

MEETING NOTES

Jay Project - Caribou Compensatory Mitigation

Boardroom of the Mackenzie Valley Environmental Impact Board

2nd floor of the Scotia Centre

Yellowknife, NT

October 1, 2015

In Attendance: Margaret Kralt (Dillon Consulting), Nadia Galati (Dillon Consulting), Rick Bargery (DDEC), Claudine Lee (DDEC), Harry O'Keefe (DDEC), Charles Klengenber (DDEC), Sjoerd van der Wielen (Tłı̄chǫ), John B. Zoe (Tłı̄chǫ), Dan Coulton (Golder), John Virgil (Golder), Kevin O'Reilly (IEMA), Bill Ross (IEMA), Kim Poole (IEMA), Peter Unger (LKDFN), August Enzo (LKDFN), Andrea Patenaude (GWNT – ENR), Dean Cluff (GWNT – ENR), Lorraine Seale (GWNT – Lands), Melissa Pink (GWNT – Lands), Luigi Torretti (KIA), Jared Ottenhoff (KIA), Shin Shiga (NSMA), Chuck Hubert (MVEIRB), Patrick Simon (DKFN), Alex Power (YKDFN), Randy Freeman (YKDFN), Lukas Novy (DDEC), Shawn McKay (FRMC)

By Phone: Karin Clark (GNWT – ENR) (morning only)
Steven Strawson (Golder)

Opening and Welcome (Facilitator)

The Compensatory Mitigation for Caribou workshop began at 9:10am; the Facilitator, Margaret Kralt with Dillon Consulting (Dillon), opened the meeting by introducing herself and inviting participants to introduce themselves and state their organization represented.

Rick Bargery of Dominion Diamond Ekati Corporation (DDEC) provided an overview and purpose of the workshop including:

- DDEC's commitment is to develop a compensatory mitigation plan after consultation so if the Jay Project goes through there is a plan in place.
- During community meetings and at the hearing, DDEC heard lots of ideas about what can go into that plan.
- Part of DDEC's concern has been that we didn't understand what we were committed to and how it would be measured against the Jay project – not a clear process in place.
- DDEC believes there is adequate mitigations in place to offset impacts
- Rick and Bill (IEMA) had a useful discussion about the Agency's perspective about offsetting and mitigation for the Jay Project and the Zone of Influence Technical Task Group (ZOITG).

The goal for this workshop is to understand the ideas of everyone here today and better understand how these ideas fit into a Compensatory Mitigation Plan, both technically and economically. Importantly, the objective must be to positively offsetting impacts to caribou. DDEC will take what happens today and come back on October 9th with a more thought out framework. We (DDEC) can put in place a plan but a big question is how do we measure how we are offsetting the impact and who is the referee? From DDEC's perspective it needs to be ENR as the manager of the herd. DDEC is committed to working on this issue over the a longer term but understands that measuring the impact is an important factor for future project developers to ensure the rules/best practices are more clearly defined from an ecological perspective. We take this process very seriously and have brought lots of folks here today who are dealing with this on a daily basis as we want to develop an effective plan.

What is "compensatory mitigation"?

Kim Poole: Can Golder and/or DDEC provide their take on what it is?

Rick Bargery: From our perspective we are trying to treat it as offsetting, specifically caribou habitat offsetting. The Jay Project's impact is small – but whatever that small impact is, we want to establish a plan that makes the impact neutral or even positive.

Harry O'Keefe: In the beginning DDEC did not commit to offsetting because it was difficult to measuring such a small impact. In the traditional sense of offsetting DDEC might not be able to measure the effect but is willing to try. DDEC might not be able to prove impact of offsetting but we recognize that it is important to try.

Kim Poole: Impacts from Jay were modelled, could be possible to use the model created to measure the impacts of different offsetting scenarios and then to see if some of the targets have actually been met.

Harry O'Keefe: DDEC is not saying they will not use the model, the key word is 'maybe.' Does the model have the power to measure the impact, maybe but at this time, it is not for sure.

Kim Poole: From a caribou point of view it is not tree planting/habitat offsetting only. IEMA believes that sensory disturbance should be considered. We are looking at ZOI and both on-site and off-site offsets.

Patrick Simon: Are we talking about modelling?

Harry O'Keefe: There are a lot of things DDEC is going to do; that's why we are here – we are trying to establish what we are going to do – what are the actions of the plan.

Rick Bargery: It is important to note, the Plan is not going to be perfect from day one. It is the hope that we can outline a suite of things: off-site, research, etc. it is a number of those things in combination that will make up the Compensatory Mitigation Plan. The measurement – we would like to discuss what it could look like at the beginning and what it could look like over time.

Kim Poole: Can we look more into the modelling?

Harry O'Keefe: We can but not today. Today's discussion is trying to determine what are things that will be done and how are we going to measure them.

Rick Bargery: It is important for DDEC that if the Jay project goes ahead we have a plan in place that meets set requirements.

Bill Ross: What DDEC has to commit to is to do enough to make the Bathurst herd better off. There are a 'suite of measures' but DDEC has to commit to the most productive measures and adapt the plan as it is implemented to make sure there is the right mix of measures at play. Because we don't understand the detailed mechanisms of what caribou avoid or not, the commitment must be to do enough not something that needs to be defined.

Claudine Lee/Harry O'Keefe: Yes, DDEC is on the same page.

