

**IN THE MATTER OF SERVICES NO. K4450 22 1028**  
**FOR THE MARATHON PALLADIUM PROJECT**

**TRANSCRIPT OF PROCEEDINGS**  
held virtually at Toronto  
on Tuesday, March 22, 2022, at 9:00 a.m.

VOLUME 8  
REVISED TRANSCRIPT

**BEFORE:** Debra Sikora, Panel Chair  
Gay Drescher, Panel Member  
Laurie Bruce, Panel Member

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Robert Clavering	and Climate Change Canada
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Heather Cherry	On behalf of Parks Canada
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**Also Present:**

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1 Virtual proceedings  
2 --- Upon resuming on Tuesday, March 22, 2022,  
3 at 9:00 a.m.

4 PANEL CHAIR: Good morning,  
5 everyone, and welcome to day 8 of the public  
6 hearings for the Marathon Palladium Project.  
7 My name is Debra Sikora and I'm the chair of  
8 the joint review panel. My colleagues on the  
9 panel are Gay Drescher to my right, and Laurie  
10 Bruce to my left.

11 Today and tomorrow we'll be  
12 hearing from presenters on the terrestrial  
13 environment. I won't be repeating my full  
14 opening remarks from last week as they can be  
15 found in the transcripts and on YouTube. Just  
16 a few reminders, though, a live audio and  
17 video streams and video recordings of this  
18 hearing are available to the public through  
19 YouTube. Anyone in the virtual hearing room  
20 with their camera or microphone turned on will  
21 be captured, and images and recordings of you  
22 and your surroundings will be broadcast to a  
23 publicly available YouTube video.

24 If you have concerns about  
25 this, please contact the secretariat and we'll

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1 do our best to accommodate while considering  
2 the need to conduct an open and transparent  
3 public process.

4                   The secretariat has been  
5 assisting us with logistical and process  
6 related questions and they can be reached by  
7 writing to the project e-mail address found on  
8 the public registry.

9                   In the event of an emergency  
10 where you are, please consider your safety  
11 first and exit your location if needed. When  
12 it's safe to do, so please let us know how we  
13 may assist and we'll find time to reschedule  
14 your presentation.

15                   We plan to take a  
16 fifteen-minute break mid-morning and afternoon  
17 and a one hour break for lunch.

18                   An updated hearing schedule  
19 was posted and I'll just review our plans for  
20 today so that everyone is clear.

21                   So the panel intends to hear  
22 presentations from GenPGM, Environment Canada  
23 and Climate Change, and the Ontario Ministry  
24 of Northern Development, Mines, Natural  
25 Resources and Forestry. At that time we'll

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1 then proceed with questions related to terrain  
2 and soils and vegetation. Following this we'll  
3 hear presentations again from Environment and  
4 Climate Change Canada and Parks Canada, and  
5 then follow this with questions on migratory  
6 birds and wildlife.

7                                 While we will be hearing  
8 presentations today on caribou, the panel will  
9 proceed with questions on caribou and species  
10 at risk following tomorrow's presentation from  
11 the Ontario Ministry of Environment,  
12 Conservation and Parks. Due to this format, we  
13 have asked all participants registered for the  
14 specific topic days to remain for the entire  
15 day or days so we may direct questions  
16 accordingly.

17                                 We'll then continue to  
18 provide an opportunity for GenPGM to respond  
19 to any of the information presented for each  
20 topic session at the end of the topic.

21                                 So with that, before we  
22 begin, I would like to ask if there are any  
23 questions or procedural matters that  
24 participants would like to raise today. Okay,  
25 seeing none.

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1 Thank you once again for  
2 joining us this morning and with that, I'll  
3 turn it over to our first presenter,  
4 Generation PGM, thank you.

5 MR. ANWYLL: Good morning,  
6 Chair Sikora and everyone else. Thank you for  
7 attending day eight: My, how time flies.

8 Can I ask the AV tech to  
9 bring up CIAR number 1125, please. All right.  
10 Terrestrial environment. Can I go to the next  
11 slide, please.

12 I think we've got an overview  
13 of what we'll be speaking about. Next slide,  
14 please. And one more.

15 So again, the technical  
16 witnesses that we'll be hearing from today are  
17 largely Brian Fraser from EcoMetrix, Dr. Rob  
18 Foster from Northern Bioscience and John  
19 Pounder may have a special guest appearance  
20 today and at least will provide us with the  
21 references as required. And, of course, we  
22 have the GenPGM team of myself, Drew Anwyll;  
23 Jeremy Dart; Cathryn Moffett and Tabatha  
24 LeBlanc.

25 Next slide, please.

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1                   Again, I've gone over this  
2 presentation a few times so I think if the  
3 panel chair agrees, I'll whistle past these  
4 next three slides and jump right into the  
5 technical session of the terrestrial portion.

6                   Can you please advance, I  
7 think it's two more, three slides. And one  
8 more. And one more, please. There we go. At  
9 this point, I'll hand over to Mr. Brian  
10 Fraser.

11 PRESENTATION BY BRIAN FRASER:

12                   MR. FRASER: Thank you, Drew.  
13 And good morning, Madam Chair, and panel  
14 members and everyone that's with us this  
15 morning.

16                   We're going to initially  
17 start the presentation with some slides  
18 regarding terrain and soils. Once we're  
19 through terrain and soils, I will hand off to  
20 Dr. Foster and he will carry forward with the  
21 remainder of the slides.

22                   Next slide, please.

23                   This slide depicts the local  
24 study area in which the soils assessment was  
25 completed, that's the yellow, more or less,

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1 circular shape on that picture. That local  
2 study area is the same as the air quality  
3 local study area or quality assessment local  
4 study area largely because the primary pathway  
5 of effects to soils beyond excavation of  
6 materials would be associated with fugitive  
7 dust emissions. And just -- we've gone through  
8 this a few times in other slides -- but just  
9 for those that haven't been part of previous  
10 discussions, the project site or the -- I  
11 guess more specifically, that red outline  
12 shown shows the project boundary, which is  
13 largely associated with mine claims associated  
14 with the Marathon Project.

15                               That area is characterized by  
16 moderate to steep hilly terrain, relatively  
17 high frequency of streams, ponds and small  
18 lakes. The vegetation in the area, as Dr.  
19 Foster will describe in much more detail, is  
20 dense and consists of northern hardwoods and  
21 conifers, and this is common in the boreal  
22 forest region.

23                               Through zeroing in on the  
24 soils and overburdens, which is our topic  
25 today, regionally overburden material is

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1 derived from glacial till. Soils are podzols,  
2 again common in the boreal forest. Generally  
3 speaking, very thinly expressed on the project  
4 site with frequent bedrock outcropping. The  
5 one thing I will note is the Pic River  
6 floodplain comprises thick deposits greater  
7 than 20 metres of sand, sandy silt and clays.

8 Move to slide two, please.

9 So in terms of baseline  
10 assessment of terrain and soils, we did a  
11 desktop review of relevant regional  
12 information. We did a sampling program for  
13 soils and overburdens within the -- largely  
14 within the SSA and just getting outside the  
15 SSA a little bit. Shown on the map to the  
16 right would be all the sampling locations from  
17 which materials collected. That included  
18 samples obtained from test pitting, samples  
19 obtained from bore hole augering. Generally  
20 speaking, we tried to cover off areas where  
21 mine site infrastructure would be developed  
22 and also some key spots from the baseline air  
23 quality monitoring program.

24 Just to highlight some key  
25 results from the baseline program. So we have

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1 estimated that approximately 3.7 million cubic  
2 metres of soil and overburden will be  
3 excavated from the project site to developed  
4 project infrastructure.

5                               Based on the chemical  
6 analysis of the soils and overburden materials  
7 from the sampling locations generally  
8 constituent concentrations were within the  
9 range of screening criteria and we used  
10 average crustal abundance and the provincial  
11 background site conditions standards for  
12 uncontaminated sites as screening criteria.  
13 There were some exceptions to that and that  
14 reflects local mineralization. Soils were  
15 characterized as to their acid generating  
16 potential as well. Soils are non-acid  
17 generating -- or non-potentially acid  
18 generating and can be safely stored on-site in  
19 that regard.

20                               Next slide, please.

21                               In terms of the effects  
22 assessment, we considered two potential  
23 effects on soil and burden -- soil and  
24 overburden back that would be changed to soil  
25 and overburden and changed to soil quality.

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1                   With regards to change to  
2 soil and overburden, that was a quantity  
3 estimate and, as I mentioned, we would look to  
4 develop the quantity of material that would be  
5 planned to be excavated to develop project  
6 infrastructure. On the -- soil quality side,  
7 that specific pathway is to look at potential  
8 changes in concentrations of soil constituents  
9 that could result from project emissions,  
10 principally dust emissions.

11                   So with respect to the  
12 excavation quantity, as I indicated,  
13 approximately 3.7 million cubic metres of  
14 soils and overburden materials will be  
15 excavated to develop project infrastructure.  
16 These materials will be stockpiled on-site,  
17 there is one principal stockpile location that  
18 is in the south end of subwatershed one just  
19 below the south pit. There are also smaller  
20 overburden piles associated with the PSMF on  
21 the west toe, or outside the west toe, and  
22 also below cell 1, between cell 1 and the  
23 water management pond.

24                   Key mitigations associated  
25 with stockpiling overburden includes

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1 stockpiling at slopes that are stable,  
2 providing erosion and sediment control to  
3 those piles, and seeding as well so that those  
4 piles are progressively reclaimed to prevent  
5 undue erosion.

6 Overall the assessment  
7 indicated no significant adverse effects  
8 predicted with mitigation, so that OB, or soil  
9 and OB combined material will be available for  
10 reclamation at the end of mine operations. So  
11 it will be stockpiled and protected so it can  
12 be used for that purpose.

13 With respect to soil quality.  
14 Fugitive dust levels were modelled and  
15 predicted to be low, below applicable health  
16 criteria, both for ecological and human health  
17 receptors. No material change in soil  
18 chemistry is expected. Key mitigations  
19 associated with that include limiting fugitive  
20 dust sources, specifically -- specific  
21 examples include progressive rehab on  
22 disturbed areas, watering roads and through  
23 ways that will accommodate mine-related  
24 traffic, and also with the large open surfaces  
25 associated with the PSMF and the mine rock

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1 storage area, creating wind breaks to prevent  
2 excessive wind erosion of those materials.

3                   Based on the assessment, we  
4 do not predict significant adverse effects  
5 considering the mitigation strategies on soil  
6 quality. Based on that overall we are not  
7 predicting significant adverse effects with  
8 mitigation on the soil and overburden VEC.

9                   Not detailed here but I will  
10 comment on soil monitoring. So there will be a  
11 soil monitoring program implemented through  
12 the operational phase and it will coincide  
13 with -- I should say through construction and  
14 operation and pending closure probably through  
15 the active closure phase while there is still  
16 activity on the site. That would be associated  
17 specifically and correlated with the air  
18 quality monitoring program. So wherever air  
19 quality monitoring stations are, soil  
20 monitoring stations will be established so  
21 that we can correlate dust emissions with soil  
22 quality.

23                   I'll also comment that there  
24 is a country food program that's being  
25 discussed and the details of that are ongoing

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1 boundaries and designations were confirmed in  
2 the field during field work, which began in  
3 2008 and was largely completed in 2020;  
4 although, we did some work in 2021 and there  
5 is still ongoing field work to support the  
6 project.

7                               Field surveys for rare plants  
8 were conducted primarily in 2009 and 2008 and  
9 additionally, when we conducted a field  
10 program in 2020. Those targeted specific  
11 microsites and microhabitats where rare plants  
12 are most likely to be found, such as north-  
13 facing cliff faces, wetlands and other of  
14 these rare habitat types where you typically  
15 would find rare vegetation present, if they  
16 were going to be found in that habitat.

17                               Next slide, please.

18                               This is a map of the local  
19 study area and the project site study area. As  
20 you can see, although it's difficult by the  
21 small legend, but the site study area and  
22 local study area are predominantly forest.  
23 Predominantly mixedwood forests dominated by  
24 hardwoods, like birch, but also there are  
25 balsam fir, white spruce and other tree

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1 species in the overstory (ph).

2                                 The predominant impact from  
3 the project is the clearing of the footprint,  
4 at least, in terms of vegetation. So it's  
5 direct impact of clearing approximately 1,100  
6 hectares for the site study area of which  
7 approximately 1,081 hectares are forest. There  
8 may be some minor impacts in the local study  
9 area adjacent to the site footprint, such as  
10 increased sunlight to along the margins of the  
11 open area. Fugitive dust which may move into  
12 this surrounding forest up to approximately 30  
13 metres but it's typically less and some  
14 potential changes in hydrology, groundwater  
15 hydrology which could be manifested in slow  
16 changes in vegetation over time in the local  
17 study area outside of the project footprint.

18                                 There is a potential for  
19 introduction of non-native species associated  
20 with the project that must be recognized there  
21 is already 40 species of non-native plants  
22 found on the site based on our past field work  
23 so that's about a ninth of the plant species  
24 we found on-site were non-native. It's fairly  
25 typical of many areas in Northwestern Ontario,

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1 most of these species are non-native but not  
2 invasive.

3                               There are several species  
4 on-site that are potentially more aggressive  
5 in invading natural ecosystems, such as tansy  
6 and bull thistle. And we did find in 2021 an  
7 occurrence of purple loosestrife which was  
8 present on-site, likely came in on mud from a  
9 quad, would be my expectation. The nearest  
10 known locations are approximately 7 kilometres  
11 west of the site.

12                              So there will be standard  
13 mitigation employed to reduce the risk of  
14 introduction of non-native species by  
15 equipment and vehicles and standard best  
16 management practices that would reduce the  
17 risk of other non-native species, particularly  
18 invasive ones being introduced to site.

19                              Some of the forest in the  
20 site study area will be regenerated  
21 post-closure. That plan is currently in draft  
22 and undergoing work with the agencies and  
23 Indigenous communities and other stakeholders,  
24 as I think has been raised in previous  
25 sessions.

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1                   Other portions of the study  
2 site that aren't returned to forest will  
3 eventually become rock barren communities,  
4 some parts of the rock mine stockpile will be  
5 similar to talus, et cetera, that are  
6 occurring naturally on-site and there will be  
7 also some more shrub dominated or herb  
8 dominated communities that are more open  
9 on-site.

10                   Overall the effects of this  
11 conversion of loss of forest habitat on-site  
12 isn't considered significant in the regional  
13 context. In contrast to the 1,100 hectares  
14 that the site represents, approximately  
15 100,000 hectares of forests are predicted to  
16 be harvested over the next 10 years on the Pic  
17 River forest management unit.

18                   So in the context of the  
19 regional landscape, the loss or conversion of  
20 the forest during the operation of the mine  
21 and post-closure isn't considered significant.

22                   Next slide, please.

23                   As for non-forested  
24 communities there is small loss of rock  
25 barren, talus, and other non-forested upland

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1 communities during construction, and similar  
2 to forest, there would be some minor, indirect  
3 effects in the surrounding local study area,  
4 primarily fugitive dust or increased light  
5 within the community.

6                                 Similarly, there may be some  
7 potential risks of introduction of non-native  
8 species. However, there will likely be  
9 post-closure more of these open non-forested  
10 communities on site. So their loss during  
11 clearing and operations isn't considered  
12 significant.

13                                 Next slide, please.

14                                 There are a few small  
15 isolated wetlands occurring in the site study  
16 area. There's approximately 21 hectares of  
17 site wetlands on the small, less than 10  
18 hectares size, waterbodies that are found in  
19 the site study area. These will be lost during  
20 development of the project footprint.

21                                 There may be some minor  
22 indirect effects on surrounding wetlands in  
23 the local study area through fugitive dust or  
24 light but also through potential changes in  
25 groundwater hydrology that could be manifested

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1 at the surface as well and potentially impact  
2 these wetlands.

3                   The magnitude of potential  
4 changes for wetlands in the local study area  
5 are small. These groundwater changes relative  
6 to the natural disturbance of these wetlands  
7 due to beaver activity are relatively small so  
8 no significant impacts on nearby wetlands are  
9 predicted from the project.

10                   And in the regional context,  
11 there are approximately 11,000 hectares of  
12 open wetlands found in the regional study area  
13 so the wetlands in the project footprint  
14 represent less than 0.2 percent of this. These  
15 are just mapped wetlands that are in these  
16 open ecosites. There's another approximately  
17 10,000 hectares of non-forested wetland  
18 ecosites in the regional study area and  
19 additional unmapped ones probably at least  
20 that size as well.

21                   No significant impacts are  
22 anticipated on these wetlands.

23                   Next slide, please.

24                   There are some rare plants;  
25 we identified some on-site, both provincially

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1 for that matter, in the province. So there may  
2 be other occurrences of this pondweed in the  
3 regional study area that have not been  
4 detected.

5                   Neither species is expected  
6 to have significant residual affects from  
7 these transplantings or other project effects.

8                   Next slide, please.

9                   My apologies if, for the  
10 court reporter, if I'm speaking too quickly.  
11 We have a fair bit to cover. If it's a  
12 problem, please let me know and I'll slow  
13 down.

14                   Next I would like to talk  
15 about wildlife. So if we could advance to the  
16 next slide, that would be great, thank you. We  
17 conducted field surveys for wildlife in 2008  
18 to 2011, again in 2013, and then as the  
19 project became more active again, we conducted  
20 another round of fieldwork in 2020 and 2021.  
21 What we see in the slide there, the map shows  
22 locations of standard point counts that we  
23 conducted for songbirds; we did over 200 of  
24 those spread out over the years.

25                   We also conducted aerial

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1 surveys for nesting waterfowl during the  
2 spring, and conducted evening point counts for  
3 marsh birds and other nocturnal species, such  
4 as eastern whip-poor-will and common night  
5 hawk, and also deployed automated recording  
6 units at more remote sites for evening and  
7 nocturnal birds, and conducted surveys for  
8 nocturnal amphibians and bats, using those  
9 ARUs as well.

10 We conducted winter aerial  
11 surveys for moose, caribou, wolves, and other  
12 large mammals back in 2013 and in 2009. And we  
13 recently completed another aerial survey with  
14 four moose survey blocks and woodland caribou  
15 survey transects this past month in February  
16 to continue on with our fieldwork.

17 And there are still currently  
18 trail cameras deployed on-site for large  
19 mammals as well. We used FRI, forest resource  
20 inventory, that mapping that we used for the  
21 vegetation; that forms the basis of standard  
22 wildlife models using MNR's Ontario landscape  
23 tool. So we use that to model selected species  
24 for wildlife habitat as well.

25 Next slide, please.

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1                   For our local study area for  
2 wildlife is the magenta boundary one kilometre  
3 buffer around the site study area as it was  
4 for local -- as it was for vegetation.

5                   Next slide, please.

6                   And the regional study area  
7 for wildlife was the same one used as for  
8 vegetation for forest communities, largely  
9 because wildlife habitats is largely driven by  
10 forest abundance and distribution and pattern  
11 and that is affected by commercial forestry.  
12 So given that most of the site study area is  
13 forested, this is the most appropriate  
14 regional study area for wildlife as well.

