00 – 8:30 Coffee & tea

8:30 – 9:00 Working Group introductions and objectives

9:00 – 12:00 Conceptual Caribou Monitoring Plan Discussion

12:00 – 13:00 Lunch (provided by De Beers)

12:00 – 15:00 Conceptual Caribou Monitoring Plan Discussion

15:00 – 17:00 Site Surveillance Monitoring

17:00 – 17:30 Wrap up and planning for meeting #2

WMP Working Group Meeting # 1

Meeting Materials and Meeting Notes

August 7, 2012

DE BEERS
CANADA
GAHCHO KUÉ PROJECT

Wildlife Monitoring Plan Working Group
Meeting #1 Details

Meeting Date: August 7, 2012

Location: 5102 – 50th Ave Yellowknife, Scotia Building basement meeting room

Call in details: De Beers would prefer that the meeting take place in-person. In the event it is not possible for an individual representative to attend in person, alternative call in details are:

- Conference number: 1-877-217-1261
- Code: 5735164

Meeting Agenda:

8:00 – 8:30 Coffee & tea

8:30 – 9:00 Working Group introductions, objectives, confirmation of agenda

9:00 – 12:00 Conceptual Caribou Monitoring Plan Discussion

12:00 – 13:00 Lunch (provided by De Beers)

12:00 – 15:00 Conceptual Caribou Monitoring Plan Discussion

15:00 – 16:30 Site Surveillance Monitoring

16:30 – 17:00 Wrap up and planning for meeting #2 (carnivores, birds, other tbd)

A DIVISION OF DE BEERS CANADA INC.
SUITE 300, 5102 – 50th AVENUE, YELLOWKNIFE, NT X1A 3S8
TEL: 1 (867) 766-7350 FAX: 1 (867) 766-7351
www.debeerscanada.com

Gahcho Kué Project
Wildlife Monitoring Plan Working Group
Meeting 1: Aug 7, 2012

Background

- De Beers has taken the initiative to provide a draft WMP during the EIR process
- De Beers agreed to form a WMP working group following the technical session. Commitment #11
- De Beers is coordinating 2 working group meetings
  - Meeting 1 (Aug. 7): Caribou, site surveillance, next step
  - Meeting 2 (TBD): Carnivores, birds, workshop logistics
- De Beers also agreed to hold a WMP workshop to involve more people. Commitment #12.
  - September 2012, date TBD.

Participating Groups

- LKDFN
- DKFN
- YKDFN
- IMA Office
- NSMA
- NWT Metis
- Tlicho
- Panel
- INAC
- ENR
- De Beers

Meeting Etiquette

- Please do not place the call on hold if you need to step away; rather, please mute the call
- Please turn off or silence your cell phone
- Please DO participate, open discussion is welcomed
- Please DO NOT interrupt, wait for a natural pause and speak up, or signal to me that you want to speak
- Please be aware of monopolizing time and discussions – pause and check for feedback

Conceptual Caribou Monitoring Plan

De Beers May 25 Action Items:

- De Beers to prioritize monitoring objectives for caribou, and propose monitoring actions at regional and local scales. The outcome of which to be provided in conjunction with commitment #12 for information prior to the WMP.

- In preparing the monitoring objectives, De Beers should consider each of the effects pathways identified in the EIS along with the effects classification, biological relevance, probability and consequence.

Site Surveillance Monitoring Plan

- A key document for:
  - Monitoring wildlife interactions with the project
  - Assessing the effectiveness of mitigation measures
  - Preventing wildlife incidents
- Regular systematic checks
- Monitoring route to be developed following construction
- Location for winter road use reporting protocol
- Data entered into a database
- Reporting through the WMP annual report