Andrea Patenaude: ENR is going with the Business Biodiversity Offsets Programme definition of "measureable conservation outcomes of actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken. The measureable conservation outcomes. The biggest challenge is measurement; ENR wants to be clear on what things the project should be doing anyway and what is going above and beyond. We don't want to confuse something that should be going on anyway with respect to mitigation to be considered as part of this plan.

General Brainstorming - Ideas/options

Kim Poole: Want to ask if everyone is in agreement that offsetting can be on-site or off-site? What is the site? Ekati or Jay?

Bill Ross: From a cumulative effects perspective Jay is the Project, I would suggest that if you do off-setting at Ekati, not Jay that is cumulative effects mitigation. For me the project is Jay; the existing Ekati is part of a group of other developments.

Rick Bargery: DDEC does not see it don't see it as that perspective, internally we think of what can we do at Ekati to support the effects at Jay Project and therefore address any cumulative effect.

Kim Poole: The things that can be applied to Ekati and Jay, rather than farther away, will have more benefit in removing any negative residual impacts to caribou from the Jay Project.

John Virgil: I agree with that completely, how close you can come to address the negative impacts. DDEC has the ability to control what is happening at Ekati.

Peter Unger: The LKDFN have two major concerns

- 1) health of the Bathurst Herd;
- 2) our ability to practice our traditional lifestyles and harvest caribou

Are these concerns part of today's discussions?

Rick Bargery: It may be the best to have that discussion separately.

Peter Unger: Ok, just want to make sure that the discussion happens.

Bill Ross: As long as there are 19,000 caribou you are not able to harvest those animals that Lutsel K'e has traditionally been able to, we need to figure out a way to increase the herd's numbers so you can return to harvesting in a traditional sense.

Rick Bargery: It would be DDEC's intent to prepare options in the plan to help support work on research that supports the health of the caribou herd.

Kim Poole: There are many things you can do to manage the Bathurst herd. If Dominion provided funds for aircrafts to hunt predators that is not the kind of off-setting we are talking about or is that on the table? (Answer: no, not without see the photo).

Rick Bargery: If it is something that FN want to see it would have to be something that comes from the Bathurst Herd management body and is widely supported. What we can do is support gaps in research that currently exist that could contribute to the overall health of the herd.

Rick Bargery: Research is an important tool in the process and should be part of an overall plan. Does ENR have a wish list of things to look at if funding was available to help the Bathurst herd?

Andrea Patenaude: Internally ENR has been discussing options but need to sit down with DDEC to look at an actual process. Currently there is not list We are about to sit down and devise one and to evaluate where we are; went through a similar exercise a number of years ago identifying gaps. The gaps reported at Regional workshop in March 2015 and we are continuing to identify the gaps this month.

Karin Clark: There are a range of things to consider: one being predator management. Advancing our understanding of measuring mitigations for the future also needs to be considered.

Bill Ross: Research is not mitigation, the focus on research that advances understanding on how best to mitigate is important but it is still not mitigation. Action is what will help the Bathurst herd. The mitigation only comes from action that improves the life of the Bathurst caribou. The measure that DDEC commits to better not be solely research for research sake but rather research that advances how best to mitigate and then actually taking the steps to mitigate. If DDEC applies researched best practices to the Jay Project and then these are applied elsewhere then that is cumulative effects mitigation. If you are dealing with cumulative effects of caribou you have to think like a caribou.

Rick Bargery: That's why we are here; dust has been thought of for some time as having an effect on vegetation/taste, etc. An option could be a pilot project that researches dust, measures over a specific range and then applies findings.

Claudine Lee: DDEC has already started testing a small portion of the Ekati road with EnviroKleen which has been deemed as safe for the environment. DDEC is actively researching EnviroKleen as manufacturers often say things work in the north but that is not always the case. DDEC still evaluating how EnviroKleen has worked; evaluating if the road continues to be maintained well. Things are looking pretty good for what we have tested, the product has been used on site before and people are familiar with it and we are looking to expand its use, currently 3-5km of road surface is being tested. The EK35 (Boeing approved for use on airport runways) and EnviroKleen are almost the same product.

Kim Poole: IEMA has images of 737's landing with huge plumes, can you speak to that? (answer: no, not without seeing the photo).

Harry O'Keefe: There are peak seasons for dust suppression.

Claudine Lee: The use of EnviroKleen is something that can be expanded and it is an option that can be tested and is measureable. This is something DDEC is committed to doing. Is EnviroKleen something suitable to use at Ekati? It is useful to reduce dust? – we are at a place where DDEC can say 'Yes' and full results coming out in a report this fall. DDEC can look at the product being used on a larger scale, this is how it works; and see if it can be applied to a larger context at Ekati and how it could be applied to the Jay Project. DDEC does want to look into if it is safe for caribou on a larger scale both onsite at Jay and off-site at Ekati – willing to share data as a best practice both internally and share with others (Diavik, DeBeers). DDEC is open to sharing what we are regarding management plans/operating plans on site so that others can see what we are already doing and growing pains in an effort to prevent the same mistakes but rather encourage best practices.

Harry O'Keefe: Approval of EnviroKleen use is out of our control. Lands Department has to give approval for larger use.

Claudine Lee: It is endorsed by EPA in US and approved in Quebec; not something that is going to be successful in the short-term (EnviroKleen).

Bill Ross: Remembers when DL10 was approved to use on roads and the GWNT was not immediately supportive of product – big picture: controlling dust; smaller picture: niceties? Does Lands and GWNT need to be now involved in this conversation?