15                   Next slide, please.

16                   Moose is one of the selected  
17 VECs, as it has a considerate degree of  
18 socio-economic importance in the region and  
19 for Indigenous communities. The site study  
20 area has relatively good moose forage. Those  
21 southeast soils near the Pic River, as Brian  
22 mentioned, support dense understory  
23 communities with shrubs that moose like as  
24 preferred browse.

25                   But there are very few

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1 wetlands in the site study area and are quite  
2 small and limited and don't provide those  
3 aquatic feeding areas and there's relatively  
4 limited thermal cover in the site study area  
5 and local study area compared to the rest of  
6 the regional study area. This isn't the dense  
7 lowland conifer that provides thermal refuge  
8 for moose in the summertime.

9                               So given the modelling of the  
10 moose habitat using the standard models and  
11 the baseline FRI, the site study area supports  
12 approximately one to two moose. That's what  
13 they have the capacity to support. Our moose  
14 surveys in 2013 using forest moose survey  
15 blocks overlapping the site study area  
16 detected two moose, one of which was outside  
17 the site study area near Bamooos Lake and north  
18 of site study area. Recent moose surveys that  
19 we conducted last month using those same  
20 forest survey blocks using standard methods,  
21 we detected again two moose, but both were  
22 outside the site study area west of Bamooos  
23 Lake.

24                               So in comparison on our  
25 survey last month, in the coastal range

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1 between Terrace Bay and the Pic River, we saw  
2 two moose near the site here; we saw 44 moose  
3 total in that survey area, including seven on  
4 Coldwell Peninsula and Neys Provincial Park.  
5 So the moose habitat isn't that good on-site,  
6 relative to the regional study area.

7                               There would be a direct loss  
8 of this moose habitat in the site study area.  
9 Some of which would be recovered post-closure,  
10 depending on the vegetation, and there's  
11 potential for some sensory disturbance to  
12 moose by project activities by noise for  
13 example, or potential collisions on the access  
14 road.

15                              So there will be mitigation  
16 in terms of speed, signage and employee  
17 training to mitigate that potential risk for  
18 collisions. No population level impacts on  
19 moose are anticipated from the project.

20                              Next slide, please.

21                              This is a map of modelled  
22 spring bear habitat. The site study area does  
23 potentially support up to several bears and it  
24 supports one wolf pack. Our field surveys  
25 on-site and trail cameras indicated there is

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1 one wolf pack whose range overlaps the site  
2 study area in the southwestern portion and we  
3 again saw this wolf pack of seven wolves just  
4 near the airport during our February flight.  
5 So there is a wolf pack that does use the site  
6 study area, and several bears have been  
7 detected on trail cameras.

8                               The project will result in a  
9 loss of habitats during operations on the  
10 site. There is potential for some sensory  
11 disturbance to these species in the  
12 surrounding study area. They are fairly  
13 resilient. Both the wolves and bears that seem  
14 to frequent the municipality landfill that is  
15 immediately adjacent to the site, probably  
16 subsidized food wise from that landfill and  
17 are fairly habituated to at least some level  
18 of disturbance from anthropogenic activities.

19                               Negative interactions with  
20 these species will be minimized by employee  
21 training and proper waste management on-site  
22 to avoid any potential negative interactions  
23 with the project.

24                               No significant residual  
25 impacts are anticipated on these two VECs (ph)

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1 from the project, ultimately.

2 Next slide, please.

3 Other furbearers do exist  
4 on-site, particularly beaver which are found  
5 on many of the small waterbodies and the site  
6 study area also provides habitat for Martin,  
7 which is an important furbearer and of  
8 significance to Indigenous communities.

9 These species will be  
10 displaced during the clearing of the project  
11 footprint and there may be some minor sensory  
12 disturbance to other furbearers in the  
13 surrounding landscape, immediately adjacent to  
14 the project.

15 Both these furbearers, their  
16 populations are likely limited by trapping,  
17 hunting and other -- other factors other than  
18 habitat so that ultimately, there isn't  
19 expected to be any significant residual  
20 effects on these furbearers from the project.

21 Next slide, please.

22 The clearing of the site  
23 study area will result in the loss of  
24 approximately 1,100 hectares of the forest and  
25 other habitats during construction. So

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1 impacts are anticipated on migratory songbirds  
2 that may be using the site study area. The  
3 species are fairly resilient to disturbance,  
4 given that they breed in a boreal forest,  
5 which is largely a disturbance driven  
6 ecosystem due to wildfire and forest outbreaks  
7 and windthrow.

8                                   Next slide, please.

9                                   There are some other bird  
10 species other than songbirds that use the site  
11 study area. Very limited marshes so very few  
12 marsh birds. There's no nesting colonies, such  
13 as great blue herons or barn swallows, and no  
14 migratory stop-over sites or significant  
15 wildlife habitat for birds were identified in  
16 the site study area.

17                                   Some of the resident birds  
18 that are non-migratory, such as ruffed and  
19 spruce grouse, would be displaced during the  
20 clearing. But mitigation used for songbirds  
21 would also benefit those species. Post-closure  
22 habitats may be different than the mature  
23 forest that is there now, so there may be a  
24 shift in abundance of some species with some  
25 species that prefer more open habitats or

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1 younger, early successional habitats, such as  
2 you find after fire or forestry. Those species  
3 may be more abundant, at least initially  
4 post-closure and species that prefer mature  
5 forests may take longer time to use this site  
6 post-closure, but no population level impacts  
7 on these other bird species are anticipated.

8                   Next slide, please.

9                   There aren't any documented  
10 occurrences of turtles on site and there's no  
11 species at risk, reptiles or amphibians that  
12 are found on site. There was concern expressed  
13 by MNR with respect to significant wildlife  
14 habitats that is designated on behalf of  
15 amphibians. There are newts that are found in  
16 four small waterbodies in the site study area,  
17 and these newts, depending on their abundance  
18 and the potential occurrence of other co-  
19 occurring amphibians could potentially qualify  
20 as significant wildlife habitat.

21                   So as a proactive measure,  
22 precautionary, we're proposing for mitigation  
23 for these waterbodies where newts are found in  
24 to translocate the newts and amphibian  
25 tadpoles to another -- to another suitable

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1 receptor waterbody outside of the site study  
2 area. This would be the first EA that I'm  
3 aware of in Ontario where there is -- that  
4 newts have been translocated but we think it's  
5 an precautionary measure for mitigating  
6 potential impacts on these habitats.

7                               Next slide, please.

8                               I'd like to use the remaining  
9 time to talk about species at risk as it bears  
10 a degree of concern by local agencies and  
11 Indigenous communities as well as others.

12                              Next slide, please.

13                              Boreal caribou is probably  
14 the highest profile species at risk, as many  
15 of us know, on site. We assessed boreal  
16 caribou at multiple scales from site level to  
17 the range level.

18                              So we reviewed available  
19 information from MNR, MECP and other data  
20 sources, including their provincial caribou  
21 database, to look at the distribution  
22 abundance of woodland caribou at the site and  
23 in the adjacent landscape.

24                              We conducted incidental  
25 ground surveys during our fieldwork and have a

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1 network of field cameras that are established  
2 on-site. We conducted aerial surveys at the  
3 site in 2011 and 2013 and since our original  
4 caribou assessment in 2013, there's actually  
5 now been six surveys in the adjacent coastal  
6 range between Terrace Bay and Pukaskwa; three  
7 of those by Northern Bioscience, for this  
8 project or others, two by Michipicoten First  
9 Nation and one by NDMNRF, NRF for short.

10                               So since -- in particular, I  
11 should point out since MNR's 2016 aerial  
12 survey, on which they based their population  
13 estimate, there have been four more surveys in  
14 the coastal range for caribou between Terrace  
15 Bay and Pukaskwa, none of which have detected  
16 caribou, and the last three surveys have not  
17 detected even any tracks of caribou.

18                               These include surveys done by  
19 Michipicoten First Nation which had a survey  
20 spacing of 400 metres, which is really quite  
21 tight; the other surveys did one kilometre  
22 spacing between the surveys, and this is  
23 tighter than MNR does for moose surveys so  
24 really reduces the risk of overlooking tracks  
25 or animals. When you look at the most recent

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1 survey that we did, we saw 44 moose. We did  
2 not see any caribou last month, nor any  
3 tracks. So the situation for caribou, the  
4 population is really quite precarious in  
5 coastal range.

6                   The estimates by NDMNRF of 55  
7 caribou, based on their 2016 survey, is  
8 probably an overestimate of what is actually  
9 on the landscape now. That survey did not see  
10 any caribou but did see caribou tracks at four  
11 locations, two of which were outside the  
12 coastal range and based on their modelling of  
13 -- probability modelling of caribou and moose  
14 tracks combined, they came up with an estimate  
15 of 55 animals with a confidence range of as  
16 low as 12 animals to high of as 223. That was  
17 in 2016, that's now six years ago.

18                   That estimate, even at the  
19 time, may have been somewhat biased in that  
20 they didn't account for deer tracks, which we  
21 know are found in the range. And again, two of  
22 the locations where they saw tracks were west  
23 of Terrace Bay so actually in the  
24 discontinuous range where there are no  
25 resident caribou. And now the four surveys

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1 since then have not detected caribou, and the  
2 last three haven't detected any tracks, so the  
3 estimate of 55, we do not consider it credible  
4 for the actual population in the range now.

5                   We assessed the impacts on  
6 caribou habitat using MNR's caribou habitat  
7 models based on forest resource inventory,  
8 forest attributes. They also use the federal  
9 disturbance model for assessing the range  
10 condition of caribou habitat in the coastal  
11 range and adjacent discontinuous range and we  
12 were provided with MECP's caribou habitat  
13 categorization, which they did.

14                   Next slide, please.

15                   So there's the map showing  
16 the site study area, which is the same as with  
17 the other VECs, our local study area, which is  
18 a 10 kilometre buffer around that, and then  
19 the coastal range with and without a 10  
20 kilometre buffer and the adjacent  
21 discontinuous range, just to put in the  
22 context. So we assessed caribou at all these  
23 spatial scales to look at both fine scale and  
24 broad scale, distribution, abundance and  
25 potential of impacts.

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1 Next slide, please.

2 There is no documented  
3 caribou calving or nursery habitat at the  
4 project site and no category one, which is  
5 high use areas as defined by MECP, and they  
6 are the most sensitive habitat found on-site.  
7 There is very little classic caribou habitat  
8 on-site and approximately 700 hectares of  
9 modeled refuge habitat using MNR's refuge  
10 habitat model. There really isn't the escape  
11 habitat on-site, which in the coastal range is  
12 believed to be the offshore islands, and that  
13 is how they are believed to have persisted  
14 longer here than they have in the north of  
15 here in the discontinuous range.

16 Most of the site is  
17 considered disturbed, using both the federal  
18 and provincial disturbance models for caribou  
19 habitat but basically anthropogenic  
20 disturbance or natural plus a 500-metre  
21 buffer.

22 So when you consider the  
23 forest habitat composition and the  
24 disturbance, it's debatable whether any  
25 habitat on-site is currently be considered

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1 critical habitat under the federal recovery  
2 strategy based on the definitions provided in  
3 that strategy and the forest composition for  
4 the boreal shield as identified in Appendix H  
5 of that updated federal caribou recovery  
6 strategy.

7                                   We must remember that MNR,  
8 actually, in 2013, this area had forest  
9 allocations planned for the site study area  
10 and the adjacent areas -- the adjacent block  
11 was open for harvest in the adjacent areas.

12                                   Next slide, please.

13                                   There is concern about  
14 connectivity through the discontinuous range  
15 from continuous ranges farther north, that was  
16 the Nipigon and Pagwachuan range. The pink  
17 shading on this slide shows you that much of  
18 the northern portion of the discontinuous  
19 range is disturbed according to the  
20 disturbance models used by the federal and  
21 provincial agencies.

22                                   There is a portion south of  
23 the project along the coast in the coastal  
24 range in Pukaskwa and Michipicoten, which is  
25 shown in green and has very little

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1 disturbance. Sadly, unfortunately, despite the  
2 relative lack of disturbance in Pukaskwa  
3 National Park and along the coast, adjacent  
4 coast, caribou are believed to be extirpated  
5 from there with the last known sighting at  
6 Otter Island being in 2011.

7                               So even despite the absence  
8 of industrial forest harvesting in Pukaskwa  
9 National Park, 1,800 square kilometres,  
10 caribou are no longer extant.

11                              In contrast, the area west of  
12 Pukaskwa in the coastal ranges of 1,100  
13 hectares -- sorry -- 1,100 square kilometres,  
14 so a much smaller area so even the large size  
15 and relatively undisturbed nature of Pukaskwa,  
16 as shown on this slide, didn't prevent  
17 extirpation of caribou there.

18                              Next slide, please.

19                              This map shows the category  
20 one habitat as identified by MECP in 2017 in  
21 yellow. The original 2013 identification of  
22 category one, or high use habitat by MNR, was  
23 just Pic Island, which is in the western  
24 portion of that map with all the dots showing  
25 where caribou occurrences are.

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1                                   There's only one caribou  
2 record of the 3,000+ caribou records in the  
3 provincial caribou database, which includes  
4 current and historical caribou records.  
5 There's only one of those in the caribou  
6 category one habitat as defined by MECP within  
7 10 kilometres of the project site, that is  
8 that one 2010 occurrence seen in the  
9 wintertime on Yser point in peninsula harbour  
10 opposite Marathon.

11                                   Based on MECP's own criteria  
12 for category one habitat, which we reproduced  
13 in Appendix D of our updated EIS, the area  
14 west -- east of Coldwell Peninsula does not  
15 qualify as category one habitat; so that area  
16 within 10 kilometres of project site, so  
17 within the red outer line, that yellow area  
18 within that, which only has one winter  
19 occurrence that does not meet the criteria of  
20 MECP for category one habitat. To be nursery  
21 habitat, it must have known occurrence during  
22 the summertime. There are no known  
23 observations of caribou in that area.

24                                   For winter habitat, also  
25 considered sensitive habitat, should be their

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1 own requirements are 10 to 20 observations for  
2 caribou. There's that one occurrence there,  
3 we've have trail cameras on Yser point for the  
4 last two years and have not detected any  
5 caribou. There have been six aerial surveys  
6 that covered this area since 2013 when the  
7 original categorization was done. None of them  
8 have shown any caribou use.

9                               So I'm not sure the evidence  
10 that MECP is using for changing the category  
11 one habitat from Pic Island to include this  
12 area, east of Neys, as category one habitat.  
13 There is no confirmed use there. And no  
14 evidence that this should have been  
15 categorized as category one habitat. Category  
16 one habitat is by definition high use areas.  
17 The evidence does not support that.

18                               Next slide, please.

19                               This was raised as a  
20 potential issue for caribou impacts from noise  
21 from the project. We are using standard  
22 mitigation to reduce noise, light, dust and  
23 smells, so potential sensory impact on  
24 caribou.

25                               So there's concerns raised by

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1 receptors such as birds.

2                               As you can imagine, birds are  
3 fairly sensitive to noise given they defend  
4 their territories using noise and attract  
5 mates with it. So there is at -- ECCC does  
6 have thresholds identified for noise from  
7 mining operation and they are not exceeded by  
8 this project in that category one habitat.

9                               They do suggest that these  
10 noise thresholds are not appropriate for  
11 caribou but ECCC has not developed their noise  
12 threshold for caribou specifically. The  
13 provincial best management practices for  
14 mineral exploration and mining do not have  
15 thresholds for noise, for blasting or  
16 otherwise. They do provide several references  
17 in their justification that these are not an  
18 appropriate threshold to be used. None of them  
19 were directly related to mines and noise. The  
20 references of those scientific publications  
21 that were provided deal with outpost camps,  
22 Caribou and open tundra habitats, reindeer and  
23 alpine habitats - none directly addressed  
24 noise with impacts on caribou from mines.

25                               Next slide, please.

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1                   Inter-range connectivity is  
2 also raised as an issue between the northern  
3 continuous range and the coastal range. Based  
4 on the available evidence, we don't believe  
5 that it is a potential impact from the mine.  
6 The approximately 300 kilometres east/west  
7 span of those continuous ranges with caribou  
8 are going to walk through the discontinuous  
9 range -- through the discontinuous range to  
10 the coastal range, that's about an east/west  
11 distance of the coast is about 200 kilometres.

12                   The footprint -- the  
13 east/west footprint of the mine is only about  
14 six kilometres wide so it doesn't seem  
15 credible to us that caribou that are expected  
16 to walk through about 100 kilometres of  
17 disturbed habitat in the discontinuous range  
18 would not be able to walk around the mine  
19 should they happen to encounter the mine  
20 during their travels. They could easily detour  
21 around the project given that the average  
22 wildfire size in the Pic River forest is over  
23 1,000 hectares, equivalent to the size of the  
24 mine site, footprint. Caribou detour around  
25 them because of increased predation risk due

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1 to moose using those cutovers and/or  
2 wildfires, so it just doesn't seem credible  
3 that the project will potentially impact on  
4 their south connectivity between these ranges.  
5 Assuming that caribou would actually move from  
6 those ranges to the coast, which is -- which  
7 is a big assumption.

8                               Next slide, please.

9                               Inter-range connectivity was  
10 also raised as potential issue impact from the  
11 project. So that would be the caribou walking,  
12 say between Pukaskwa National Park, where they  
13 are now extirpated, and moving to the west or  
14 if there is some caribou left in the coastal  
15 range west of the project would they be  
16 impacted moving east to Pukaskwa. We think  
17 there is a very low potential for this to  
18 occur in part because there are vanishingly  
19 few caribou, if any, left in the mainland  
20 coastal range that could potentially be  
21 affected.

22                               The second point would be  
23 caribou, if they are mobile enough to be  
24 expected to move over 100 kilometres from the  
25 continuous ranges to the north down to the

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1 coastal range, they are more than capable of  
2 diverting around the project should they  
3 decide to pass through the landscape nearby.

4                   The one caribou that was  
5 radio collared back in 1980s that was moved  
6 from the Slate Islands to the mainland, they  
7 walked along the coast, then they went up to  
8 Manitouwadge and then they went down to  
9 Pukaskwa. So they -- it's very difficult to  
10 predict where caribou may move but they are  
11 the most vagile terrestrial land mammal in the  
12 world; they are very mobile; they are very  
13 capable of walking around the site if they  
14 were disturbed by it.

15                   Post-closure there will be  
16 rehabilitation of the site. It still may be  
17 less suitable for passage than say an  
18 undisturbed forest but it still provides some  
19 opportunities to pass through the site if they  
20 didn't pass around it.

21                   Next slide, please.

22                   At the end of the day, the  
23 proposed project will likely need an overall  
24 benefit plan from -- overall benefit permit  
25 from MECP, and the project won't be able to

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1 proceed without one so at the end of the day,  
2 MECP has to be in agreement with the  
3 mitigation, both the amount and the type of  
4 mitigation that is done for this project, or  
5 the project will not be able to proceed.