Harry O'Keefe: Lots of solutions are often rushed when they are untested. DDEC is not interested in experiencing a similar situation here.

Bill Ross: Have you been collecting water samples to see if there are impacts nearby?

Claudine Lee: Yes. This program will end with snow on the ground as dust won't be kicking up as much, information will be fed back at that point. The responsibility to approve use of EnviroKleen is up to regulatory bodies issuing land use permits. We need to help them feel confident by working with manufacturer and lands groups to prove that the product is safe and not going to cause widespread disaster. ENR does not necessarily have the capacity right now to take on the review or supportive of other types of products.

Bill Ross: With respect to dust DDEC needs to be **more** vigilant in controlling dust. It seems to me that whatever it is that you do, maybe you should do it more often to exercise more control over dust. In some sense this is both a real measure based on the expectation that dust is a substantial driver of ZOI; so it maybe that better control of dust should reduce the ZOI; which means that if you what to demonstrate that it is an effective measure you have been adopting than you will need to re-determine the ZOI.

Alex Power: Without control what is done is not research. We need to have good info on ZOI now as well as later; how robust is this definition? Is it reliable? Why isn't there more monitoring? The link between research and compensatory mitigation has to be clearer. Need to do the research before widespread action and follow it up by monitoring if it is having the effect you want it to have. As best as possible you have to try to know the effect of any mitigation effect has had or not had.

Kim Poole: Control can be the last 18 years (prior to use of EnviroKleen or other measures). The end point is dust measurements and a change in the distribution and numbers of the caribou. The outcome is the measureable dust which DDEC is measuring and they could then measure the ZOI to see if it is smaller or less strong.

Alex Power: There seem to be multiple steps which need to be explicitly linked.

Claudine Lee: That of course will be part of the methodology.

Harry O'Keefe: This has to feed into the mitigation plan, at least with dust we can measure a change. With ZOI you might be able to measure some change but that does not mean we will come out with a real result.

Break

Rick Bargery: Anything else from IEMA about pilot projects?

Bill Ross: We have ideas but in the past you have typically rejected those ideas

Rick Bargery: Today is about ideas. We might not take all ideas but it is an opportunity to put ideas on the table.

Bill Ross: The esker crossing has been of concern because it will have an adverse effect on the Bathurst herd. IEMA are not convinced that the effects have been fully analyzed with respect to the impacts on the herd. IEMA put it on the table for undertaking under No.9; IEMA doesn't think it has been fully considered to the degree IEMA would like to see.

Kim Poole: At the site scale dust is one thing; sensory disturbance is paramount when caribou are there. If more was being done at Jay and transferred to Ekati that would be both on-site mitigation and off-site mitigation. IEMA ideas have been laid out in our response to Undertaking #9.

Rick Bargery: DDEC can look at that and how it will be considered in the Caribou Roads Mitigation Plan. What can we do at Jay in CRMP or Wildlife and Wildlife Habitat Protection Plan (WWHPP) and Ekati to meet an offsetting test?

Bill Ross: If you use mitigation on the other sites; then the CRMP would be off-setting. The key in the CRMP is to make it more stringent. IEMA has proposed measures that went further because the Bathurst Herd is in such tough shape and it is worth going further as specific action at specific times of year might not be costly to DDEC and could be beneficial to the caribou.

Rick Bargery: We are seriously looking into IEMA's recommendations and we will look at what is applicable to Jay and to the entire mine.

Claudine Lee: That is always something DDEC are looking at – how it applies throughout the entire mine.

Rick Bargery: Throughout the summer (2015) there has been engagement on the CRMP and what is operationally feasible. DDEC is prepared to look at the CRMP one more time and also share with other operations who may choose to take on some of those best practices as well.

Bill Ross: I know DDEC cannot commit for DeBeers and Diavik but there are some activities with which you (mining companies) are all involved in:

- The ZOI TTG are creating ideas and understandings of ZOI with the view of reducing the ZOI.
- That may be a specific tool for all mining companies to learn how to improve the life of the Bathurst caribou.
- Reducing ZOI is a means of offsetting that could be quite productive and hopeful.

DDEC could get letters of support from other mining companies to commit.

Rick Bargery/Harry O'Keefe: It might be challenging to get letters of support. DDEC committed to bringing things to the ZOI TTG.

Bill Ross: DeBeers and Diavik may not be unwilling to commit.

Andrea Patenaude ZOI TTG is just that, a task group. Its task was to answer two specific questions:

- First: when and how monitoring ZOI should be conducted. What kind of conditions of caribou abundance will give you a good enough sample size to make analysis possible– we are getting there with respect to sample size, DDEC has committed to use what comes out of ZOI TTG to inform their practices.
- Second: where are we with respect to figuring out potential mechanisms of ZOI. When the group first sat down, we thought we might try to come up with a list of recommendations to guide research into mechanism, but we quickly realized that this is not a task, but a major undertaking. If a researcher or a group wants to go further with this question, what the task group provided could be considered a good starting point.

Anything we want to shuttle to ZOI TTG will require a re-envisioning of its scope, composition and mandate beyond what it was originally set up for and will require a new commitment from participants. For instance, Diavik is not on the ZOI TTG. ENR is not opposed to tackling answering these questions but we need support: academic partnerships; industrial partnerships; etc. IEMA asked for a timeline on the research answer. But because of the complexity of the question there is no guarantee that any group tackling it can come to an answer by a specific time. Putting timelines on complex research questions is not necessarily an effective approach.