6                   Although we believe that  
7 there are very low potential for any  
8 significant residual affects on caribou in the  
9 coastal range as a result of this project, we  
10 believe that there's still -- still mitigate,  
11 we have a draft mitigation plan for mitigation  
12 off site.

13                   We are engaged with  
14 Indigenous communities and the agencies to  
15 update that plan and expand that plan. MECP  
16 has indicated what we proposed was not enough  
17 mitigation so we're looking for further  
18 opportunities, potential other opportunities  
19 to improve that plan so that we can more than  
20 fully mitigate for any potential residual  
21 effects on site. With actions that could more  
22 directly -- benefit caribou in the coastal  
23 range and be on the mainland or offshore  
24 islands, so there will be continuing  
25 discussion and engagement with the agencies,

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1 Indigenous communities and other stakeholders  
2 to produce a plan that is suitable for  
3 approval by MECP.

4 We believe that given these  
5 overall benefit actions, the project would  
6 actually have a net positive benefit on  
7 caribou in the coastal range.

8 Next slide, please.

9 For other species at risk  
10 that use landscapes at a finer scale, we used  
11 the local study area for wildlife. So the site  
12 study area plus one kilometre buffer as shown  
13 in this slide here.

14 Next slide, please.

15 There are these two species  
16 at risk that are bats that use the project  
17 site. Little brown myotis was detected  
18 foraging on site. We did have one call of a  
19 northern myotis, couldn't positively identify  
20 it as northern myotis but it could have been a  
21 northern myotis. Myotis species can be  
22 difficult to tell from their acoustics in  
23 nature, depending on how far away and how long  
24 the call is. And the agencies have identified  
25 that potentially a small-footed bat could also

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1 be found -- no, it wasn't, sorry, not  
2 small-footed bat -- tri-coloured bat could  
3 also be found at site. We did not detect any  
4 tri-coloured bats on-site during our more than  
5 400 or so deployment days for acoustic  
6 recorders but we recognize that bats are  
7 mobile and could potentially use the site for  
8 foraging, although we have no evidence of it.

9                   There are no hibernacula for  
10 species at risk that are present at site.  
11 While the forest may provide some foraging  
12 opportunities and they could potentially roost  
13 on-site. So our proposed mitigation is to  
14 clear any trees on site outside of the bat  
15 roosting period. So outside the May 1st to  
16 August 31st period.

17                   So this would eliminate the  
18 risk of cutting down trees that might have  
19 roosting bats, be they solitary individuals or  
20 maternity colonies. Typically, little brown  
21 bats these days nest in anthropogenic  
22 structures, such as buildings, but it is  
23 possible they still are using their natural  
24 roosting habitat at the project site.

25                   So, as I said, we will clear

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1 those during the non breeding season and we're  
2 proposing, as a precautionary measure, to  
3 install some bat boxes in the surrounding  
4 local study area, which would help mitigate  
5 any potential loss of roosts, if they were, in  
6 fact, using the study area for more than just  
7 foraging. With this proposed mitigation  
8 efforts then we do not believe there will be  
9 any residual impacts on bats from the project.

10                               Next slide, please.

11                               The most common avian species  
12 at risk is Canada warbler; it's a special  
13 concern species that likes mixedwood forest  
14 with dense shrubby understory and lots of  
15 coarse woody debris. This habitat is  
16 relatively abundant on the project site as it  
17 is across much of the North Shore of Lake  
18 Superior. There will be a direct loss of this  
19 habitat as the site study area is cleared.

20                               Canada warbler that are  
21 currently nesting in the site study area would  
22 be displaced to adjacent suitable habitat in  
23 the surrounding landscape.

24                               Our proposed mitigation as  
25 for other songbirds is to clear outside the

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1 breeding season. Habitat is probably not  
2 likely limiting for this species along the  
3 North Shore. They are a species whose decline  
4 has largely been linked to deforestation in  
5 the wintering -- over wintering habitats in  
6 Columbia, in South America, so the forest --  
7 the suitable forests on the North Shore are  
8 probably not saturated by Canada warblers and  
9 there will probably be sufficient unoccupied  
10 habitat in the regional study area that could  
11 be used by these displaced birds. As a result,  
12 we do not believe there will be any residual  
13 effects on the species from the project.

14                                   Next slide, please.

15                                   There are several other bird  
16 species risks that have been observed once or  
17 twice at the study site, including rusty  
18 blackbird, evening grosbeak, eastern  
19 wood-pewee, olive-sided flycatcher. They have  
20 either only been observed once, or in the case  
21 of rusty blackbird, they were observed in 2012  
22 and have not been seen since. Foraging bald  
23 Eagles and peregrine falcon could potentially  
24 use the site for foraging but we have no  
25 evidence of them breeding on site. There is no

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1 suitable cliffs for peregrine falcon and we  
2 have not detected any bald Eagle nests during  
3 our aerial surveys or ground surveys.

4                   There's no evidence of use of  
5 the site by eastern whip-poor-will or common  
6 nighthawk; although we have conducted repeated  
7 surveys, both in person and with the acoustic  
8 recorders. We have not detected them on-site.

9                   So there are the standard  
10 mitigation for these species in terms of  
11 reducing noise impacts and training for  
12 drivers to reduce any potential risk of  
13 collision on the access road. Otherwise, for  
14 these species, we will also clear the forest  
15 outside the breeding season so we don't  
16 anticipate any significant impacts on breeding  
17 populations.

18                   We don't expect any long-term  
19 impacts on regional populations of these  
20 species and we don't think there are any  
21 significant residual effects.

22                   Next one.

23                   There are a couple species at  
24 risk that are insects that have been observed  
25 at site. Monarch butterfly adults have been

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1 seen at site. There are no milkweed plants  
2 observed on site, that are the obligate larval  
3 hosts for this species, so there's no larva  
4 breeding habitat so the adults are likely just  
5 vagrants. We will, for mitigation, use  
6 milkweed as part of the mix for the  
7 post-closure rehabilitation so we'll be adding  
8 net benefit to this species from the project.

9                                   There are yellow-banded  
10 bumble bees. It's a special concern species.  
11 They have been observed foraging on flowers  
12 roadside. They're not uncommon -- even though  
13 they are a species at risk, they are not  
14 uncommon on the North Shore of Lake Superior.  
15 They breed in forested habitats so there will  
16 be at least a temporary loss of potential  
17 breeding habitat. That habitat is not limiting  
18 in the regional study area and, for  
19 mitigation, we will include wild flower mix in  
20 the post-closure re-vegetation plans to  
21 provide nectar and pollen sources for this  
22 species as well as Monarch butterfly.

23                                   Next slide, please.

24                                   In summary -- and my  
25 apologies for the length of time but there was

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1 a lot to cover. Field work and the modelling  
2 that we've conducted since 2008 up and to  
3 date, we believe provides sufficiently  
4 detailed background information that  
5 characterize both the terrestrial environment  
6 to assess impacts from the project and develop  
7 a suite of appropriate mitigation techniques,  
8 standard or tailored that will successfully  
9 mitigate any impacts from the project.

10 We have conducted -- prepared  
11 draft plans for closure and for off site  
12 mitigation for caribou, which will continue to  
13 refine and help provide conceptual level that  
14 will be further refined for permitting.

15 These studies indicate that  
16 we can comply with relevant federal and  
17 provincial legislation and regulations with  
18 respect to wildlife, vegetation, and species  
19 at risk. And overall with the overall benefit  
20 measures that we will develop and implements  
21 for caribou, we believe the project can  
22 actually have an overall net benefit for --  
23 woodland caribou, which would otherwise not be  
24 provided if this project could not proceed.

25 Thank you. That brings my

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1 presentation to a close.

2 PANEL CHAIR: Thank you very  
3 much, Dr. Foster, and Mr. Fraser earlier.

4 Given the time, we're just at  
5 10:15 now. I think we'll take the morning  
6 break and we'll return at 10:30. Thank you  
7 very much.

8 --- Recess taken at 10:15 a.m.

9 --- Upon resuming at 10:32 a.m.

10 PANEL CHAIR: We're back.

11 Thank you very much to Generation PGM for this  
12 morning's presentation.

13 We're now going to move on to  
14 Environment and Climate Change Canada. So if  
15 you could come online and let us know if you  
16 would like your presentation up and to advance  
17 slides when you're ready.

18 PRESENTATION BY LESLIE CARPENTER:

19 MS. CARPENTER: Thank you,  
20 Madam Chair. Just doing a sound check.  
21 Everybody can hear me?

22 PANEL CHAIR: Very well. Thank  
23 you.

24 MS. CARPENTER: If they could  
25 put up my slides, that would be awesome.

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1 Perfect.

2 My name is Leslie Carpenter  
3 and I work for Environment and Climate Change  
4 Canada, which hereafter I'll refer to as ECCC  
5 or the department.

6 Before I start, I would like  
7 to begin with the land acknowledgement. From  
8 my location, I would like to acknowledge my  
9 presence on the homelands of the Mississauga  
10 Biigtigong Nishnaabeg, Haudenosaunee and  
11 Wendot peoples. I would also like to  
12 acknowledge that the proposed mine is located  
13 within the unceded and unsurrendered territory  
14 of Biigtigong Nishnaabeg First Nation.

15 A little bit about myself. I  
16 am the senior environmental specialist for the  
17 Canadian Wildlife Service or CWS in Ontario  
18 region that lead ECCC's review of the  
19 terrestrial wildlife issues surrounding the  
20 Marathon Palladium Project under the Canadian  
21 Environment Assessment Act.

22 For this presentation I'm  
23 accompanied by my colleagues Robert Clavering,  
24 who is the lead EA specialist for the EC  
25 review of this project, as well as Rich

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1 Russell, one of our migratory bird experts.

2 Next slide, please.

3 To start I would like to give  
4 an overview of today's presentation which is  
5 focused on wildlife. I'll speak about ECCC's  
6 role in the environmental assessment process  
7 for the project as well as ECCC's mandate in  
8 relation to wildlife. Then I'll explain ECCC's  
9 analysis of the proposed project, including  
10 the potential effects of the project, the  
11 proposed mitigation measures, and the proposed  
12 follow-up and monitoring programs. Finally,  
13 I'll present the various recommendations from  
14 ECCC to the joint review panel.

15 Next slide, please.

16 Here is the context for  
17 ECCC's mandate under the theme of biodiversity  
18 and conservation. ECCC administers and  
19 enforces the Migratory Birds Convention Act,  
20 also known as the MBCA, which prohibits the  
21 harming, killing, disturbance or destruction  
22 of migratory birds, nests or eggs.

23 ECCC also administers and  
24 enforces the Species At Risk Act, also known  
25 as SARA. General prohibitions under SARA

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1 include the protection of individuals and  
2 their residences for extirpated, endangered,  
3 and threatened species listed under schedule  
4 one for migratory birds and aquatic species  
5 wherever they are found and for other  
6 terrestrial species on federal land.

7                                 Since the project is not  
8 located on federal land and since there is no  
9 SARA critical habitat identified within or  
10 near the project footprint for the species at  
11 risk in this presentation, with the exception  
12 of boreal caribou, which I'll discuss in my  
13 next presentation this afternoon, SARA section  
14 32 and 33 do not apply.

15                                 Next slide, please.

16                                 Now, for an overview of the  
17 available habitat at the site and the  
18 potential effects on wildlife and their  
19 habitat. The project sites construction and  
20 operation phases have the potential to effect  
21 migratory birds through the loss or alteration  
22 of approximately 1,116 hectares of habitat,  
23 which 97 percent is considered forest habitat.  
24 GenPGM has stated that a small amount of  
25 habitat during the closure phase may be

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1 reforested.

2                                   Migratory bird mortality,  
3 nests and eggs disturbance and destruction  
4 could occur during vegetation clearing, site  
5 grading and site restoration or enhancement if  
6 conducted while the birds are using the  
7 affected areas, particularly during the  
8 nesting period.

9                                   Migratory bird breeding  
10 success could be impaired by elevated noise  
11 levels by adjacent project activity during the  
12 construction, operation and closure phases.  
13 Furthermore, disturbance and destruction of a  
14 migratory bird residence, as defined under  
15 SARA for extirpated, endangered, and  
16 threatened species, is also possible through  
17 project activities.

18                                   Within the 1,116 hectares  
19 permanent footprint of the project, the  
20 existing conditions include approximately  
21 1,081 hectares of forest habitat, 20.6  
22 hectares of wetland habitat, 13.8 hectares of  
23 water, 0.6 hectares of exposed rocks, and 0.2  
24 hectares of existing human disturbance.

25                                   Next slide, please.

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1                   As mentioned on the previous  
2 slide about wildlife in general, the potential  
3 effects on migratory birds as characterized by  
4 GenPGM include risk of mortality, nests and  
5 egg disturbance and destruction, specifically  
6 for forest birds, is predicted that  
7 approximately 1,081 hectares of forest habitat  
8 will be lost as a result of this project,  
9 which is predicted to displace approximately  
10 8,700 birds of 72 bird species. Approximately  
11 3,500 forest birds are expected to be affected  
12 by noise. The waterfowl, approximately 17.7  
13 hectares of aquatic habitat will be lost,  
14 which will displace approximately 10 to 20  
15 pairs of birds.

16                   Next slide, please.

17                   There is also potential  
18 effects on species at risk migratory birds  
19 which include habitat loss, sensory  
20 disturbance, and mortality. There is some  
21 uncertainty surrounding what restoration  
22 efforts will occur at the site post-closure;  
23 however, it appears there will be minimum  
24 reforestation of the landscape. As a result,  
25 there will be long-term and potentially

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1 permanent habitat loss for these species at  
2 risk migratory birds.

3                               The project affects on forest  
4 birds, specifically Canada warbler, which is  
5 listed as threatened under SARA, include the  
6 loss and alteration of approximately 1,071  
7 hectares of forest habitat which will affect  
8 approximately 92 individuals of this species.  
9 This project is also predicted to affect  
10 Canada warbler through sensory disturbances,  
11 such as lighting, noise, and vibrations, as  
12 well as potential mortality through collisions  
13 and habitat removal.

14                               With respect to the project  
15 effects on other species at risk migratory  
16 birds, there will be approximately 1.4  
17 hectares of habitat loss for olive-sided  
18 flycatcher, which is listed as threatened  
19 under SARA. GenPGM survey efforts revealed  
20 there is likely suitable breeding habitat  
21 within the local study area, or LSA. This  
22 project is predicted to also effect these  
23 birds through sensory disturbances, such as  
24 lighting, noise, and vibrations, as well as  
25 potential mortality through collisions and

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1 habitat removal.

2                                 There will be approximately  
3 1.2 hectares of habitat loss for both eastern  
4 wood-peewee and evening grosbeak, which are  
5 both listed as special concern under SARA.  
6 GenPGM's survey efforts reveal there is  
7 potentially suitable breeding habitat within  
8 the LSA for both these species.

9                                 Similar to the species  
10 mentioned above, the project is predicted to  
11 also affect these birds through sensory  
12 disturbances, such as lighting, noise, and  
13 vibration, as well as potential mortality  
14 through collisions and habitat removal. And  
15 just to make a correction on this slide, there  
16 will be approximately 48 hectares of habitat  
17 loss for common nighthawk, and 936 hectares of  
18 habitat loss for eastern whip-poor-will, which  
19 are both listed as threatened under SARA. The  
20 value for eastern whip-poor-will was increased  
21 by GenPGM in IR 6-29 record number 950 after  
22 revising their model.

23                                 Both eastern whip-poor-will  
24 and common nighthawk have not been observed  
25 within the LSA based on the GenPGM's survey

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1 efforts. However, there will be a potential  
2 for an increase in mortality on the mine site  
3 during operations as they birds may be  
4 attracted to the access roads.

5 Next slide, please.

6 This slide discusses GenPGM's  
7 proposed mitigation and monitoring for  
8 migratory birds as well as species at risk  
9 migratory birds affected by the project.

10 In order to avoid harm or  
11 disturbance to migratory birds and any  
12 destruction of the nests or eggs, GenPGM has  
13 committed to avoid vegetation clearing during  
14 the migratory bird breeding season, which is  
15 the end of March to the end of August. This  
16 mitigation is supported by ECCC's approach to  
17 avoiding harm to migratory birds.

18 GenPGM has noted that where  
19 clearing outside this window is not practical  
20 and the area to be disturbed is relatively  
21 small and/or not complex, nest surveys by  
22 trained biologists will be conducted to reduce  
23 the risk of mortality.

24 GenPMG has committed to  
25 potentially reforesting the access road and

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1 the transmission line post-closure of the mine  
2 in order to address some of the 1,081 hectares  
3 of forest habitat loss; however, an exact  
4 number of hectares to be reforested has not  
5 been provided.

6                           Other areas of the project  
7 footprint may be re-vegetated but this will  
8 not include forest habitat. GenPGM has stated  
9 that re-vegetation refers to shrubs and  
10 herbaceous vegetation, for example, forbs and  
11 mosses. The remaining portions of the project  
12 footprint will have some sort of aquatic  
13 habitat which may not be supported of wildlife  
14 species or rock fill from the mining  
15 operations.

16                           Sensory mitigation includes  
17 directional lighting and standard measures to  
18 address noise and vibrations.

19                           In order to mitigate the  
20 project effects on Canada warbler, GenPGM has  
21 committed to stockpiling some course  
22 (indiscernible) debris during site clearing  
23 for future rehabilitation efforts on the site.

24                           In order to mitigate the  
25 project effects on common nighthawk and

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1 eastern whip-poor-will, GenPGM has committed  
2 to species at risk training, signage and speed  
3 limits to mitigate road mortalities.

4 In general, the mitigation  
5 and enhancement measures proposed by GenPGM  
6 are similar for species at risk migratory  
7 birds as for other non-songbirds.

8 Next slide, please.

9 ECCC's recommendations are in  
10 addition to GenPGM's commitment and indicate  
11 where ECCC will continue to have a role. ECCC  
12 has provided standard advice to avoid any harm  
13 or disturbance to migratory birds and any  
14 destruction of their nests or eggs by  
15 restricting vegetation clearing during the  
16 bird breeding periods. ECCC advises against  
17 using nest sweep techniques to determine nest  
18 activity except under very limited  
19 circumstances.

20 Because the ability to detect  
21 nests is very low while the risk is high that  
22 searchers may disturb or stress nesting  
23 migratory birds and increase the risk of birds  
24 abandoning their nests.

25 General migratory bird

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1 recommendations include develop in  
2 consultation with ECCC and the province of  
3 Ontario a reclamation plan that describes the  
4 management of habitat requirements for a  
5 variety of forest birds and waterfowl,  
6 implement mitigation measures consistent with  
7 ECCC's guidance on avoiding harm to migratory  
8 birds, continue the forest bird monitoring  
9 program and Nightjar specifically for common  
10 nighthawk and eastern whip-poor-will and  
11 waterfowl surveys during the construction,  
12 operations and closure phases of the project.

13                                   Use that information along  
14 with baseline survey results to verify affects  
15 predictions and corresponding reclamation  
16 efforts post-closure.

17                                   Recommendations related to  
18 species at risk migratory birds includes,  
19 continued to characterize Canada warbler,  
20 olive-sided flycatcher, eastern wood-peewee,  
21 evening grosbeak habitat in the site study  
22 area, or the SSA, and use that information  
23 with baseline survey results to determine  
24 appropriate mitigation as part of the overall  
25 reclamation plan.

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1                   Continued to characterize  
2 common nighthawk and eastern whip-poor-will in  
3 the SSA and use the results to identify areas  
4 to be targeted for Nightjar surveys as well as  
5 appropriate mitigation as part of the overall  
6 reclamation plan.

7                   Continue Nightjar surveys and  
8 ensure occupied nesting areas are protected  
9 during the core breeding period until the  
10 young have naturally and permanently left the  
11 vicinity of the nest.

12                   ECCC's expert advice is that  
13 the project will likely not disturb the  
14 regional stability of migratory birds  
15 populations, provided that GenPGM meets the  
16 commitments that they have stated.

17                   ECCC advises the effects of  
18 the project on the regional bird populations  
19 can be effectively mitigated. Specifically for  
20 species at risk migratory birds, ECCC advises  
21 that the project will cause a permanent loss  
22 of breeding habitat for many of these birds  
23 which will directly impact the local  
24 populations. However, displaced birds will  
25 likely relocate to adjacent similar habitats.

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1                    Provided that GenPGM meets  
2 the commitments that they have stated, the  
3 effects of the project on the regional  
4 populations can be effectively mitigated.

5                    Next slide, please.

6                    Now, I will go through the  
7 potential effects on species at risk that are  
8 not migratory birds.

9                    First, for little brown  
10 myotis and northern myotis, which are listed  
11 as endangered under SARA, there will be  
12 approximately 1,000 hectares of potential bat  
13 foraging and day roost habitat loss as a  
14 result of this project. There will be  
15 approximately 39 hectares of potential bat  
16 maternity roost habitat loss as a result of  
17 this project.

18                    This project is also  
19 predicted to affect little brown myotis and  
20 northern myotis through sensory disturbance,  
21 such as lighting, noise, and vibrations, as  
22 well as potential mortality through collisions  
23 and habitat removal.

24                    Based on GenPGM's survey  
25 efforts, no hibernacula or little brown myotis

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1 and northern myotis have been located in the  
2 LSA or SSA. For rusty blackbird, which is  
3 listed as a special concern species under SARA  
4 and not a migratory birds, there will be  
5 approximately 17.7 hectares of breeding  
6 habitat loss specifically small waterbodies  
7 with adjacent conifer forest based on GenPGM's  
8 survey efforts. The project is also predicted  
9 to effect rusty blackbird through sensory  
10 disturbances, such as lighting, noise, and  
11 vibrations, and potential mortality through  
12 collisions and habitat removal.

13                                   For Monarch and yellow-banded  
14 bumble bee, which are both listed as special  
15 certain under SARA, based on GenPGM's survey  
16 efforts, there will be approximately 1,116  
17 hectares of potential Monarch and  
18 yellow-banded bumble bee habitat loss as both  
19 of these species have been observed within the  
20 SSA and LSA. The project is also predicted to  
21 affect these species through potential  
22 mortality of individuals from collisions and  
23 habitat removal.

24                                   Next slide, please.

25                                   GenPGM has committed to

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1 monitoring a mitigation for various species at  
2 risk, the little brown myotis and northern  
3 myotis. Prior to the clearing of the SSA,  
4 GenPGM will install multiple bat boxes and  
5 rocket boxes in the LSA and the adjacent  
6 regional study area, or RSA, in order to  
7 address some of the lost roosting habitat.

8                               Specifically for rusty  
9 blackbird, similar mitigation is proposed as  
10 for other non-SAR birds, including potential  
11 progressive rehabilitation of the site. GenPGM  
12 has described potential progressive  
13 rehabilitation as efforts to be taken  
14 progressively, reclaim and close out inactive  
15 areas where practical during the mining  
16 operations. Some examples can include  
17 stockpiling overburden and topsoil where it's  
18 been stripped from the site to facilitate  
19 progressive and final rehabilitation, as well  
20 as vegetation trials at specific locations  
21 within the site.

22                               The yellow-banded bumble bee  
23 and Monarch, the use of native seed mixes  
24 during the rehabilitation of the site study  
25 area during the closure phase, including

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1 inclusion of selected wild flower species in  
2 the seed mixes to provide additional nectar  
3 sources throughout the growing season and the  
4 inclusion of common milkweed.

5 Next slide, please.

6 As mentioned previously,  
7 since the project is not located on federal  
8 lands and since there is no SARA critical  
9 habitat within or near the project footnote  
10 for the species I just discussed -- boreal  
11 caribou will be discussed this afternoon --  
12 SARA section 32 and 33 do not apply. However,  
13 it's important for ECCC to provide these  
14 recommendations to protect these species and  
15 their habitat when asked for advice.

16 More little brown myotis and  
17 northern myotis, ECCC has recommended to  
18 provide details on the avoidance and/or  
19 migration measures that will be in place  
20 should a hibernaculum be discovered within the  
21 SSA. Also to avoid tree clearing from April  
22 15th to August 31st, in order to correspond  
23 with the timing of emergence from hibernation  
24 and the maternity period.

25 If limited clearing must be

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1 completed between April 15 and August 31st,  
2 then bat maternity surveys using the NDMNRF  
3 protocol should be conducted to confirm bat  
4 presence or absence in suitable trees and that  
5 appropriate protection measures be applied.

6                   Timing of tree removals will  
7 also need to take into account potential  
8 impacts to migratory birds. Implement a  
9 monitoring program to identify which bat and  
10 rocket boxes are occupied with the focus on  
11 little brown myotis and northern myotis, as  
12 well as any potential adaptive mitigation if  
13 necessary.

14                   Consult the best management  
15 practices for bats in British Columbia. Mine  
16 developments in inactive mine habitats to  
17 inform the mitigation and enhancement measures  
18 implemented to reduce impacts of lasting  
19 activities for bats.

20                   Key conditions on  
21 acceptability of disturbance to bats and their  
22 habitats include not acceptable in the 100  
23 meter core area around the blasting site at  
24 any time, possibly acceptable in a one  
25 kilometres special management zone around the

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1 blasting at any time with review by an  
2 experienced bat biologist, not acceptable  
3 within specific timing windows. For Ontario  
4 these would include for maternity sites, avoid  
5 activities between April 15th and August 31st;  
6 and for hibernation sites, avoid activities  
7 between October and April.

8                   ECCC advises the project will  
9 cause a permanent loss of little brown myotis  
10 and northern myotis roosting and foraging  
11 habitat through a direct loss of these habitat  
12 types, directly impacting the local  
13 populations that are already affected by  
14 white-nose syndrome. However, these bat  
15 species may relocate to adjacent similar  
16 habitats. Provided that GenPGM meets the  
17 commitments that they stated and the  
18 recommendations provided by ECCC, the effects  
19 of the project on the regional little brown  
20 myotis and northern myotis populations can be  
21 effectively mitigated.

22                   Next slide, please. Slide 12.

23                   ECCC's recommendation for  
24 rusty blackbird includes to continue to  
25 characterize rusty blackbird habitat in the

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1 SSA and use the results to identify areas to  
2 be targeted for forest bird monitoring program  
3 surveys, as well as appropriate mitigation as  
4 part of the overall reclamation plan. ECCC  
5 advises that the project will cause a  
6 permanent loss of habitat for rusty blackbird;  
7 however, they are tolerant of human activity  
8 and constant but temporary noise from ongoing  
9 operations and it may not limit their use of  
10 adjacent suitable habitat.

11                                Provided that GenPGM meets  
12 the commitments that they have stated, the  
13 effects of the project on regional rusty  
14 blackbird population can be effectively  
15 mitigated.

16                                ECCC's recommendations for  
17 yellow-banded bumble bee and Monarch. Create  
18 additional breeding habitat for both Monarch  
19 and yellow-banded bumble bee for forest  
20 reclamation is not possible as part of the  
21 overall reclamation plan.

22                                ECCC's expert advise is the  
23 project will cause a permanent loss of Monarch  
24 and yellow-banded bumble bee habitat directly  
25 impacting the local populations. However,

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1 these displaced species should be able to  
2 relocate to adjacent similar habitats,  
3 provided that GenPGM meets the commitments  
4 they stated, the effects of the project on the  
5 regional Monarch and yellow-banded bumble bee  
6 populations can be effectively mitigated.

7 Next slide, please.

8 That conclude ECCC's  
9 presentation. Interested parties can obtain  
10 more detailed information about our review by  
11 referring to our written submission which  
12 appears on the registry as document number  
13 1086. Thank you.

14 PANEL CHAIR: Thank you very  
15 much, Ms. Carpenter, and sorry for the slide  
16 interruption. We appreciate your presentation.

17 I, now, would like to turn it  
18 over to Parks Canada for their presentation  
19 this morning.

20 MS. CHERRY: Thank you, Madam  
21 Chair. This is Heather Cherry. The schedule  
22 had Ontario presenting now but if you would  
23 like Parks Canada to go first, we are able to.

24 PANEL CHAIR: Can you give me  
25 one minute, please?

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1 MS. CHERRY: Sure.

2 PANEL CHAIR: Thank you very  
3 much. I'm very sorry, Ms. Cherry. You're  
4 right. I'm way ahead of myself looking into  
5 the afternoon. If you're okay to follow the  
6 presentation that is on the schedule that I  
7 missed, we would appreciate it. Thank you.

8 So I am, at this time, going  
9 to call on the Ontario Ministry of Northern  
10 Development, Mines, Natural Resources and  
11 Forestry. Good morning.

12 PRESENTATION BY LAURA DARBY:

13 MS. DARBY: This is Laura  
14 Darby. Good morning. Please pull up CIAR  
15 number 1133. Thank you.

16 Good morning, Madam Chair,  
17 panel members, participants and viewers. My  
18 name is Laura Darby. I am acting regional  
19 planning ecologist for the northwest region of  
20 the regional operations division of the  
21 Northern -- or Natural Resources and Forestry  
22 portion of the Ministry of Northern  
23 Development, Mines, Natural Resources and  
24 Forestry, commonly referred to MNRF.

25 I have over eight years

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1 experience working with the subject matter  
2 both as a regional planning ecologist and as a  
3 management bio.

4 I'll be speaking on behalf of  
5 our ministry's review team in regards to our  
6 interests in terrestrial wildlife as they  
7 relate to the Marathon Palladium Project.

8 Next slide, please.

9 Our ministry has been  
10 involved since the early onset of the project  
11 actively reviewing wildlife material  
12 submitted. And we've been considering  
13 information in relation to our mandated and  
14 legislated interest, such as our strategic  
15 goal for sustainable resource management today  
16 and into the future to ensure Ontario's  
17 healthy and diverse ecosystems along with  
18 being mindful of our Fish and Wildlife  
19 Conservation Act and Lakes and Rivers  
20 Improvement Act legislation.

21 So when we're considering  
22 things, this includes looking at the  
23 assessment of potential environmental impacts,  
24 the proposed mitigation measures and the  
25 sufficiency of information provided to meet

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1 future permitting requirements that may be  
2 related to us.

3                               So what are our ministry's  
4 overarching takeaways from wildlife.

5                               Next slide, please.

6                               Just looking ahead, I'm going  
7 to speak to habitat characterization including  
8 its availability and suitability, currently  
9 and into the future. From this I'll look at  
10 speaking to project impacts to wildlife and to  
11 add more context, we'll look at a couple of  
12 examples, including avian species and  
13 amphibians, and then I'll wrap up with a short  
14 and high level summary of anticipated affects  
15 and a few recommendations we are putting  
16 forward.

17                               Next slide, please.

18                               Habitat characterization is  
19 key because all wildlife depends on its  
20 habitat for food, shelter, water, and space to  
21 sustain themselves. So considering the PGM  
22 project, there is an initial loss of habitat  
23 through land clearing -- and just a correction  
24 that should a 1,081 hectares -- particularly  
25 in the site study area.

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1                   The project recognizes the  
2 likelihood of long-term loss of productive  
3 commercial forested habitat in the site study  
4 area. They also incorporate detection of  
5 wildlife potentially impacted from land  
6 clearing as part of their project activities,  
7 such as looking for nests, dens, beaver lodges  
8 and dams, et cetera. In addition, they  
9 identify mitigation measures to reduce impact  
10 of loss, such as minimizing footprint, using  
11 timing windows to avoid sensitive wildlife  
12 lifecycle periods, and planning residual  
13 forest patches to allow for escape routes to  
14 encourage movement away from high risk areas  
15 and to prevent wildlife from becoming trapped.

16                   And after the initial loss,  
17 there is a change in the habitat post  
18 rehabilitation that needs to be recognized.  
19 The habitat will change from continuous forest  
20 to fragmented forest and efforts are to be  
21 made to reforest the area as part of  
22 rehabilitation. However, these efforts are  
23 anticipated to only achieve partial  
24 reforestation.

25                   So there will be some

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1 conversion to open areas with grasses and an  
2 increase in edge habitat and there is the  
3 predicted loss of productive commercial forest  
4 and currently, the project leaves future  
5 forested conditions unspecified by not  
6 forecasting future ecosites and/or vegetation  
7 community types.

8                               So this change, habitat  
9 change may result in a shift in local species  
10 to edge dominated habitats in the site study  
11 area. And by edge dominated, I'm referring to  
12 the increase in forest and open area interface  
13 compared to its original unbroken continuous  
14 forested condition.

15                              This edge, or transitional  
16 area, affects population and community  
17 structures that occur at the boundary of the  
18 two habitats. Sometimes resulting in greater  
19 species numbers and population densities along  
20 the edge, compared to either interior  
21 community that abuts it.

22                              So to give us some more  
23 context, we're next going to look at how these  
24 habitat changes impact wildlife groups more  
25 specifically.

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1                   Next slide, please.

2                   So first significant loss --  
3 significant long-term impacts to wildlife with  
4 small home ranges are anticipated, especially  
5 ones who solely or primarily inhabit the site  
6 study area, such as amphibians. While they  
7 will have less of an impact on species with  
8 large home ranges who are able to disperse  
9 more readily, moose being a great example.

10                  There will also be a  
11 fragmentation and loss of continuous forested  
12 habitat in the site study area and the  
13 creation of new edge habitat along the  
14 boundary with the local study area, which will  
15 fundamentally change the shelter and space  
16 upon which wildlife depends in this area.

17                  And this will result in  
18 displacement of wildlife, such as the shift of  
19 avian species into the surrounding local study  
20 area.

21                  The project considers the  
22 initial loss of habitat but lacks detail on  
23 predicted future habitat conditions.  
24 Therefore, future wildlife habitat suitability  
25 at the site study area scale is conceptual in

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1 nature and known to be altered from the  
2 existing composition given the proposed  
3 changes in habitat through decommissioning and  
4 rehabilitation.

5                               This lack of detailed future  
6 conditions makes it challenging to assess  
7 long-term impacts to wildlife habitat,  
8 evaluate the effectiveness, and progress of  
9 decommissioning in rehabilitation, and  
10 adaptively manage or set targets and goals for  
11 achieving the desired future habitat outcome.

12                              Another significant impact of  
13 the project is the loss of lakes and water  
14 courses in the site study area, including  
15 fishless waterbodies that support amphibian  
16 breeding habitat; therefore, in this area,  
17 wildlife is seeing impacts not only to their  
18 food, shelter, and habitat space but also the  
19 water on which they depend.

20                             The project proposes to  
21 translocate and remove wildlife, such as  
22 amphibian and beaver, through project  
23 activities on-site. Which I'll touch on more  
24 in upcoming slides.

25                             So let's look at some

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1 result.

2                               So in this case, it is  
3 anticipated that the habitat changes will  
4 adversely affect interior course preferring  
5 bird species while potentially benefitting  
6 edge loving species. And overall our ministry  
7 notes this habitat fragmentation; however, we  
8 deem it to be tolerable at this size and  
9 scale.

10                              Next slide, please.

11                              So let's talk about  
12 amphibians. So throughout the presentations in  
13 the last week and a bit, we heard the term  
14 "overprinting" a lot. So overprinting is the  
15 overlap of the project footprint on existing  
16 features resulting in their removal. So, in  
17 this case, overprinting of the project results  
18 in the loss of candidate significant wildlife  
19 habitat. And what is significant wildlife  
20 habitat.

21                              So remember that wildlife  
22 habitat is the food, shelter, water, and space  
23 a population needs to sustain themselves.  
24 Significant wildlife habitat means that the  
25 habitat is ecologically important in terms of

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1 features, function, representation, or amount,  
2 and contributes to the quality and diversity  
3 of an identifiable geographic area or system.

4                                 So, in this case, the  
5 fishless lakes provide a unique ecologically  
6 important habitat for amphibians that is  
7 uncommon and unprecedented in this geography.  
8 So the loss of those identified fishless lakes  
9 and streams in the site study area means that  
10 there is a loss of amphibian habitat depended  
11 upon aquatic environments, impacting  
12 salamanders, newts, frogs and toads, which can  
13 have both aquatic and terrestrial life stages.

14                                 In addition, there's also the  
15 consideration of amphibians dependent upon  
16 terrestrial habitats such as red back  
17 salamanders and tree frogs. The project notes  
18 the potential for relocating some animals  
19 before the destruction of habitat, and while  
20 the success and feasibility of this is  
21 uncertain, the Ministry supports this as one  
22 of the best options to mitigate the impacts of  
23 overprinting. It poses risks concerning the  
24 species ability to survive and adapt to new  
25 locations along with the pressures it poses to

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1 exist in populations at translocation areas,  
2 such as competition, predation, and carrying  
3 capacity.

4 And in part, risks will also  
5 depend on finding suitable relocation habitat,  
6 the feasibility of species capture, and the  
7 timing of movement.

8 Next slide, please.

9 Now, in order to carry out  
10 some of the proposed activities in mitigation  
11 measures, some permits and authorizations will  
12 be required from our ministry. And here is  
13 just a very quick overview of project  
14 activities that fall within scope of the Fish  
15 and Wildlife Conservation Act and the Lakes  
16 and Rivers Improvement Act.

17 The project will require the  
18 following authorizations from our ministry  
19 under the Fish and Wildlife Conservation Act.

20 One, wildlife scientific  
21 collectors authorization, which covers the  
22 collection and release of wildlife at capture  
23 sites within a short time period, such as  
24 wildlife relocations, or lethal sampling and  
25 possession of dead specimens.

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1                   Two, authorization to  
2 interfere with or destroy a black bear or  
3 furbearer mammal den, beaver dam, or black  
4 bear in a den, which will cover various issues  
5 the project may encounter with bears, beavers,  
6 and other furbearer mammals.

7                   Third, potentially  
8 destruction of the -- destruction and  
9 possession of nests and/or eggs authorization,  
10 which authorizes the licensee to destroy  
11 and/or possess nests or eggs which may be  
12 required as a result of the activities  
13 proposed.