Randy Freeman: Traditional Knowledge is observation of many, many, many, years. Knowledge that is passed on through

generations. It is a difficult process to tease the traditional knowledge from Elders. To not incorporate generational observation and understanding/Traditional Knowledge – the where, when, why, and how – is to ignore that as part of the base information to do base scientific research from. Is Traditional Knowledge more valuable or less valuable? Some Elders have said that based on what they were told by their grandfathers herd sizes have always gone up and down. Traditional Knowledge study needs to be a research component in the plan.

Rick Bargery: Traditional knowledge monitoring of herd has taken place with John B Zoe and Elders of Tłı̨chq̓ around another mine and the other groups..

Randy Freeman: Each First Nation has to come forward with its own Traditional Knowledge.

Rick Bargery: DDEC is open to ideas from all communities as a part of the plan. Open to Traditional Knowledge from all communities to be a part of the plan.

Margaret Kralt: Is there a mechanism to apply Traditional Knowledge?

Patrick Simon: It is important to remember that trauma can pass through generations – genetic trauma. Caribou can experience genetic trauma that is passed down through caribou generations. We need to acknowledge and include Traditional Knowledge in the process. The Dene see trauma through generations in caribou.

Randy Freeman: Traditional Knowledge can be a way of guiding scientific research. Observations may be able to guide new avenues of research. Caribou have declined in the past – this is known through observation. Traditional Knowledge could respond to the 'why' but only if it is a part of the overall program.

Alex Power: Traditional Knowledge is a set of long-term observations; science makes a big use of observations. Elders have knowledge about why things have happened – don't have to explain justification as it is sent in generational research.

Margaret Kralt: The needs to be a mechanism to explain how Traditional Knowledge has been demonstrated and included in scientific research. What is the mechanism and balance?

Sjoerd van der Wielen: We need monitors on the land – a collaborative effort by all First Nations – especially around calf survival through the summer months. We need Traditional Knowledge people on the land helping to answer the questions.

Randy Freeman: Elders on the land to monitor is not likely, but responding to differences in behaviour than what has been told that is important knowledge to capture.

Luigi Torretti: Last week KIA was involved in a process where multiple Traditional Knowledge data sets were merged together– it was an amazing transition between Tłı̨chq̓ and Inuit knowledge from data collected in the late 1990s-2000s. It was a scientific interpretation of major caribou routes; Shin (NSMA) was there. The workshop offered another interpretation of the caribou migration routes based on the Elders Traditional Knowledge. Traditional Knowledge portrayed in graphical form must be cautious when interpreted by science – Traditional Knowledge holders also have to be part of the interpretation of the scientific modelling of the knowledge not to miss other interpretations. Coming from Nunavut there seems to be a disjoint of what Inuit are seeing on the land and GNWT perceptions of the land – we have no idea if the current caribou condition is the result of reproductive processes earlier on; what are the condition of the caribou that are going to the calving ground – must consider all the options including how forest fires have impacted the herd. After fires, are caribou going to calving grounds that are adequate for newborns? Perceptions of Nunavut is that it is full of development; if you look at the Nunavut Impact Review Board, there might be a host of development files but that might not actually translate into impacts on the land. In terms of exploration –for example, the numbers of the Bluenose East herd have come down quite a bit – important to know that their numbers were high when there was exploration going on and now that there is no exploration the herd numbers are coming down – there is a lot of information we just don't know. Counting caribou is frustrating because we do not know what the mechanisms are that drive population.

Peter Unger: Our major issue is that the herd has declined and we don't know why. Not enough resources are being put towards figuring that out. ZOI may be part of that but not the whole picture. We want Ekati/DDEC to support figuring out the "why". ZOI TTG is only a part of the bigger picture.

Kim Poole: No one is saying that ZOI is driving the herd's decline. Probably reasonable theories as to what is driving the cycle – range condition; change in insects; predation; harvesting at one point, many mechanisms that are driving the change. But the focus here is how development can focus on not making it worse, reduce its footprint and make things better.

Peter Unger: My point is that I don't want to get into the details. We don't want to figure out the ZOI that's been done – we want to figure out why the caribou herd numbers are in decline.

Harry O'Keefe: Peter wants to know what factors, other than ZOI, are influencing the Bathurst herd's numbers? This is where research can contribute to compensatory measures.

Rick Bargery: Have to design a plan/component that addresses some of the ZOI issues through Traditional Knowledge and science (component of larger package).

Alex Power: There is a lot that we don't know; IEMA knows some things that have been fed into a model. However, there is a clear gap in identifying why the caribou numbers are declining; this gap needs to be filled. I don't want that to get lost in this discussion.

Kim Poole: If vegetation is declining over the foraging season; DDEC is not going to fix that.

John Virgl: There is a lot of uncertainty. We need to do lots of research to understand how things change over time. Why are

50% of cows right now not pregnant? This is a question that needs to be answered to understand caribou numbers. In order for DDEC to measure effect of offsets we need to understand natural factors.

August Enzoe: August has been travelling around the mines for years and has always observed dust going into the air, every day. He was sitting on a rock watching dust being thrown into the air; it is hard to say why the dust was there. There used to be lots of caribou around that mine, since the dust has been around on traditional herding grounds there has been less caribou. Nobody knows what is going on with the caribou. For August, the dust is not good for caribou and that is why caribou are not going near the mine. Where are they disappearing to? Even the Elders don't know what's happening. It is believed that the calving ground is going down because the big game hunters take caribou. For 7 years now we have known that caribou numbers have been going down.

Luigi Torretti: When we mention Ekati building a plan for the caribou, at a workshop held last week in Yellowknife for caribou, it was demonstrated that information between the Elders for the Tłı̨chǫ Government and the KIA is consistent. There would be more buy in by building the plan where TK holders are sitting at the table providing different insight and perspective than science. Please keep this option open. In Nunavut we are trying to keep TK holders as part of development plans.

Rick Bargery: That is a very important point. Whatever is designed needs to have TK and Aboriginal government involvement. Dominion will not have a plan on October 9 but a commitment to a plan, and engagement with communities and stakeholders that will occur over 6-9 month period post the Review Board reporting.

Alex Power: The establishment of a research fund; who does the research and how is the research funded?

Kim Poole: There are several models that could be adopted. A system used in BC; an endowment fund (\$2 million) is set up; the interest on the principal amount in the fund is used for research. It is run by government; funds are put towards what their best guess is for priorities for monitoring activities and research.

Alex Power: Who is on the ground doing the research?

Kim Poole: Government staff would be responsible for determining the research and likely include other groups such as academics and communities. The fund could be set-up in different ways but the program is generally run by government.

Rick Bargery: There are many models, Kim brings up one model, but the key purpose is developing a understanding of what is happening. DDEC has heard a lot about things during the hearings about this. Peter Unger raised the question of "Why is the Bathurst Caribou Herd declining?" and that communities wanted to understand this.

Other potential projects (i.e. IEMA submission):

Bill Ross: The Agency has identify a suite of things we believe need to be done; if Review Board agrees they will need to see the measures and how those measures will be carried out in order to proceed to the licensing of Jay. The Agency wants to be convinced that the suite of measures to be set up will come to fruition. We would like to see DDEC to commit to specific actions in a priority sequence, two important tests: how much is enough to properly offset the effects of Jay? (assuming Jay goes ahead), and, how will we determine how much is enough on the ground? There needs to be a mechanism of monitoring the effectiveness of a suite of mechanisms; it would likely include monitoring those mechanism and evaluating whether it continues to be effective or should another mechanism begin. A monitoring mechanism needs to be transparent.

Rick Bargery: What constitutes an offsetting plan? What are the components? DDEC needs to have some direction so that a plan can be prepared that you support. At this time, there is limited direction. (Like going up to bat and not being told where the strike zone is).

Bill Ross: The key test as to when it is enough is in the view of the Review Board and subsequent regulator, ENR. I want to make a distinction as to what is enough and measuring it on the ground during implementation. Parties should offer advice to Review Board as to what is enough.

Rick Bargery: The issue is timing, is it not the Agency's recommendation that a plan in place prior to construction?

Bill Ross: The most important thing is trying to convince the Review Board that there are measures DDEC can commit to that would provide compensation of the Jay expansion project impact on the Bathurst herd.

Rick Bargery: DDEC is prepared to commit to a plan that will require engagement. However, we will not have a full plan by October 9, 2015.

Bill Ross: Prior to November 1, 2015; when DDEC makes their closing argument, the Agency will be advising the Review Board that it believes the cumulative effect of the Jay project will be significant and adverse. DDEC needs to convince the Review Board of measures that will be taken to offset the impacts on the Bathurst caribou. What the Agency has been trying to do is provide a suite of measures that DDEC should choose from and argue that they are collectively sufficient. Then there is the test if measures adopted are meeting those criteria. I want to distinguish between things on the ground and more conceptually the sufficiency of the measures you commit to and acknowledging through the Review Board that the measures are more than you have committed to.

Margaret Kraut: Is it a matter of putting together a list of measures to consider?

Rick Bargery: What comes out of today will inform that list and components of the compensatory mitigation plan

Bill Ross: IEMA has suggested measures: earlier implementation of closure plans is one of the measures. Are there measures at the existing Ekati Mine that could benefit the caribou, for example ramps at the rock piles or the LLCF. The site occasionally contributes to increased dust. Rock cover and vegetation over the site could reduce dust and benefit the Bathurst caribou herd.

John B. Zoe: Our biggest asset is the caribou because it defines who we are. It is important not to lose the focus that the actions that we take affect the caribou. History has told us that impact of explorers and trade was that people recovered because people were coming in and out and no real impact so there was an easier recovery. Especially trade for provisions have huge impact – trade for caribou so goods could be used alongside the river for transportation required usage. For the establishment of large centres were not quite there yet. The period after 1921, any impact on the area, social, usage or what government provides regarding acquisitions is the benefits that have to do with the access to resources. That means mining, loads, usage of air, management of wildlife, settlements – the results of acquired usages has some form of the Ehlòᑕᑦeh (a *muddy esker*) the Tł̨chq̨ word for this. The recovery of the activity in the last 20 years has escalated to the point that we don't know the true impact; what we know is that what we hope to recover from is constantly dwindling as we talk. We need something to work with to stop that flow; whatever it is that is flowing out of the landscape. Monitoring and TK helps to inform how we stop, curb, manage the activity, dust control might be positive things but we have to look at smaller things happening now not only to new development but everything that has happened over the past 20 years. The influence is already impacted and this (Jay project) is an add on – we need a cumulative strategy; our focus is that our caribou defines who we are and it is in a real threat; more than ever in the life of the earth itself.

Peter Unger: Can we go ahead listing everyone's specific concerns?