14                   So where there is  
15 insufficient information available to meet our  
16 permitting needs additional information will  
17 be required. Such will be the case when  
18 considering sites for relocating amphibians  
19 where there are gaps in knowledge, both the  
20 existing community structures and densities at  
21 both the source and relocation areas.

22                   Conditions of any  
23 authorization will address timing windows for  
24 avoiding disruption to wildlife lifecycles,  
25 such as relocation timing. And there will also

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1 be considerations and conditions associated  
2 with wildlife in Lakes and Rivers Improvement  
3 Act approvals, such as significant wildlife  
4 habitat.

5                               If and when Lakes and Rivers  
6 Improvement Act authorizations are required  
7 wildlife will be considered as a part of the  
8 application review and any conditions  
9 determined on a case by case basis.

10                              Next slide, please.

11                              Therefore, in summary our  
12 ministry noted numerous positive strategies by  
13 the proponent to address wildlife concerns,  
14 notably re-vegetation strategies and native  
15 planting and objectives towards creating  
16 conifer dominated forest as much as possible  
17 in the rehabilitation of the project site.  
18 There are some effects anticipated as a result  
19 of the project.

20                              There will be impacts to  
21 local wildlife with small home ranges in the  
22 site study area while wildlife with large home  
23 ranges are anticipated to be less impacted due  
24 to the greater ability to physically avoid  
25 physical activities -- project activities.

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1                   And the creation of less  
2 continuous habitat conditions may have a  
3 long-term effect changing the local study area  
4 to more fragmented mosaic based on the  
5 creation of more edge features and open areas  
6 in addition to adjacent -- being adjacent to  
7 similarly disturbed habitat.

8                   Overall, the Ministry  
9 recommends the following actions be  
10 considered. One, describe the proportions of  
11 the site study area habitat that are to be  
12 rehabilitated by indicating their targeted  
13 future habitat types, including forecasted  
14 ecosites and/or vegetation community types.  
15 This will assist with the developing  
16 appropriate monitoring targets and goals upon  
17 which to evaluate decommissioning and  
18 rehabilitation efforts, in addition to  
19 allowing for a better understanding of the  
20 future wildlife utilization and colonization.

21                   Two, implement the proponents  
22 proposed timing window to mitigate potential  
23 impacts on displacement of wildlife, which  
24 they included to have no forest clearing  
25 between May 1st and August 31st.

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1                                   And third, implement  
2 strategies to permit animal migration in and  
3 around the site study area to ensure avoidance  
4 of high risk areas as they will be integral to  
5 successful rehabilitation and will improve the  
6 likelihood of wildlife more readily returning  
7 to the site upon closure.

8                                   Next slide, please.

9                                   Overall, thank you for your  
10 time and attention today. If there is  
11 interest, you can look up our written  
12 submissions for CIAR number 1078, and I will  
13 be available for the question period at the  
14 end of the session. Thank you so much.

15                                  PANEL CHAIR: Thank you very  
16 much, Ms. Darby. Appreciate your presentation  
17 this morning.

18                                  With that, and I think I have  
19 this right this time, we are going to proceed  
20 to one part of our questioning and that's  
21 related to terrain and soils and vegetation.  
22 So I will begin by asking if Environment and  
23 Climate Change Canada, if any of you have  
24 questions for presenters this morning related  
25 to terrain and soils and vegetation.

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1 MS. CARPENTER: Leslie  
2 Carpenter for the record. No ECCC does not  
3 have any questions at this time. Thank you.

4 PANEL CHAIR: Thank you, Ms.  
5 Carpenter.

6 Northern Development, Mines,  
7 Natural Resources and Forestry, do you have  
8 any questions of presenters this morning on  
9 terrain and soils and vegetation.

10 MS. DARBY: Laura Darby. No we  
11 do not. Thank you very much.

12 PANEL CHAIR: Thank you, Ms.  
13 Darby.

14 Other participants on the  
15 line, do you have questions related to those  
16 topic areas for any of the presenters this  
17 morning?

18 Okay, seeing none.

19 Generation PGM, do you have  
20 any questions for presenters this morning on  
21 terrain, soils and vegetation?

22 MR. BARRETTO: Good morning,  
23 Madam Chair. Jeremy Barretto for the record.  
24 Generation PGM has no questions. Thank you.

25 PANEL CHAIR: Thank you, Mr.

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1 Barretto.

2                                 With that, I will turn it  
3 over for panel questioning, and Ms. Drescher  
4 will begin, thank you.

5 QUESTIONS SESSION:

6                                 PANEL MEMBER DRESCHER: Thank  
7 you, Madam Chair, and good morning.

8                                 These are questions that will  
9 be posed to GenPGM primarily with some  
10 follow-up to MNRF and to ECCC.

11                                So I would like to start off  
12 the questioning -- hello, Mr. Anwyll.

13                                MR. ANWYLL: Good morning.

14                                PANEL MEMBER DRESCHER: And I  
15 have a number of questions on vegetation and  
16 the focus of these questions will be on  
17 vegetation. Other questions on migratory birds  
18 and species at risk will follow likely in the  
19 afternoon. So this will be primarily focused  
20 on vegetation. Thank you.

21                                In IR 6-16, the review panel  
22 asked Generation PGM to provide more clarity  
23 on habitat types it expects will occupy the  
24 closure landscape. That is supported by MNRF  
25 as we just heard in the previous presentation.

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1                                   At this stage in the  
2 environmental assessment with little  
3 information on what habitat types could exist  
4 in the SSA, site specific area, post-closure,  
5 there is uncertainty with regards to the  
6 project effects to vegetation, wildlife and  
7 current use. Further, reclamation commitments  
8 include little specificity, phrases such as  
9 "where possible"; "to the extent possible";  
10 "when necessary is there"; "as much as  
11 possible"; and "where appropriate and  
12 technically feasible," are used.

13                                   So in keeping that in mind,  
14 we're looking for more specificity and the  
15 first question will be directed onto the mine  
16 rock storage area. GenPGM has indicated that  
17 the mine rock storage area is a potential  
18 eventual location for even-aged conifer forest  
19 pending vegetation trials.

20                                   My first question is, could  
21 you describe, please, the key conditions to  
22 ensure the success of conifer forest growth on  
23 the MRSA, and the second question is, discuss  
24 -- could you discuss, please, how certain you  
25 are that these conditions will be met at

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1 closure?

2 MR. ANWYLL: Thank you for the  
3 question, Panel Member Drescher, I will caucus  
4 for a moment, please.

5 Thank you, Panel Member  
6 Drescher. I'll introduce Dr. Rob Foster to  
7 help us clarify the answer.

8 PANEL CHAIR DRESCHER: Thank  
9 you very much.

10 DR. FOSTER: Thank you, Madam  
11 Chair.

12 I'll answer the question in a  
13 couple parts, if I may. Make sure I cover the  
14 salient issue raised by your question.

15 The ecological requirements  
16 for restoring forest primarily are adequate  
17 soil, texture and depth and the more --  
18 --- (Reporter interruption)

19 DR. FOSTER: I'll repeat in  
20 case it wasn't captured earlier.

21 For conifer tree growth to be  
22 supported, it would be sufficient soil depth  
23 and type and adequate moisture depending on  
24 the species. So I'm not sure where the  
25 commitment to restore conifer forest on the

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1 managed box stockpile was made. It is our  
2 understanding that -- shouldn't say  
3 understanding.

4                               It is our intent to conduct  
5 vegetation trials during progressive  
6 rehabilitation during the operational phase of  
7 the mine using some of the abundant stockpiled  
8 soil that we have to determine the conditions  
9 that promote the best growth for forest or  
10 conifer trees on the benches of the rock  
11 stockpile. Additional areas that are being  
12 considered and are potentially suitable for  
13 conifer re-vegetation on-site include the  
14 access road, the transmission line and flat  
15 areas of the site outside the process solids  
16 management facility that where soil that is  
17 being stockpiled can be spread and would  
18 likely be suitable for conifer growth. But it  
19 is those trials that we plan to undertake  
20 during operations that will help determine  
21 what's the best application for trying to  
22 return conifer forest on the managed rock  
23 stockpile.

24                               Did that answer your  
25 question?

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1 --- (DISCUSSION OFF THE RECORD)

2 PANEL MEMBER DRESCHER: Thank  
3 you, Dr. Foster.

4 For your reference, it was  
5 CIAR number 976, page 44, where the suggestion  
6 was made it would be located on the MRSA.

7 I was just wondering, for the  
8 record, could you categorize for us what is  
9 the total area that will be planted on the  
10 MRSA?

11 DR. FOSTER: I'll have to  
12 confer with my colleagues if you don't mind.

13 PANEL MEMBER DRESCHER: Thank  
14 you.

15 DR. FOSTER: Can you hear me?

16 PANEL MEMBER DRESCHER: Yes,  
17 thank you.

18 DR. FOSTER: I just wanted to  
19 make sure that the audio was working.

20 Thank you for the question.  
21 As per the mine rehabilitation code, it's a  
22 requirement that all mine affected areas in  
23 Ontario are re-vegetated to self-sustaining  
24 vegetation. The mine rock stockpile is  
25 approximately 99 hectares at closure. The

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1 concerns with the approach taken and the  
2 potential level of success and, as well, I  
3 would appreciate your comments on what would  
4 be a reasonable approach to confer  
5 reforestation in and around the MRSA  
6 specifically but on the site in general.

7 MS. DARBY: I would like to  
8 take a moment to caucus, if I may.

9 PANEL MEMBER DRESCHER: Thank  
10 you.

11 MS. DARBY: Thank you for your  
12 question. So I'm going to answer this in two  
13 parts since you initially mentioned the MRSA  
14 and then the rest of the site.

15 Our understanding is, like,  
16 they're still in the very early conceptual  
17 stage, so from our perspective, we are looking  
18 for more information on what the defined  
19 targets of what they intend to do in order to  
20 address the reclamation just to give it a  
21 little bit better understanding for us how  
22 feasible the activities are.

23 We definitely support the  
24 potential use of trials in order to see what  
25 is the most feasible means of reclaiming the

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1 MRSA because it is our understanding that it's  
2 very difficult to reforest those areas and we  
3 are actually of understanding that it was  
4 going to be primarily grassland vegetation on  
5 that site.

6                   A lot of it will be probably  
7 limited by the amount of soil and overburden  
8 that they are able to utilize on the site, or  
9 collect from clearing of the site and use on  
10 MRSA. Because that will definitely impact how  
11 easy it is to reforest and that volume of  
12 material might limit the ability that they are  
13 able to regenerate some of these areas to more  
14 forested condition. And potentially could mean  
15 bringing more soil in if they are looking to  
16 do more and run out of topsoil to utilize  
17 on-site.

18                   In regards to the rest of the  
19 site, definitely, I think, again, very  
20 conceptual in nature and it's hard to give our  
21 interpretation on how successful or what would  
22 be most reasonable in order to reforest or  
23 re-vegetate the site study area given the lack  
24 of future ecosite predictions or future  
25 vegetation community predictions as well.

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1 Having those in mind would give us a better  
2 idea of what they are aiming to do on the site  
3 and how effectively they can get there or what  
4 might be required in order to obtain those  
5 results.

6 So a lot of that will be  
7 dependent on soil composition and makeup that  
8 ends up being on the site post-closure will  
9 definitely impact that.

10 Does that answer your  
11 question? I just hope I covered everything.

12 PANEL MEMBER DRESCHER: Yes,  
13 that's great. Thank you very much. I  
14 appreciate it.

15 Just for reference, like I  
16 said, there is going to be some back and forth  
17 and I think for time management what I'm going  
18 to do is I may continue asking GenPGM  
19 questions and at the end of this particular  
20 line of questioning, I will call on yourself  
21 and on your partners in MND if somebody is  
22 available on the line that you know of, that  
23 would be great, to have some comments as well.  
24 So if -- probably, in about ten minutes or so.

25 MS. DARBY: I can let you know

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1 we were in touch with our NDM colleagues and,  
2 unfortunately, they weren't able to have  
3 someone on the line today, but they did say  
4 they will be available for questioning on the  
5 closure -- they have a closure presentation on  
6 the 30th and they would definitely be able to  
7 answer your questions then.

8                                 PANEL MEMBER DRESCHER: That's  
9 great. Thanks for the heads up, so we'll  
10 probably just push that off to the closure  
11 then. But if you could stay on -- as I finish  
12 this line of questioning, if you could stay  
13 on, that would be great. Thanks very much.

14                                 I would like to go back to  
15 GenPGM, please. Mr. Anwyll.

16                                 My next question is along the  
17 similar lines but this one is with respect to  
18 the process solids management facility. The  
19 specific question that I have -- I'll give you  
20 the reference, CIAR 976, page 45, GenPGM  
21 indicated that re-vegetation of the process  
22 solids management facility, herein called the  
23 PSMF, will also include tree plantings, "where  
24 they will not interfere with the long-term  
25 stability and safety of the facility."

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1                   So the question I have is  
2 specifically, could you explain whether tree  
3 plantings would interfere with the long-term  
4 stability and safety of the facility and  
5 clarify how likely it is trees could be  
6 planted on the PSMF?

7                   MR. ANWYLL: Thank you for the  
8 question, Panel Member Drescher. I'll caucus  
9 for one second, please.

10                  PANEL MEMBER DRESCHER: Thank  
11 you.

12                  MR. ANWYLL: Thank you for the  
13 time to caucus, Panel Member Drescher. I will  
14 hand over the question to Jeremy Dart.

15                  MR. DART: Thank you for the  
16 question, Panel Member Drescher and Madam  
17 Chair, Jeremy Dart for the record.

18                  With respect to possible tree  
19 plantings on process solids management  
20 facility, we would have to undertake an  
21 understanding of where we could do that  
22 without affecting stability and safety.

23                  So one of the key components  
24 of the PSMF at closure is around inspection.  
25 So we would have to evaluate where, if we

1 could plant trees, that they wouldn't hinder  
2 inspections of the process facility, as well  
3 as from a stability perspective, we wouldn't  
4 want to plant trees that would interfere with  
5 the engineered liners that are in place.

6                                 So, again, that would be  
7 detailed out in the closure plan with  
8 consultation from our geotechnical engineer of  
9 record, if that was to occur. So it may occur  
10 but it's highly unlikely that trees would be  
11 planted in and around the process solids  
12 management facility.

13                                 PANEL MEMBER DRESCHER: Thank  
14 you very much, Mr. Dart.

15                                 We would like to continue the  
16 questioning on the development of even aged  
17 conifer forest on the site and have my next  
18 set of questions for GenPGM.

19                                 Mr. Anwyll, in IR response  
20 6-24, Generation PGM committed to where  
21 practicable habitat that was disturbed by  
22 mineral exploration activities, including  
23 roads and landings, will be rehabilitated and  
24 restored by planting tree species. That's in  
25 CIAR 950, page 3.

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1                   In the additional caribou  
2 information, GenPGM provided in January, it  
3 also indicated that other potential locations  
4 for development of even aged conifer forest,  
5 included roads, processing plant, transmission  
6 line, and the Hare Lake discharge pipeline.

7                   So the questions are, the  
8 first one is, could there be an elaboration on  
9 the phrase "where practicable," and what  
10 circumstances would planting trees not be  
11 practical?

12                   I appreciate what Mr. Dart  
13 said with respect to the liner of the PSMF but  
14 I'm now more looking towards anthropogenic  
15 sites that have been disturbed and  
16 reformatting those.

17                   MR. ANWYLL: Thank you, I will  
18 caucus quickly again. Thank you for the time.  
19 I'll get Dr. Foster to clarify the answer.

20                   PANEL MEMBER DRESCHER: Thank  
21 you.

22                   DR. FOSTER: With respect to  
23 areas that were not be practicable to  
24 restoring to conifer forests, those would be  
25 largely small areas that are driven by the

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1 ecological requirements of conifers. So they  
2 would be areas such as small bedrock outcrops  
3 where it would be difficult to reestablish  
4 sufficient depth of soil for conifers or small  
5 pocket depressions or wetlands where it might  
6 be too wet, too hydric even for black spruce.  
7 So in drier areas, a mix of jack pine and  
8 black spruce might be suitable, and in wet  
9 areas, Black spruce recognizing the ecological  
10 requirements of these species.

11 In terms of the process plant  
12 area, there was sufficient stockpiled soil  
13 that re-vegetation with conifer should be  
14 largely practicable. And the transmission line  
15 there may be some areas, small pockets that  
16 soil depth is too shallow or it's too wet to  
17 support conifer but by and large should be  
18 practicable.

19 PANEL MEMBER DRESCHER: Thank  
20 you for that clarification. I appreciate that.

21 My next question has to do  
22 with wetlands, wetland creation. And I'm  
23 directing that to GenPGM. If we could, please,  
24 bring up figure 1.5-4, page 49 of the EIS  
25 chapter 1, in CIAR 727. Thank you.

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1                   From this diagram it looks  
2   that GenPGM is planning to include two  
3   wetlands denoted by those two blue ponds in  
4   the centre of the structures. This is not  
5   provided as a commitment in table 8.1 of the  
6   EIS addendum chapter 8 and not discussed  
7   further. It may just be a misinterpretation.  
8   Not quite sure. I would like have to  
9   clarification on this, please.

10                   Could you clarify, please,  
11   the intent to create these two wetlands if  
12   they are, in fact, wetlands and if they are  
13   not, if a description of what they are could  
14   be provided, please?

15                   MR. ANWYLL: Thank you for the  
16   question. I will caucus quickly to get an  
17   answer for this. I'll hand over to Mr. Brian  
18   Fraser to clarify the answer to this one.

19                   PANEL MEMBER DRESCHER: Thank  
20   you.

21                   MR. FRASER: Thank you, Drew.  
22   Thank you, Panel Member Drescher. Madam Chair,  
23   it's Brian Fraser for the record.

24                   So this schematic shows water  
25   control features on the reclaimed PSMF. It

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1 would be important to provide control of  
2 drainage from the PSMF so it reaches the  
3 environment in a controlled fashion. So those  
4 drainage channels you see provide that  
5 function, the ponds you see that are termed  
6 wetlands provide some surge control, if that  
7 makes sense, as in the storm water management  
8 pond type thing, so that water can leave the  
9 facility in a controlled fashion. They are not  
10 purposely designed wetlands but they will  
11 naturalize to wetland-like features over time  
12 and they will create incidental wetland  
13 habitat but I think it would be fairer to say,  
14 they are being designed, constructed as water  
15 management features that would naturalize over  
16 time.

17                                   PANEL MEMBER DRESCHER: Thank  
18 you very much for that clarification.

19                                   So just a quick question,  
20 follow-up question on that. Is there any  
21 intent in the final restoration of the site to  
22 have wetlands created or are there the  
23 potential for wetlands only going to be  
24 through naturalized opportunities.

25                                   MR. FRASER: Thank you for the

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1 question. I'll just caucus with the team for  
2 one second. Thank you, Ms. Drescher. Madam  
3 Chair, it's Brian Fraser again for the record.