Group: Yes.

Concrete Action List Items - Compensatory Measures for Caribou

Rick Bargery: In the interest of discussions today, please put forward ideas with respect to the compensatory mitigation plan.

Peter Unger Some key projects the LKDFN would like to see include:

- Waste rock piles: pilot projects to create less effect on caribou
- Dust: best level of dust management
- Esker: wildlife crossing over the esker (e.g., Banff)
- Power lines-was deferred at last meeting and asked to bring it up at compensatory mitigation meeting;
- Can we look at shielding or covering around power lines
- Compensation for harvesting opportunities
- Traffic management
- August has been involved in these discussions for the past 20 years – where are the records of those discussions;
- All Dene who don't eat caribou blood feel weak
- We have been having these discussions and no one has been listening

Luigi Torretti: Some key areas of focus the KIA would like this work to support include:

- Because of resettlement Inuit has not been as affected as in the past; activity in the lands closer to Ekati has reduced significantly over the last 10-15 years; Perspective isn't site specific because we/Inuit have a wider focus on the issues/
- Diseases impacting population
- Water quality is the main issue of discussion
- Concerned about caribou as it is an icon of Inuit livelihood
- Predation
- Right to compensation of Inuit participation in monitoring activities
- Important for communities to have access to caribou – we need to be very careful how this access happens and the impact/pressure on access will have on other herds
- The demand for caribou meat is pushing hunters from other areas to harvest more than the typically do in those areas; Luigi is being cautious here
- Perhaps the not ideal solution is to look to other food sources

Bill Ross: Some key areas of focus the IEMA would like this work to support include:

- Design options for the Jay project; specifically linked to the Jay haul road routing
- Collaborative research – partially outside DDEC control
- Further information gathering/research at improving mitigation
- Improved monitored with focus on improving mitigation
- ZOI mitigation – letting the leaders (of caribou sub-groups) pass; breaks in traffic to allow time between traffic – convoying traffic; scheduling traffic; in an effort to let animals through
- Changing the caribou roads mitigation plan (CRMP); modifying distances out from the road that stop traffic and speed distances – with specific suggestions in the Agency response to undertaking #9
- Jay esker crossing; ZOI and possible expert panel to deal with infrastructure planning and design
- Dust suppression
- Blasting requirements
- Reducing sensory disturbance when caribou nearby
- Reducing skyline activity during caribou periods
- Making existing roads more caribou friendly
- Support for ZOI research, reporting and evaluation that feeds into action
- Accelerated reclamation
- Delays or phasing in other activities – e.g., Sable is an approved pit that has not yet been developed; delaying Sable/juggling Jay could reduce the effects on caribou
- Winter only activity at Sable or Jay
- Similar mitigation by other developers; limiting development in the range of the Bathurst herd
- Protection of high quality/critical habitat – maybe out of caribou range (Luigi)
- Research into dust versus dust mitigation
- Caribou protection measures across the range of the Bathurst herd; mobile caribou protection measures

Discussions around IEMA ideas

Kim Poole: Monitoring – concern that caribou will not use the Misery esker system. Could there be remote monitoring, cameras that could detect caribou trying to move through the area that therefore could signal DDEC to limit traffic and other activities? Undertaking No.7 from the technical hearing: details from the CRMP how collar data could be turned into real-time measures is not totally clear. Also there was talk in the hearings about the water crossing at the Lac de Sauvage-Lac de Gras isthmus, is there some way of making that more permeable to caribou?

Rick Bargery: That is a discussion that needs to be had with DFO.

Kim Poole: Is it better to have caribou go around the mine, possibly using fencing to deflect them, or make the mine as permeable as possible and the ZOI as small as possible? From an energetics point of view is deterrence around the mine better? I think it is better to make it more permeable. But it is important to minimize the encounter rates.

Harry O’Keefe: It is better for caribou to go around (work on Baffin Island was provided as an example).

Kim Poole: My thoughts are that it should be as permeable as possible from an energetics point of view. Is that something that the modelling could examine?

Harry O’Keefe: It is a research question? In order to research this, it is important to pick a realistic case to model.

Kim Poole: Not sure it is necessary but I was just posing the question to get people thinking. I feel it is better to focus on reducing the ZOI as much as possible

Dean Cluff: Fencing often creates other problems for the animals that are not often anticipated. A fence to deter caribou away from the mine is probably not the best choice.

Sjoerd van der Wielen: The Tłı̨ch̨ Elders think the caribou follows eskers along the way so if you cut an esker it has impacts all the way down the line. I think the Tłı̨ch̨ Elders would agree that ZOI should be as permeable as possible to allow caribou to pass through.

Sjoerd Van der Wielen: The key areas of focus the Tłı̨ch̨ would like this work to support is already on the board. Confirms if ZOI is on the board.

Andrea Patenaude and Dean Cluff: The key areas of focus the ENR would like this work to support includes:

- Focus on ZOI. When talking internally about measuring impacts, we wondered about whether the model could be used to measure impacts – not necessarily the model outputs because there is a lot of uncertainty and variation around results related to population demographics, but more the inputs. Encounter rates and residency time. We thought that – If you tie mitigations somehow to the model you could then focus on

reducing encounter rates, which essentially means shrinking the ZOI and minimizing residency times, which means making the site more permeable.