4                               There is a commitment within  
5 the -- or the planned commitment to create  
6 wetland habitat in the water management pond  
7 specifically, and further opportunities we  
8 acknowledge that it has been identified by  
9 Indigenous partners that creation of wetland  
10 habitat might be important. The firm  
11 commitment on the water management pond and  
12 the -- through the closure planning process,  
13 we will entertain and look for other  
14 opportunities on the site that would be  
15 suitable.

16                               PANEL MEMBER DRESCHER: Thank  
17 you very much for that clarification, Mr.  
18 Fraser.

19                               I have one last question in  
20 this suite of questions and it has to do with  
21 rare plants. If I could ask that have GenPGM,  
22 please.

23                               Should I go ahead with you,  
24 Mr. Fraser?

25                               MR. FRASER: Sure, go ahead. I

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1 assume it's not me who is going to answer, but  
2 we'll caucus if you want to go ahead with the  
3 question.

4 PANEL MEMBER DRESCHER: Thank  
5 you. According to the significance table,  
6 GenPGM significance determination for effects  
7 to rare plants is low for reversibility, which  
8 is defined as reversible. The effect ceases  
9 once the source or stressor is removed, and  
10 this is CIAR 727, chapter 626, page 37,  
11 definition on page 15.

12 So the question that I have  
13 is, once the project is complete, i.e., the  
14 stressor is removed, it appears to be that  
15 GenPGM's expectation is that rare plants --  
16 rare plant species will grow in the reclaimed  
17 SSA. Could you please describe the rationale  
18 for this conclusion, including any assumptions  
19 that you have made?

20 MR. FRASER: Thank you, Panel  
21 Member Drescher. As predicted, I'm just going  
22 to caucus for one minute. Thank you, Ms.  
23 Drescher, Madam Chair, it's Brian Fraser again  
24 for the record. I'm going to ask Dr. Rob  
25 Foster.

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1 DR. FOSTER: Rob Foster for  
2 the record. In terms of reversibility of rare  
3 plants, the rare plants that are in the site  
4 study area are going to be translocated and  
5 transplanted outside of the site study area  
6 prior to commencement of construction.

7 So to adjacent waterbodies  
8 for the pondweed or to suitable north-facing  
9 rock face or cliff face for alpine woodsia. So  
10 we don't intend on taking propagules from  
11 those plants that have been transplanted and  
12 then retransplanting them back to the site  
13 study area afterwards in terms of  
14 reversibility, although it is possible that  
15 portions of the manufactured -- the rock  
16 stockpile area could be colonized over time by  
17 spores from the woodsia as they are  
18 transported through the air for long  
19 distances.

20 Similarly, the pondweed could  
21 conceivably colonize any wetlands in the area  
22 particularly, in the water management pond  
23 because they get moved around by waterfowl;  
24 that is the assumption of how those plants  
25 disperse.

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1                   But, generally speaking,  
2 we're not intending on actively translocating  
3 plants back into the site study area in terms  
4 of the rare plants. However, there is a  
5 planned program with respect to plant species  
6 of Indigenous concern and interest, and I'll  
7 pass you onto my colleague Cathryn Moffett to  
8 discuss that.

9                   MS. MOFFETT: Thank you.  
10 Cathryn Moffett for the record.

11                   I just wanted to share as  
12 well, it's not directly relating to rare plant  
13 species as a target; however, as Dr. Foster  
14 stated, our seed collection program, which  
15 began last year, was focused on plants of  
16 interest to Indigenous communities, and also  
17 their stated interest to preserve those plants  
18 within their communities, so it's at the  
19 beginning stages but we have started  
20 collecting and storing the seeds for -- to  
21 begin developing a seed bank as well as for  
22 direct distribution to communities for their  
23 use within community gardens and greenhouses  
24 as they see fit.

25                   PANEL MEMBER DRESCHER: Thank

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1 you for that clarification.

2 That concludes this suite of  
3 questions. I would just like to extend a thank  
4 you to Ms. Darby for staying on the line. I  
5 don't have any further questions for Ms. Darby  
6 at this point.

7 I would ask, however, if Ms.  
8 Darby could make herself available or one of  
9 her colleagues available on closure day  
10 together with the commitment that the  
11 representative from NDM would be there on  
12 closure day as well. If that is possible, that  
13 would be appreciated and I'll turn it --  
14 there, Ms. Darby, does that work for you?  
15 Great, thank you very much.

16 And now I'll turn it back to  
17 Madam Chair.

18 PANEL CHAIR: Thank you, Ms.  
19 Drescher. It's 12:05, how about we return  
20 after a one-hour lunch break at 1:05.

21 Thank you to everyone for  
22 their presentations and questions and answers  
23 this morning and we'll see you back here in  
24 one hour. Thank you.

25 --- Recess taken at 12:05 p.m.

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1 --- Upon resuming at 1:07 p.m.

2 PANEL CHAIR: Welcome back  
3 everyone, and we're back to resume questioning  
4 by the panel on terrain, soil and vegetation,  
5 but I do see, Mr. Barretto, you have your hand  
6 up. Generation PGM, go ahead.

7 MR. BARRETTO: Thank you,  
8 Madam Chair. Yes, Jeremy Barretto for the  
9 record. I would just like to confirm one  
10 process matter if I may.

11 In your opening, I believe we  
12 understand that the intention of the panel is  
13 for Generation to complete its closing  
14 statement for the terrestrial environment  
15 sessions at the end of the terrestrial  
16 environment sessions which are currently  
17 scheduled to end tomorrow, Wednesday, March  
18 23rd, after the MECP presentation on caribou  
19 and questioning.

20 PANEL CHAIR: Yes. Oh, Sorry.

21 MR. BARRETTO: Go ahead, Madam  
22 Chair. Sorry. Thank you.

23 PANEL CHAIR: That was  
24 correct. I'm sorry I interrupted you.

25 MR. BARRETTO: Thank you very

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1 much, Madam Chair. We appreciate it.

2 PANEL CHAIR: Thanks. Okay.

3 With that, I will turn it over to my  
4 colleague, Ms. Drescher, to continue with  
5 questions on terrain, soils and vegetation.  
6 Thank you.

7 PANEL MEMBER DRESCHER:

8 Thank you, Madam Chair. I  
9 would like to pose this question to GenPGM,  
10 please. Mr. Anwyll, this has to do with  
11 non-forested upland, rock barren and wetlands,  
12 which I know we've already covered a little  
13 bit, but you'll see where I'm going with this.  
14 So the context of this is GenPGM's assessment  
15 of effects on vegetation evaluated to change  
16 in non-forest cover. Effects to non-forest  
17 cover included effects to wetlands,  
18 non-forested upland plant communities and  
19 talus, treed rock barren and open rock barren.  
20 The significance determination for the change  
21 in non-forest cover was evaluated by GenPGM as  
22 irreversible in high duration, and the  
23 reference here is CIAR 727, chapter 6.2.6,  
24 page 37.

25 However, GenPGM indicated

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1 that the rehabilitation of the MRSA in  
2 adjacent areas of the SSA would create bare  
3 rock and partially vegetated communities that  
4 will likely be functionally similar to talus,  
5 treed rock barren and open rock barren  
6 ecosites over the long-term.

7                                   Again, for reference, that's  
8 on page 32 of the same 727, chapter 6.26.

9                                   So the question is, could you  
10 explain, please, why your significance  
11 determination is the same for wetlands,  
12 non-forested, treed rock barren and open rock  
13 barren. So it's the same determination across  
14 all of those, and where each of these ecosites  
15 have different habitat functions. So we're  
16 trying to understand why it's the same  
17 determination where they are different types  
18 of ecosites.

19                                   MR. ANWYLL: Thank you for the  
20 question, Panel Member Drescher. Drew Anwyll  
21 for the record. I will caucus quickly, please.

22                                   PANEL MEMBER DRESCHER: Thank  
23 you.

24                                   MR. ANWYLL: Thank you for  
25 that time to caucus, Panel Member Drescher,

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1 Madam Chair. Dr. Rob Foster will come back  
2 with clarity on that.

3 DR. FOSTER: Rob Foster for  
4 the record.

5 The determination of the  
6 significance of residual effects is the same  
7 across those different ecosites, including the  
8 wetlands and the upland rock barrens, because  
9 those determination wasn't counting on rock  
10 barrens replacing lost rock barrens that are  
11 currently the footprint. So even if there were  
12 no rock barrens created in the rock stockpile  
13 as if the rock pile was fully vegetated, the  
14 significance determination would still be that  
15 non-significant loss of those non-forested  
16 ecosites.

17 There is abundant rock  
18 barrens throughout the regional study area,  
19 (indiscernible) 3W-5, so that the loss of  
20 these open non-forested upland communities  
21 aren't considered significant in that regional  
22 context. So we're not counting on rock barrens  
23 in the rock pile to make up for what is lost,  
24 in essence. I hope that answers your question.

25 Sorry, I can't hear you.

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1 PANEL MEMBER DRESCHER: Sorry.  
2 I will ask my next question.

3 Could you provide us a little  
4 bit more background on the statement that  
5 says:

6 "The rehabilitation of the  
7 MRSA and adjacent areas of the SSA would  
8 create bare rock and partially vegetated  
9 communities that will likely be functionally  
10 similar to the talus, treed rock barren and  
11 open barren ecosites over the long-term."

12 The point that I'm getting at  
13 is the phrase "will likely be functionally  
14 similar." I was wondering if you could provide  
15 us a little bit more confidence, as opposed to  
16 using that phrase, in having these communities  
17 re-vegetated.

18 DR. FOSTER: Thank you for the  
19 question. If you don't mind, I'll just quickly  
20 confer with my colleagues and get back to you.

21 PANEL MEMBER DRESCHER: Thank  
22 you.

23 DR. FOSTER: Thank you for the  
24 question, Panel Member Drescher. So if you  
25 could just repeat the question, then I'll try

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1 to make sure I have the salient points.

2 PANEL MEMBER DRESCHER: What  
3 I'm asking is could you explain what you mean  
4 by:

5 "...the rehabilitation of the  
6 MRSA in adjacent areas of the SSA would create  
7 bare rock and partially vegetated  
8 communities," and the emphasis here is on this  
9 following phrase, "that will likely be  
10 functionally similar to the talus, treed rock  
11 barren and open barren ecosites over the  
12 long-term."

13 So I'm trying to understand  
14 what is meant by "will likely be functionally  
15 similar," and asking if there could be a  
16 little bit more confidence placed around that  
17 phrase.

18 DR. FOSTER: Okay. So the  
19 existing rock barren and talus communities in  
20 the site study area, where there is talus,  
21 they are typically dominated by white birch  
22 and there is often a cover of feather mosses  
23 and lichens that have developed on these  
24 boulders, and it is often sparse to dense  
25 layer of understory plants and shrubs such as

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1 Ribes oxyacanthoides and other species that  
2 are tolerant of dry ecosites, dry conditions,  
3 with very little soil development.

4                               So on these talus slopes that  
5 we've observed on-site, they have continual  
6 rockfall over long periods of time, so we have  
7 these large boulders that break off the slope  
8 and fall down, and so you've got a jumble of  
9 boulders at the base of the talus slope,  
10 that's that ecosite, and over time they are  
11 colonized by early successional species that  
12 can support those conditions.

13                               Rock barren similarly, though  
14 they are not as dynamic as talus slopes, they  
15 have a thin veneer of soil and they have  
16 vegetation, typically balsam fir or black  
17 spruce and some shrubs, such as pin cherry,  
18 that are tolerant of dry conditions and  
19 understory plants, and feather mosses and  
20 Cladina lichens that slowly develop over time  
21 as soil develops in cracks in the rocks or  
22 small depressions and where there is  
23 sufficient moisture and rooting medium for  
24 these species.

25                               So that's what has developed

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1 over time in these what were originally being  
2 fairly sterile communities, either through  
3 rock fall or post-glacial.

4                               So they are the initial  
5 stages of closure on the rock stockpile.

6                               There will be trials,  
7 obviously, to help determine the most  
8 appropriate vegetation treatments and soil  
9 amendments to help support re-vegetation of  
10 those areas, and in some cases there may be  
11 bare patches either there on the rock  
12 stockpile or adjacent to it where erosion over  
13 time may have similarly sort of shallow soil  
14 or no soil areas that vegetation will find  
15 more difficult conditions for initiation of  
16 colonization.

17                              But over time, years to  
18 decades depending on the species and how the  
19 conditions are on those particular microsites,  
20 there will also -- it is anticipated that  
21 there will be natural succession, just as  
22 there was that is continuing on talus slopes  
23 as this vegetation is developed. So  
24 functionally -- so by the functioning and the  
25 function of those vegetation communities on

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1 those particular environments. And over time  
2 these habitats as they develop also provide --  
3 the vegetation as it develops also provides  
4 habitat for other species, you know, insects,  
5 small mammals and bird species that will use  
6 these sparsely vegetated habitats.

7 Does that answer your  
8 question?

9 PANEL MEMBER DRESCHER: Yes. I  
10 do have two questions that arise out of that.

11 Sir, you're indicating that  
12 the sites will be naturally vegetated,  
13 re-vegetated, and the trials are for creating  
14 the soil environment for that natural  
15 re-vegetation, or are you hoping to actually  
16 re-vegetate the sites in addition to having  
17 the soil amendments.

18 DR. FOSTER: Let me clarify.  
19 We plan on re-vegetating actively, to the  
20 extent that it's possible on the managed rock  
21 pile, we'll use the progressive rehabilitation  
22 trials to help inform which of these active  
23 re-vegetation techniques, including soil and  
24 also planting or seeding of appropriate  
25 species.

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1                   So the trials will help to  
2 identify which treatments have the greatest  
3 probability of success. In addition to these  
4 efforts on the stockpile, there will still be  
5 natural succession, natural inputs from the  
6 surrounding landscape and colonizers. Nature  
7 abhors a vacuum and there will be inputs of  
8 seed propagules from the surrounding  
9 landscape, and so these species -- in addition  
10 to whatever we plant or seed there ourselves,  
11 invariably there will be spores and seeds and  
12 fragments of other vegetation, fungi, lichen,  
13 that will colonize the site.

14                   PANEL MEMBER DRESCHER: Thank  
15 you very much. Do you have a time estimate? I  
16 mean, it's not going to be five minutes or ten  
17 minutes, but do you have a time estimate of  
18 how long this would take to bring something  
19 that is bare rock with all these treatments to  
20 a point where you would be satisfied that it's  
21 met the existing conditions?

22                   DR. FOSTER: If you don't  
23 mind, I'll confer with my colleagues for a  
24 moment, with the other members of the team  
25 that are directly involved.

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1 PANEL MEMBER DRESCHER:

2 Certainly.

3 DR. FOSTER: Thank you for the  
4 question, Panel Member Drescher. Rob Foster  
5 for the record.

6 Re-establishing vegetation  
7 communities takes different lengths of time  
8 for different components of the vegetation  
9 community in terms of the requirement of the  
10 mine reclamation process for self-sustaining  
11 communities, and that requires follow-up and  
12 -- assessment and follow-up to determine that  
13 that actually has occurred as is prescribed.

14 In terms of the vegetation on  
15 the rock stockpile, there is a projected five-  
16 year active closure phase, so that's when  
17 these actions in terms of re-vegetation would  
18 occur in terms of soil amendment, soil  
19 seeding, and/or planting on the rock stockpile  
20 and elsewhere in the site study area.

21 Actual establishment of  
22 vegetation communities for the herbaceous  
23 plants, that's questions of relatively a short  
24 timeframe in terms of years because they are  
25 -- they seed and they sprout, and it will take

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1 a number of years to determine if they have  
2 successfully established that ground cover  
3 that will help reduce erosion and meet the  
4 requirements of a self-sustaining community.

5                   Establishing forest on the  
6 rock pile takes a matter of decades. Typically  
7 on just regular soil it's considered usually  
8 close canopy forest sort of within about 40  
9 years, and mature forests are typically 70  
10 plus years to establish a mature forest on --  
11 not on rock stockpile, just on regular boreal  
12 forest soils. So we're talking years to  
13 decades depending on which vegetation  
14 community is the eventual community to be  
15 established, depending on where on the rock  
16 stockpile or the site survey area.

17                   PANEL MEMBER DRESCHER: Thank  
18 you very much for that clarification. Just one  
19 last question in this suite of questions. Back  
20 to talus communities.

21                   In your opinion, are the  
22 talus communities in the RSA unique in that  
23 they are considered -- you don't find them  
24 very often, or do you think that they are  
25 abundant.

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1 DR. FOSTER: Could I clarify  
2 your question? In the RSA or the SSA are you  
3 --

4 PANEL MEMBER DRESCHER: So we  
5 have -- I'll go back. I was trying to short  
6 circuit a question here.

7 I'll go back. In context,  
8 GenPGM indicated that non-forest cover  
9 vegetation predicted to be lost in the SSA is  
10 common in the LSA, including talus, treed rock  
11 barren and open rock barren. However, talus  
12 communities were found to occupy only 63  
13 hectares of the RSA which is 735,000 hectares  
14 in size, while cliff and rock barren were  
15 found to occupy over 600 hectares and 950  
16 hectares of the RSA respectively.

17 GenPGM indicated that less  
18 than 1 hectare of cliff, rock barren and talus  
19 communities in the SSA will be lost. So the  
20 question is, could you explain to us why 63  
21 hectares of talus communities in these RSA  
22 leads you to conclude that this ecosite is  
23 actually common in the RSA.

24 DR. FOSTER: Now I get the  
25 gist of your question.

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1 PANEL MEMBER DRESCHER: Thank  
2 you.

3 DR. FOSTER: Talus is less  
4 abundant in the RSA compared to rock barren  
5 communities. The ecosites in the RSA. That's  
6 partly a function of the scale of mapping that  
7 is done for forest resource inventory, where  
8 the typical polygon size -- polygon size that  
9 are delineated during forest management  
10 planning and the derivation of the FRI, base  
11 layers are about 7 hectares.

12 Many of the talus communities  
13 are often too small to be broken out as  
14 separate polygons in the forest resource  
15 inventory because they are not harvested for  
16 trees typically, because they don't have big  
17 mature forests, and not only that, they are  
18 rocky and steep and operationally very  
19 difficult to work on. So they are of less  
20 interest for forest managers, and they don't  
21 tend to break them out as individual ecosites  
22 as often. They are often not lumped in with  
23 larger forest ecosites. So they are probably  
24 underrepresented in the database that's used  
25 for calculating what the actual abundance is

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1 in the regional study area.

2                   As you can imagine, during  
3 your drive from Thunder Bay to Marathon, you  
4 would see the superior uplands. It's very  
5 rugged landscape, and there is lots of rock  
6 faces, and at the base of many of those rock  
7 faces are talus slopes. So although  
8 proportionately in terms of mapped talus  
9 ecosites there, the ones in the site study are  
10 a greater proportion, there's still a lot of  
11 talus elsewhere in the regional study area.