- Dust research and dust management and adaptive management is the best guess we have for the moment to possibly get at shrinking the ZOI, if you can have a strong tie to mitigation.
- Once caribou are inside the ZOI focus is on decreasing the amount of time they are in the ZOI, we support the idea of looking at the convoys and increasing periods of delays in traffic when caribou are around.
- Progressive reclamation off-site; off Jay site – we don't know how caribou will respond to the reclamation areas but the sooner we get them set up the sooner we will know prior to closure of mine sites
- Site-specific scale: the company wants caribou friendly roads for example, lower profile, etc. One component of this is– recording kill sites and sites of caribou accidents. Wolves chase caribou for 1-2km; if a wolf pushes a caribou to the road, the road can be a barrier that can work to their advantage – need to review kill sites within about 1 km to assess if this was a factor and report that.

Shin Shiga: The key areas of focus the NSMA would like this work to support include:

- More collars on caribou; DDEC to contribute to more
- Radars or similar devices to detect caribou approaching – ways to identify caribou at larger distances
- Predator control as a potential offset control measure
- Measurement of success: the model (Russell) during the range planning workshop predicts larger impacts than the Golder model; could that model then be used as a measure of effects since it is more robust

Shawn McKay: The key areas of focus the FRMC would like this work to support include:

- Maintaining the caribou range and the quality of the caribou range within and outside of the ZOI

Discussion about around NSMA ideas:

John Virgl: The model currently used by Golder for the Jay Project is more conservative and simpler model that adjusts for productivity and it has a higher disproportional level of decrease than the Russell model.

Harry O'Keefe: When comparing the two models; the Russell model will not produce a more conservative prediction.

Shin Shiga: The cumulative impact was larger under the Russell model.

John Virgl: As you add parameters to the model you add more layers of uncertainty. To compensate in our model we made our parameters very conservative.

Rick Bargery: If Jay is approved these modelling conversations can continue between the technical experts.

Andrea Patenaude: There are more collars on caribou now than have ever been before. ENR is talking about moving towards a system that uses geo-fenced data to pick up more information from specific locations. This is a potential monitoring direction ENR can go. From an ENR perspective there are lots of questions – the more programming you have on the collar has an effect on the lifespan of the collars and so you want to make sure you have a very clear targeted research/monitoring question; it is a bigger picture to look at, but of course from a ZOI perspective more collars would help.

Dean Cluff: It is important to note that this information is not guaranteed because the animal has to walk through the polygon/ZOI.

Kim Poole: Geo-fence collars are a research tool and whether it becomes a mitigation option is another topic. The geo-fence collars would provide finer data with respect to infrastructure. Radio collars could be used to measure a ZOI better than in the past because of larger sample size. It is research and monitoring before it goes any further, first there is a need to assess research in order to prove that mitigation works.

Patrick Simon: The key areas of focus the DKFN would like this work to support includes:

- Sensory factors – power lines
- Dust contaminant – research – do we actually know what dust can do/does to caribou population; survival and duress
- ZOI in relation to dust; dust ZOI in relation to other mine sites
- EnviroKleen as a potential mitigation measure
- The actual block in/creating barriers for caribou – want to minimize as much as possible

Shawn McKay: The key areas of focus the Fort Resolution Metis Council would like this work to support includes:

- Is EnviroKleen and other products safe for animals; why is one product different or safe for one purpose and not another
- Are dust suppressants healthy for animals, environment? Is research being done in different weather conditions: summer, winter, windy, not windy?

- Eskers
- Power lines
- The ZOI; if you are considering fences you will be deflecting not only the caribou but other animals ecosystems as well
- Collaborative efforts between mines/companies for roads but not mitigation collaboration planning effort
- Is the dust travelling farther than the ZOI?

Randy Freeman/Alex Power: The key areas of focus the YKDFN would like this work to support include:

- Changing opinions of the Elders on what would bring positive change
- But all elders agree that caribou is an important food source; FN office manages/stores the food for the community and there is a huge impact on lifestyle
- We have put lots of money into hunts and it is very expensive
- Resources put forward for community hunts that are still healthy for Yellowknife Elders – this would be a generous gesture

Comments around YKDFN ideas

Alex Power: At a certain point the site is not going to matter because caribou will not move through any longer. Some support for something else: location; food; etc. to meet YKDFN's needs in the short term would be more beneficial and supported by the YKDFN members.

Lunch

Moving Forward on Reclamation- Presentation

Lukas Novy: I work predominantly on reclamation, there is a lot DDEC can do directly on site as well as off site that has the potential to be positive on the herd. The Ekati site is still operating and actions can be taken to accelerate reclamation efforts.

Rick Bargery: Out of public hearings DDEC has some ideas as to where we could focus our efforts for reclamation.

Long Lake Containment Facility (LLCF)

Kim Poole: Habitat reclamation has long-term effects, the LLCF also has short term positive effects (soil stabilization to reduce dust). There are varying time scales.

Lukas Novy: Stabilizing the LLCF from wind and water is a goal.

Bill Ross If DDEC begins reclamation as planned there is no offsetting; if DDEC does it earlier than planned there will be benefits for caribou. Starting earlier will make a benefit for caribou earlier where they wouldn't otherwise until later. Early reclamation would create a benefit for the caribou for a period of time.

Lukas Novy: The LLCF acceleration in research coverage that would have the potential to have short term effects and stabilization. Up the research to a larger and faster scale.

Kevin O'Reilly: Are you saying that reclamation efforts will now happen sooner rather than later? How is reclamation faster than currently planned?