12                   PANEL MEMBER DRESCHER: Thank  
13 you very much. I have one very quick question.  
14 There's a table -- there are many tables. If  
15 we could bring up table 1, please, from the IR  
16 responses package 5, 6 and 7, which is CIAR  
17 950, IR 7-8 at page 3 and we have the table in  
18 front of us there.

19                   I am looking specifically for  
20 coltsfoot which is on page 4, and then we'll go  
21 to puffball. The question that we have is  
22 could you provide the actual substrate that  
23 coltsfoot will be able to exist on, and  
24 similarly could you provide the substrate for  
25 puffball, to complete the table.

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1 DR. FOSTER: I don't see  
2 substrate listed as one of the attributes on  
3 the table, but I can say that coltsfoot, the  
4 Petasites is either frigidus or palmatus. They  
5 are typically found on sort of mesic soils, so  
6 they can range in texture, but they're usually  
7 sort of loamy soils. But in the end, the  
8 understory of mix woods are usually on the  
9 sort of mesic -- they're not quite hydric but  
10 sort of moist fine-textured to medium-textured  
11 soils would be a typical substrate that you  
12 would find.

13 ---(Reporter interruption)

14 DR. FOSTER: Coltsfoot are  
15 typically found on moist fine-textured to  
16 medium-textured loamy soils, in general is  
17 where I've seen them in the study area.  
18 Puffballs are a fungi which grow on a variety  
19 of substrates. I've seen them on wood, but  
20 they're also on a range of soils.

21 PANEL MEMBER DRESCHER: Thank  
22 you very much. I would like to now go to a  
23 question on seed mixtures. Mr. Anwyll, I could  
24 see your name but I couldn't see you.

25 The question that we have is,

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1 relative to the comment made earlier by  
2 Cathryn Moffett with respect to a seed bank  
3 that has been initiated specifically for  
4 Indigenous species of interest, could we --  
5 we're looking for specifically, are you  
6 prepared to commit to involving and receiving  
7 input by Indigenous groups into any identified  
8 seed mixtures for re-vegetation? So in other  
9 words, is the seed bank that has been  
10 initiated, is that involving the Indigenous  
11 groups at this stage, or is this just being  
12 done by that Generation PGM? Just a little bit  
13 of clarity.

14 MR. ANWYLL: Yeah, you're  
15 correct in your statement. It's being  
16 initiated by the Indigenous communities.

17 PANEL MEMBER DRESCHER: By the  
18 Indigenous communities?

19 MR. ANWYLL: Correct.

20 PANEL MEMBER DRESCHER: Thank  
21 you very much.

22 I have a question on wildlife  
23 buffer zones. I was little hasty getting rid  
24 of that page. This goes back to the mercury  
25 mitigation discussion that we had earlier or

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1 last week, and at that time I think it was Mr.  
2 Fraser who suggested that Mr. Foster would be  
3 able to answer the question specifically, and  
4 it had to do with leaving vegetative buffers  
5 around sensitive features.

6 MR. ANWYLL: Can I ask, Panel  
7 Member Drescher, that you can restate the  
8 question? We did document that, but it would  
9 be handy if we could hear the question again.

10 PANEL MEMBER DRESCHER: Last  
11 week on day 5 of the hearing, I asked GenPGM  
12 to clarify what constitutes a sensitive  
13 habitat where GenPGM would consider leaving a  
14 buffer zone. GenPGM indicated that this would  
15 include water courses, wetland features, and  
16 any significant wildlife habitat.

17 GenPGM asked if Dr. Rob  
18 Foster could provide the additional  
19 information on these types of habitats in the  
20 terrestrial session. GenPGM also clarified  
21 that these buffer zones would be applied at  
22 the periphery of the site because clearing  
23 activities within the SSA would be complete --  
24 would be complete, including overprinting of  
25 water features.

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1                   So the question is, could you  
2 please clarify which wetland features and  
3 significant wildlife areas GenPGM plans to  
4 leave a buffer zone. And I would like to add  
5 onto that.

6                   For example, this morning we  
7 heard from the government experts that leaving  
8 wildlife corridors through the site, not just  
9 around but actually through the site to allow  
10 for escape routes is recommended. So I would  
11 like to have some comment on that, please.

12                   MR. ANWYLL: Thank you for  
13 restating your question. I'll go to caucus and  
14 I'll come back with a proper answer.

15                   PANEL MEMBER DRESCHER: Thank  
16 you.

17                   MR. ANWYLL: Dr. Foster will  
18 come back and clarify the answer, as you would  
19 expect.

20                   PANEL MEMBER DRESCHER: Thank  
21 you.

22                   DR. FOSTER: Rob Foster for  
23 the record.

24                   With respect to buffers for  
25 sensitive features during construction and

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1 operations, those would be intended for  
2 several locations. One would be on the  
3 transmission line to the north. It spans Canoe  
4 Lake and also Stream 20, so vegetated buffers  
5 would be left adjacent to those water courses  
6 to protect from sedimentation and any other  
7 unintended effects on those water courses,  
8 water bodies, or associated wildlife that may  
9 be using them.

10                                 In addition, there's Lake 29  
11 which is adjacent to the proposed access road  
12 to the south of the main site footprint. So  
13 where practical, given soil conditions, our  
14 vegetative buffer would be left along the  
15 margins of that water body to protect water  
16 quality in the water body, but also any  
17 wildlife habitat. It's not known to be a  
18 fish-bearing lake, but there may be amphibians  
19 and definitely other aquatic biota using that  
20 lake.

21                                 With respect to -- I mean,  
22 there obviously aren't buffers left on the  
23 cleared portion of the site, but around the  
24 margins of the site there are a couple of  
25 sensitive features that will warrant buffers.

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1 that there is an appropriate width vegetated  
2 buffer for those nesting pair of birds.

3 I hope that answers that  
4 portion of the question.

5 As far as the vegetative  
6 wildlife travel corridor through the site, if  
7 I understood correctly the comments that were  
8 made this morning by the agency, I think that  
9 was post-closure. We don't intend to leave a  
10 vegetative buffer running through the middle  
11 of the site during operations that would  
12 increase the risk to wildlife passing through  
13 a heavily used active mine site. But  
14 post-closure during re-vegetation, there would  
15 be more than just a corridor. The site, as we  
16 discussed, will be re-vegetated as per the  
17 closure plan.

18 PANEL MEMBER DRESCHER: Thank  
19 you very much, Dr. Foster. I would like to  
20 move ahead to some other questions now.

21 Mr. Anwyll, this line of  
22 questioning is on mitigation measures and  
23 follow-up and they are directed to GenPGM.

24 GenPGM indicated that  
25 rehabilitation will include reapplication of

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1 topsoil where feasible and seeding grass-type  
2 species and herbaceous-type seed mixes. This  
3 is CIAR 727, chapter 6.2.6, page 20. GenPGM  
4 indicated that approximately 3.7 metre million  
5 tons of overburden will be excavated within  
6 the SSA and stored in a stockpile within  
7 subwatershed 102. And an additional 1.2 metre  
8 million tons will be excavated and stockpiled  
9 in smaller stockpiles in an around the PSMF.

10                                    Could you please elaborate  
11 what is meant by "reapplication of topsoil  
12 where feasible." Again, emphasis is on "where  
13 feasible." And when do you plan on spreading  
14 the soil to ensure re-vegetation in the SSA in  
15 the closure landscape.

16                                    I appreciate it's closure  
17 landscape, but there must be some indication  
18 of when that is going to occur, when the  
19 actual spreading of the soil is going to  
20 occur.

21                                    MR. ANWYLL: Thank you very  
22 much for the question. I'll caucus quickly,  
23 please. Thank you for the time to caucus. Mr.  
24 Fraser will come back and clarify.

25                                    MR. FRASER: Thank you, Drew,

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1 and thank you, Panel Member Drescher. Madam  
2 Chair, it's Brian Fraser for the record.

3 By reapplication, that was  
4 just meant to convey that stockpiled material  
5 would be taken and redistributed around the  
6 site in disturbed areas to promote vegetative  
7 growth so that it would accept the seeding so  
8 the vegetation could establish.

9 If not done progressively  
10 during operations, then the plan would be, I  
11 think as we've discussed or has come up in  
12 previous answers, to reestablish or to do  
13 progressive -- or progressive reclamation when  
14 possible. What's left to do in terms of active  
15 closure and redistributing the stockpiled  
16 overburden materials would happen in that  
17 five-year active closure period.

18 PANEL MEMBER DRESCHER: Thank  
19 you very much, Mr. Fraser. Just where I have  
20 you on the line.

21 The next question is to do  
22 with bedrock stockpiles, and again it says in  
23 the section 6.2.8, and this is in particular  
24 to caribou, "disturbed bedrock will be  
25 stockpiled on-site in a safe and stable

1 manner."

2 I would just like to  
3 understand if there are any further details on  
4 how that stockpiling would be done, such as  
5 proposed locations and considerations with  
6 respect to caribou in particular.

7 MR. FRASER: I'm just going to  
8 confer with the team. Caucus for one second.  
9 Thanks.

10 PANEL MEMBER DRESCHER: Thank  
11 you.

12 MR. FRASER: Thank you, Panel  
13 Member Drescher. Would you mind pulling up the  
14 reference? I think generally we understand,  
15 but I just wanted to clarify.

16 PANEL MEMBER DRESCHER: If you  
17 can give me a minute, please. Thanks.

18 MR. FRASER: Of course. Thank  
19 you.

20 PANEL MEMBER DRESCHER: Mr.  
21 Fraser, this for your reference.

22 MR. FRASER: Thank you, Ms.  
23 Drescher. Just give me one second to confer  
24 with the team again and we'll come back.

25 PANEL MEMBER DRESCHER: Thank

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1 you.

2 MR. FRASER: Thank you, Panel  
3 Member Drescher. Madam Chair, it's Brian  
4 Fraser for the record again, and thank you  
5 very much for bringing up this specific  
6 reference.

7 So these are generic  
8 mitigation measures that are provided by  
9 MNRF's best management practice for mineral  
10 exploration for woodland caribou.

11 So just to be a hundred  
12 percent clear to clarify, any stockpiled  
13 material on the site, whether it be mine rock  
14 in the MRSA, overburden in the overburden  
15 stockpiles -- here it refers to a bedrock  
16 stockpile, and I think that's probably within  
17 specific reference to exploration activities  
18 where a bulk sample would be taken, so a  
19 temporary stockpile of rock -- any stockpiles  
20 on-site that are there would be designed to  
21 provide geotechnical stability at appropriate  
22 slopes, and those slopes would ensure that  
23 they were stable for the long-term. So yeah,  
24 as I said, I think the reference here is based  
25 on a generic mitigation within that MNRF

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1 document.

2                                 There won't be bedrock  
3 stockpiles per se on the site. As bedrock is  
4 excavated from the open pits, it will be moved  
5 to the mine rock storage area, and that has a  
6 specific design to ensure stability. I would  
7 -- just one more comment I guess would be at  
8 the end of mine life, there will be a boulder  
9 fence put around the pit to ensure security of  
10 the pit, and that boulder fence would also be  
11 erected to ensure geotechnical stability at a  
12 low horizontal to vertical ratio, to ensure  
13 the pile didn't slide.

14                                 PANEL MEMBER DRESCHER: Thank  
15 you very much, Mr. Fraser.

16                                 I would like to move forward  
17 to -- it was something that Dr. Foster touched  
18 on which was the Braun holly fern. Braun's  
19 holly fern. And it has to do with dust  
20 monitoring.

21                                 The reference is the table of  
22 commitments in chapter 8, CIAR 727, chapter 8,  
23 page 18. GenPGM indicated that as part of the  
24 atmospheric environment monitoring program,  
25 fugitive dust will be collected using dust

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1 fall jars at special receptor locations. And  
2 that is in CIAR 912, IR 3, page 6. Sampling  
3 will occur at appropriate intervals throughout  
4 the life of the project.

5                   The question is, could you  
6 please identify what appropriate intervals  
7 throughout the life of the project means, and  
8 specifically what is the planned frequency and  
9 duration of sampling?

10                   MR. FRASER: Thank you, Panel  
11 Member Drescher. Just let me caucus with the  
12 team, please. Thank you.

13                   PANEL MEMBER DRESCHER: Thank  
14 you.

15                   MR. FRASER: Thank you, Panel  
16 Member Drescher. Madam Chair, it's Brian  
17 Fraser again for the record.

18                   Our atmospheric air quality  
19 expert is not on the call today. I'm wondering  
20 if you wouldn't mind, if you could repeat the  
21 question. My colleagues are going to write it  
22 down and pass it along, so perhaps we can  
23 revisit it during that session, but we will  
24 flag it specifically for him so that he's got  
25 that answer prepared.

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1 PANEL MEMBER DRESCHER:  
2 Certainly. So the question has to do with the  
3 intervals -- the appropriate intervals  
4 throughout the life of the project for  
5 monitoring of dust, and we're talking  
6 specifically about a receptor, which in this  
7 case is the Braun's holly fern. And we're  
8 asking for what is the planned frequency and  
9 duration of sampling.

10 MR. FRASER: So just let me  
11 confer and make sure we've got that, for one  
12 sec.

13 PANEL MEMBER DRESCHER:  
14 Certainly.

15 MR. FRASER: Thank you, Panel  
16 Member Drescher. Madam Chair, Brian Fraser  
17 again for the record. I think we've got that  
18 down, and we can refer back to the transcript  
19 if needed.

20 PANEL MEMBER DRESCHER: Right.  
21 Thank you.

22 So we've also conferred here  
23 and feel that at the time of the atmospheric  
24 session, the topic-specific day, it could be  
25 revisited at that point from our perspective.

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1 MR. FRASER: Okay. Thank you  
2 very much.

3 PANEL MEMBER DRESCHER: Thank  
4 you. So I think what I'll do is just one final  
5 question. I appreciate that we're deferring a  
6 lot of the dust collection and dust monitoring  
7 to that particular day, but I do have one  
8 specific question for Braun's holly fern, and  
9 I'm just looking for confirmation that you're  
10 prepared to include it in the monitoring of  
11 that fern. Perhaps you're atmospheric expert  
12 would be able to speak to that.

13 MR. FRASER: Thank you, Ms.  
14 Drescher. Brian Fraser again for the record.

15 Yes, if you don't mind, we  
16 can confer with the atmospheric expert and Dr.  
17 Foster and then be prepared to answer in that  
18 session.

19 PANEL MEMBER DRESCHER:  
20 Certainly. Okay. That's great. Thanks very  
21 much.

22 The next line of questioning  
23 has to do with standard construction best  
24 practices and control measures consistent with  
25 provincial standards. And specifically, in

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1 terms of mitigation enhancement measures for  
2 vegetation, Generation PGM indicated that  
3 standard construction best practices will be  
4 used during the site preparation and  
5 construction phase to reduce potential  
6 negative interactions with vegetation.

7                               For the transmission line,  
8 for example, mitigative measures during  
9 construction will include -- and it's listed  
10 on page 24, chapter 6.26 of CIAR 727. And also  
11 in chapter 8, page 22, vegetation control  
12 measures consistent with provincial standards.

13                               So the question is -- so  
14 that's just the context.

15                               The question is, could you  
16 clarify, please, whether standard construction  
17 best practices will be used to mitigate  
18 effects in the SSA, or is this just for the  
19 transmission line? Because those references  
20 speak specifically to the transmission line  
21 and it's not clear that those particular  
22 standards will be used throughout the site.

23                               MR. FRASER: Thank you, Panel  
24 Member Drescher. I'll just take this  
25 opportunity to caucus.

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1 PANEL MEMBER DRESCHER: Thank  
2 you.

3 DR. FOSTER: Rob Foster for  
4 the record. I'll respond to your question,  
5 Panel Member Drescher.

6 With respect to the  
7 mitigation practices that are identified for  
8 the hydro line, they're primarily for the  
9 transmission line, the ones that are  
10 identified in section 2 which you referred.  
11 Very possible that they'll also be applied  
12 along the margins of the SSA. For example, if  
13 you're near the tree line, there may be a  
14 possibility to leave woody vegetation or the  
15 ground cover undisturbed if it doesn't pose a  
16 health safety risk, i.e., there may be  
17 overstory vegetation, but where practical, it  
18 may be possible in portions of some of the  
19 peripheral SSA to follow some of the other  
20 best management practices like leaving the  
21 ground cover undisturbed or further shrub  
22 layer undisturbed. Rather than clearing it  
23 down to top soil or bedrock.

24 PANEL MEMBER DRESCHER: Thank  
25 you. So I guess we're trying to understand the

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1 difference between standard construction best  
2 practices and vegetation control measures.  
3 Standard construction best practices are  
4 referred to in chapter 6, and vegetation  
5 control measures consistent with the  
6 provincial standards are referenced in chapter  
7 8. And we're trying to understand if they're  
8 plus or minus the same thing or if there's a  
9 distinct difference.

10 DR. FOSTER: For vegetation  
11 control, that speaks to the concern of  
12 vegetation growing up underneath transmission  
13 lines. For vegetation control, no, it's  
14 unlikely that vegetation control would be  
15 needed under the transmission line given the  
16 duration of the mine and the duration of the  
17 transmission line being in effect.

18 Generally speaking, when you  
19 speak of vegetation control, that's about  
20 controlling vegetation that is growing up that  
21 could result in contact with transmission  
22 lines or otherwise be a risk for fire or other  
23 safety. Whereas best management practices in  
24 the main part of the site study area would be  
25 more related to dust suppression or say, for

1 example, bringing in -- when your machinery  
2 comes to site or vehicles come to site that  
3 they are not bringing in invasive species.

4 PANEL MEMBER DRESCHER: Thank  
5 you very much. Actually, on that invasive  
6 species, I'm going on to the next set of  
7 questions.

8 GenPGM indicated that it will  
9 implement a vegetation monitoring program and  
10 that invasive or noxious plants will be  
11 removed. This is CIAR 912, IR 3-3, page 27. No  
12 further detail on the methods proposed to  
13 prevent and manage invasive plants has been  
14 provided.

15 In the human health section  
16 of the EIS addendum, GenPGM states that  
17 herbicide or pesticide use was not anticipated  
18 at the mine site or along the proposed  
19 transmission line corridor. And this is in  
20 chapter 6.2.10, page 7, CIAR 727.

21 The question is, how will  
22 GenPGM prevent the initial establishment of  
23 invasive plant species and how will invasive  
24 plant species be removed or managed? And I  
25 appreciate that you indicate you've already

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1 alluded to some of the initial establishment.  
2 If you could repeat that for the record,  
3 please, and then outline how it will be  
4 removed or managed.

5 DR. FOSTER: Thank you for the  
6 question. I'll take a moment to confer with my  
7 colleagues and get back. Thank you for the  
8 question. Rob Foster for the record.

9 If you could just repeat the  
10 question, then I'll make sure that I cover all  
11 aspects of it. I'm sorry, I'm not picking you  
12 up. Are you muted?