Lukas Novy: The earlier reclamation on the LLCF; the bulk of reclamation is when you start the activities. DDEC is not trying to give the impression that we are not committed to earlier reclamation efforts. What is currently in our LLCF reclamation research plan provides an analysis of what has already been done and where DDEC is planning on going.

Old Camp

Bill Ross: The two big areas of concern are the LLCF and rock pile; not the Old Camp.

How much is enough discussion – offsetting

Bill Ross: Once DDEC is taking actions– what about an adaptive management approach? This caribou herd is most important to people of NWT especially Aboriginal people, can we try to get the best possible expertise to assemble a monitoring/reviewing process for the Bathurst Caribou? Perhaps a panel of experts? Cumulative effects require cumulative solutions: a more full-suite of players is needed to address Bathurst Caribou: Diavik; DeBeers; road operator. ENR identified through new *Wildlife Act*, section 95, the Minister has the ability to require Wildlife and Wildlife Habit Out of public hearings DDEC has some ideas as to where we could focus our efforts for reclamation. A Wildlife and Wildlife Habitat Protection Plan (WWHPP) – measures could be imposed not only at Ekati but also at the other mines. IEMA might suggest to the Review Board to ask ENR to get cumulative effects measures through this mechanism.

Andrea Patenaude: Are you suggesting that ENR can force other operations?

Bill Ross: ENR has the authority, could require and include a specific measure to reduce impacts to the Bathurst Caribou herd. Some organizations (such as IEMA), might advise you and the Review Board to do that.

Andrea Patenaude: ENR is aware that this is a possible approach for mitigating cumulative effects at the range scale. –ENR is I revising the guidelines for wildlife management and monitoring plans (WMMP – the new terminology consistent with the Act) and, for example, will be looking at how caribou mitigation best practices can become requirements for future proponents. The focus going forward for ENR is current and future operations; as there are already wildlife plans in place at existing operations captured through mechanisms such as the Environmental Agreements and Memorandums of Understanding. This focus is partly a capacity issue and partly a planning issue. The Bathurst Range Plan will recommend a suite of mitigations to reduce impacts at the range scale and the approach Bill is suggesting would be one way of implementing some aspects of that plan. But that plan has not been developed yet and forcing changes at existing operations in an ad hoc way that does not fit the broader plan is not likely to be effective.

Kevin O'Reilly: How is Section 95 of the *Wildlife Act*, re cumulative effects and best practices, going to play out on existing operations?

Andrea Patenaude: The process is something that ENR is trying to work out. Any measures coming out of an EA and the way that they are being met will be required content for the WMMPs.

What has DDRC agreed to today as a commitment?

Rick Bargery: To be clear, I have not agreed to anything today. We need to look at everything that has been suggested and decided what is an appropriate compensatory mitigation plan;

- On dust we are prepared to do something in terms of the next phase of EnviroKleen and some research on the effects it is having.
- On roads we are going to have conversations with DDRC's operations folks and see how to incorporate it into the newest version of the CRMP
- We can look at the reclamation projects that have been spoken about: DDEC will have something responding to today's reclamation discussion.
- If there is something DDEC can do to build in a component of Traditional Knowledge that helps DDEC understand better – monitoring program, discussions; and builds confidence in the community that Traditional Knowledge is a part of the processes, DDEC is interested in exploring the possibilities.

Peter Unger: The community of Lutsel K'e is very concerned about the proposed Jay Project. Once you have submitted something another discussion about the plan put forward would be appreciated.

Rick Bargery: DDEC is happy to meet and discuss the plan put forward. We will have to be cognizant that we are filing on October 9th. Do representatives want to have a teleconference? Smaller face-to-face meeting? Individual conversations?

Kevin O'Reilly: Is DDEC going to propose measureable offsets as part of the plan? DDEC should convince the parties that the plan will actually offset the predicted impacts on the Bathurst caribou herd. If DDEC can't demonstrate quantitatively or qualitatively that you can offset it may cause problems. After DDEC has identified offset actions, measuring performance measures will be essential, within an adaptive management framework. The more specific the better or else how does DDEC demonstrate that offsetting is actually taking place.

Rick Bargery: That is a very difficult thing for DDEC to do. You put an idea on the table and DDEC has to both come up with how to mitigate and how to measure the mitigation.

Kevin O'Reilly: Not a fair characterization of the issue as the Agency raised the issue in its Technical Report filed in August. In terms of the process after the plan is submitted a face-to-face meeting would be preferable.

Luigi Torretti: We are mainly considered with water quality and other groups are closer and more affected by the project and

face-to-face not necessary.

Sjoerd Van der Wielen: The Tłıchq Government would prefer a face-to-face meeting.

Shawn McKay: The FRMC would prefer a fact-to-face meeting.

Patrick Simon. The DKFN would prefer a face-to-face meeting but as capacity is an issue Patrick is thankful (pointing to other FN groups and IEMA) was around to help identify their interest.

Peter Unger: The LKDFN would prefer a face-to-face meeting.

Shin Shiga: The NSMA would prefer a face-to-face meeting.

Next steps/path forward:

Most groups indicated they would like a follow-up face-to-face meeting after plan is submitted on October 9th but if that is not possible any form of meeting would suffice.

Closing remarks:

Bill Ross: Thanked DDEC for hosting the meeting as it has produced a number of ideas to bring the process forward.

Rick Bargery: On behalf DDEC thank you for attending. It now up to DDEC to bring this all together.

The workshop wrapped up at 3:15pm.