13 PANEL MEMBER DRESCHER: Pardon  
14 me. It's a long day.

15 How will GenPGM prevent the  
16 initial establishment of the invasive plant  
17 species and how will invasive species be  
18 removed or managed? In other words, is hand  
19 clearing plant --

20 DR. FOSTER: Thank you. Rob  
21 Foster for the record.

22 For invasive species, the  
23 biggest way to avoid impacts on-site is to  
24 catch them before they come to site. They're  
25 harder to eradicate once they become well

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1 established at site. So construction vehicles  
2 coming to site will be cleaned so that it  
3 reduces the risk of propagules coming in with  
4 some -- for invasive species.

5                   As I said, there are quite a  
6 large number of non-native species already  
7 on-site, but it's really the invasive ones  
8 that we're most concerned with. The ones that  
9 -- we'll have a monitoring plan in place, and  
10 hopefully those will detect any new  
11 occurrences if they come in despite our best  
12 efforts to clean vehicles. Because it must be  
13 recognized that some of these non-native  
14 species can come in through other vectors,  
15 such as wind-blown seeds or on wildlife.

16                   We'll manage exposed soil at  
17 site, to the extent it's practical, to avoid  
18 unwanted vegetation growing on it as well. But  
19 eventually if the species is detected on-site  
20 that's an invasive species, it will have to be  
21 hand pulled.

22                   So, for example, if the  
23 purple loosestrife reaches the site again, it  
24 will have to be dug out, including the  
25 rhizomes. It will require manual, so that's a

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1 commitment that GenPGM has made to avoid the  
2 use of herbicides.

3 PANEL MEMBER DRESCHER: Thank  
4 you very much for that clarification. It is my  
5 understanding based on your comments that  
6 invasive species will not be treated with  
7 herbicides or pesticides, but you may be using  
8 herbicides and pesticides.

9 DR. FOSTER: I'm sorry, do you  
10 have a reference for that?

11 PANEL MEMBER DRESCHER: It's a  
12 continuation of the question.

13 DR. FOSTER: Let me confer  
14 with my colleagues, please, for a moment, if  
15 you don't mind.

16 PANEL MEMBER DRESCHER: Thank  
17 you.

18 DR. FOSTER: Thank you for the  
19 question. It's Rob Foster for the record.

20 I would like to confirm that  
21 Generation PGM will not be using herbicides in  
22 the SSA for invasive species or other  
23 vegetation control.

24 PANEL MEMBER DRESCHER: Okay.  
25 Thank you very much for that confirmation.

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1 Just going along with that, to GenPGM, the  
2 question I would like to pose is there was an  
3 interest expressed by Indigenous groups to be  
4 informed about invasive species control on the  
5 site, and I was just wondering if -- what the  
6 plans are to keep the Indigenous groups  
7 informed of the management over the long-term.

8 DR. FOSTER: Thank you for the  
9 question. I'll have to confer with my team on  
10 that and get the appropriate person. Thank  
11 you.

12 PANEL MEMBER DRESCHER: Thank  
13 you.

14 DR. FOSTER: Thank you for the  
15 question. I'll turn you over to Cathryn  
16 Moffett from GenPGM who is best placed to  
17 answer that question. Thank you.

18 PANEL MEMBER DRESCHER: Thank  
19 you.

20 MS. MOFFETT: Thanks, Dr.  
21 Foster, and, Panel Member Drescher, for your  
22 question.

23 So just to confirm, we do  
24 have established environmental committees that  
25 are meeting on a regular basis, and that would

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1 be our main mechanism of continued updates  
2 specifically around environmental issues,  
3 would be through those established committees.

4 PANEL MEMBER DRESCHER: Is it  
5 your anticipation that these environmental  
6 committees will continue throughout the life  
7 of the project and active closure and  
8 post-closure?

9 MS. MOFFETT: My expectation  
10 is that they will continue throughout  
11 construction and operations and then continue  
12 on a less frequent basis throughout closure  
13 and post-closure.

14 PANEL MEMBER DRESCHER: Thank  
15 you very much. I have another question for --  
16 thank you. That's the last Indigenous question  
17 I have. I have another question for GenPGM.

18 Mr. Anwyll, this has to do  
19 with a comment made by Environment North. They  
20 indicated that climate change accelerates the  
21 introduction and spread of invasive species.  
22 GenPGM has not commented on the effect of  
23 climate change in regards to invasive and  
24 noxious plants and whether this may also  
25 affect the methods it chooses to use to

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1 prevent and manage these species.

2                   The question is, what is  
3 GenPGM's confidence in the measures it  
4 proposes considering the fact that climate  
5 change may accelerate the introduction and  
6 spread of invasive species.

7                   MR. ANWYLL: I would like the  
8 opportunity to confer with my learned  
9 associates, if I could, please.

10                   PANEL MEMBER DRESCHER:  
11 Absolutely.

12                   MR. ANWYLL: Our expert Dr.  
13 Rob Foster will clarify.

14                   PANEL MEMBER DRESCHER: Thank  
15 you.

16                   DR. FOSTER: Thank you for the  
17 question. Rob Foster for the record.

18                   There isn't a particular  
19 expectation that climate change over the life  
20 of the mine will have an accelerated risk of  
21 invasion by non-native plants. However, it's  
22 difficult to predict the future, and so it  
23 will be imperative that our monitoring plan  
24 program at site is active and reactive to an  
25 increased risk associated with invasive

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1 non-native plants arriving at site. But our  
2 commitment is still to manage those with -- by  
3 manual, mechanical methods rather than  
4 herbicides. The key is vigilance and hopping  
5 on these initial colonizers before they become  
6 a widespread problem and they're more  
7 difficult to eradicate and control.

8                                 PANEL MEMBER DRESCHER: Thank  
9 you, Dr. Foster. I have one final question for  
10 the panel's questioning today directed to  
11 GenPGM, please.

12                                 Mr. Anwyll, given the  
13 discussion thus far, there remains uncertainty  
14 with respect to the habitat types that will be  
15 present in the closure landscape and therefore  
16 uncertainty about the effects of the project  
17 on vegetation, wildlife and current use.

18                                 Could you please describe  
19 what proportion of forests, wetlands and  
20 non-forested upland, rock barren communities  
21 will be present after closure to the best of  
22 your knowledge at this time. Specific  
23 locations do not need to be specified, just an  
24 estimate of the relative proportions to the  
25 size that we're looking for.

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1                   It follows on a slide that  
2 was given by ECCC this morning which indicated  
3 the various communities on the site currently,  
4 and we would just like to have it for  
5 comparison purposes. Approximate sizes. I  
6 appreciate that this morning was very  
7 specific, down to the decimal point. Just like  
8 to have approximate sizes so we can establish  
9 proportions.

10                   MR. ANWYLL: Okay, I will  
11 certainly caucus for this to get clarity.

12                   PANEL MEMBER DRESCHER: Would  
13 you like this as an undertaking?

14                   MR. ANWYLL: Let me confer  
15 with my colleagues if we have clarity on our  
16 side, and if we don't, we'll come back with an  
17 undertaking.

18                   PANEL MEMBER DRESCHER: Thank  
19 you.

20                   MR. ANWYLL: Thank you, Panel  
21 Member Drescher. We did have some discussion  
22 and we think it's best to have an informed  
23 answer, or at least a best guess coming back  
24 to that, so if I could get clarity on the  
25 specifics of the undertaking, please.

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1 UNDERTAKING 11:

2 PANEL MEMBER DRESCHER: Okay.  
3 I will repeat the question. Given the  
4 discussion thus far, there remains uncertainty  
5 with respect to the habitat types that will be  
6 present in the closure landscape and therefore  
7 uncertainty about the effects of the project  
8 on vegetation, wildlife and current use.

9 Please describe what  
10 proportion of forests, wetlands and  
11 non-forested upland, rock barren communities  
12 will be present after closure to the best of  
13 your knowledge at this time. Specific  
14 locations do not need to be specified, as an  
15 estimated range of the proportions is  
16 acceptable. This would be undertaking number  
17 11 for your reference.

18 MR. ANWYLL: Thank you. I  
19 think we've got that documented clearly.

20 PANEL MEMBER DRESCHER: Okay.  
21 And just as a follow-up, and it could be added  
22 into that, is we would like to have an  
23 estimate of the number of hectares of  
24 vegetation that will experience indirect  
25 effects from the project from dust, light,

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1 hydrological changes within the 1 kilometre  
2 buffer of the LSA.

3 MR. ANWYLL: Thank you for  
4 clarifying. We have that as an undertaking.

5 PANEL MEMBER DRESCHER: Thank  
6 you very much. That is the conclusion on the  
7 questions on vegetation. Thank you.

8 PANEL CHAIR: Thank you, Ms.  
9 Drescher.

10 We have a couple more  
11 presentations on our next series of topics,  
12 and so at this time I would like to call on  
13 Environment and Climate Change. Good  
14 afternoon, Ms. Carpenter. I'll turn it over to  
15 you to begin your presentation. Thank you.

16 PRESENTATION BY MS. CARPENTER:

17 MS. CARPENTER: Thank you,  
18 Madam Chair.

19 For those of you who may have  
20 missed my first presentation this morning, my  
21 name is Leslie Carpenter and I work for  
22 Environment and Climate Change Canada, which  
23 I'll ref to as ECCC or the department.

24 As mentioned earlier, I'm the  
25 senior environmental specialist for the

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1 Canadian Wildlife Service, or CWS, in Ontario  
2 region that led ECCC's review of the  
3 terrestrial wildlife issues surrounding the  
4 Marathon Palladium Project under the Canadian  
5 Environmental Assessment Act. For this  
6 presentation, I'm accompanied by my colleagues  
7 Robert Clavering who is a lead EA specialist  
8 for the ECCC review of this project, as well  
9 as Allison Cruise and Matthew LeBlanc, boreal  
10 caribou experts.

11 Next slide, please.

12 Similar to this morning's  
13 presentation, I would like to give you an  
14 overview of today's presentation and ECCC's  
15 role in the EA process. Then I will give a  
16 brief overview of the Lake Superior coastal  
17 range, hereinafter referred to as the coastal  
18 range. Then I will explain ECCC's analysis of  
19 the proposed project, including the potential  
20 effects of the project, the proposed  
21 mitigation measures, and the proposed  
22 follow-up and monitoring programs. Finally,  
23 I'll present the key issues and various  
24 recommendations from ECCC to the joint review  
25 panel.

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1 Next slide, please.

2 ECCC is participating as a  
3 federal authority providing specialist or  
4 expert information and knowledge for  
5 consideration by the panel. ECCC's mandate  
6 relevant to this presentation stems from the  
7 Species at Risk Act, also known as SARA. Under  
8 SARA, ECCC posted the final federal amended  
9 recovery strategy for boreal caribou in 2020  
10 and has been working with the provinces and  
11 territories to develop action plans and range  
12 plans to protect the species and its habitat.

13 Next slide, please.

14 Boreal caribou ranges are the  
15 fundamental unit of conservation and  
16 management for boreal caribou recovery plan  
17 and actions from the federal perspective. Each  
18 range includes a local boreal caribou  
19 population which are unique and managed  
20 independently from other populations.

21 The recovery goal for boreal  
22 caribou is to achieve self-sustaining local  
23 populations in all ranges throughout their  
24 current distribution in Canada to the extent  
25 possible. The population and distribution

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1 objective of the federal recovery strategy is  
2 to maintain or achieve self-sustaining local  
3 populations.

4                               The federal recovery strategy  
5 states that maintaining a long-term self-  
6 sustaining status for boreal caribou ranges  
7 depends on connectivity within and between  
8 ranges and indicates that irreversible range  
9 retraction or permanent breaks in range  
10 connectivity should be avoided. As per the  
11 federal recovery strategy, the recovery of all  
12 local populations is considered biologically  
13 and technically feasible.

14                               Next slide, please.

15                               This project is located  
16 entirely in the coastal range. The coastal  
17 range is isolated from the ranges to the  
18 north. It's linear with a 10-kilometre buffer  
19 of Lake Superior. Small and unique, where  
20 boreal caribou currently reside primarily on  
21 the large offshore islands. It is also the  
22 most southernmost boreal caribou range in  
23 Canada.

24                               This range has a linear shape  
25 and is boarded by water, which makes it

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1 vulnerable to reduced connectivity, where  
2 connectivity is already impaired, within and  
3 between the ranges, due to the disturbances  
4 such as the Town of Marathon, the airport and  
5 Highway 17.

6                               The range level habitat  
7 disturbance is currently 85 percent  
8 undisturbed. The federal recovery strategy  
9 identifies a minimum of 65 percent undisturbed  
10 habitat to provide a 60 percent probability of  
11 achieving self- sustaining status, which puts  
12 this range above the threshold, and thus it is  
13 considered likely to be self-sustaining based  
14 on habitat disturbances alone. However, as  
15 I'll explain later, the population shows signs  
16 of a population that is not self-sustaining  
17 based on the population size and trend. This  
18 unique range may require a separate approach  
19 to recovery.

20                               Next slide, please.

21                               Currently there are two sub  
22 populations in the coastal range. The Slate  
23 Islands, identified by the blue arrow, and the  
24 mainland with north shore (ph) islands,  
25 identified by those red arrows. Michipicoten

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1 Island, the green arrow, currently has no  
2 caribou present. Plus the recent translocation  
3 of a backup population to Caribou Island,  
4 which is shown by the black arrow.

5                               The solid black dot  
6 represents the approximate location of the  
7 proposed Marathon mine. These spatially  
8 separated subpopulations interact as  
9 individual animals can move from one sub  
10 population to another. There is limited but  
11 occasional natural, such as ice bridges, and  
12 human-assisted movements between these  
13 subpopulations.

14                               The discontinuous  
15 distribution area, shown in the pale yellow,  
16 north of the coastal range is an area that may  
17 facilitate caribou movements between the  
18 coastal range and the continuous distribution  
19 to the north.

20                               Next slide, please.

21                               In addition to the decline in  
22 the coastal range population since the  
23 original submission of this project, there  
24 have also been updates to caribou high-use  
25 areas for this range. Since 2013, additional

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1 category 1 or high-use area habitat has been  
2 identified in close proximity to the project  
3 site. The black dots on these maps represent  
4 the approximate location of the proposed  
5 Marathon Palladium Mine.

6                               Next slide, please.

7                               As mentioned earlier, there  
8 have been some population changes for the  
9 coastal range over the last decade. In 2013-14  
10 during the first submission of this project,  
11 the population estimate was approximately 550  
12 individuals, which included both the mainland  
13 and the island populations. In 2015, ice  
14 bridges formed and wolves accessed both  
15 Michipicoten and the Slate Islands, which led  
16 to a significant decline in the caribou  
17 populations on these islands.

18                              In 2018, the province of  
19 Ontario translocated nine animals from  
20 Michipicoten Island to the Slate Islands. It  
21 appears that these individuals are  
22 reproducing, though the population is still  
23 very small. Nine animals were also taken from  
24 Michipicoten Island to Caribou Island for a  
25 backup population due to the remote location

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1 and less chance of an ice bridge forming given  
2 its distance from the mainland.

3                   Based on 2016 data from the  
4 province of Ontario, the mainland population  
5 is estimated at 50 caribou, the Slate Islands  
6 approximately 29 to 31 caribou, no caribou on  
7 Michipicoten Island, and approximately 24 on  
8 Caribou Island.

9                   Regardless of whether or not  
10 caribou occupy the mainland portion of the  
11 range, critical habitat on the mainland will  
12 be required for within and between range  
13 connectivity in order to support the federal  
14 recovery objectives. This is important because  
15 in our examination we're not only interested  
16 by the current status of the herd, but also by  
17 the potential for this herd to bounce back,  
18 grow back to a substantial population size,  
19 and eventually repopulate the mainland. The  
20 long-term vision is extremely important in  
21 this context.

22                   Next slide, please.

23                   And now for an overview of  
24 the available habitat at the site and  
25 potential effects on boreal caribou and its

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1 habitat.

2                               The project's construction  
3 operation and closure phases have the  
4 potential to affect boreal caribou through the  
5 loss or alteration of critical habitat. It is  
6 expected that the entire project footprint,  
7 1,116 hectares which is 97 percent forest,  
8 will be cleared and only a small amount of  
9 habitat will be reforested, although no  
10 estimate has been provided.

11                              The project also has the  
12 potential of destruction of critical habitat  
13 due to loss of connectivity. As well as the  
14 sensory disturbance.

15                              This map shows the project  
16 footprint in red as well as many other  
17 disturbances already present in the area. The  
18 transmission line north of the project site,  
19 Highway 17, and the Town of Marathon south of  
20 the project site.

21                              As mentioned above, critical  
22 habitat as defined by SARA has been identified  
23 for boreal caribou within the project site.  
24 The yellow line on the map is the range  
25 boundary, and the entire range is considered

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1 critical habitat.

2 Next slide, please.

3 ECCC has identified four key  
4 issues surrounding GenPGM's conclusion of no  
5 residual effects for boreal caribou.

6 The first key issue is  
7 caribou habitat connectivity. It is ECCC's  
8 expert advice that the recent connectivity  
9 assessment completed by GenPGM is insufficient  
10 in characterizing the short- and long-term  
11 impacts to connectivity within the coastal  
12 range during all phases of the project. This  
13 map, provided by GenPGM from record number  
14 976, shows the potential movement corridors  
15 for caribou to transverse the site during  
16 mining operations. The red hexagons in the map  
17 represent a high resistance or difficulty to  
18 pass through an area. And the green hexagons  
19 represent a low resistance or easier to pass  
20 through an area. The pink lines are GenPGM's  
21 potential pathways for caribou to move  
22 east/west through the range. The black line  
23 just north of the site represents the boundary  
24 of the coastal range as identified in the  
25 federal recovery strategy. And the mine is

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1 shown with a red line.

2                               It should be noted that no  
3 high resistance values or red hexagons were  
4 attributed to major features within the  
5 project mine site during operations, including  
6 the open pits, which will likely be avoided by  
7 caribou. We believe that these hexagons should  
8 appear red, yet no resistant values were  
9 attributed to these areas.

10                              Also, the potential travel  
11 corridors, or the pink lines, do not align  
12 with GenPGM's model pathways of least  
13 resistance for caribou movement, as many of  
14 these lines are going through red hexagons.  
15 Post-closure landscape modelling after some  
16 proposed reforestation was also not presented  
17 in their analysis.

18                              GenPGM stated to the south of  
19 the project, caribou movement is less likely  
20 because the landscape is already heavily  
21 impacted by human development and disturbance,  
22 but then they identified pathways for caribou  
23 movement in this area. GenPGM also stated that  
24 resistance increases at the project site  
25 during operations, indicating that the project

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1 will impact connectivity within the coastal  
2 range. However, despite these statements,  
3 GenPGM did not provide appropriate mitigation  
4 measures to address this.

5                               Next slide, please.

6                               The next ECCC key issue is  
7 category 1 habitat and sensory disturbance. It  
8 is ECCC's expert advice the project effects  
9 regarding sensory disturbance have been  
10 underestimated. Without mitigation, sensory  
11 disturbance has the potential to impact  
12 caribou behaviour within the range during the  
13 construction, operations, and closure phases  
14 of the project, should caribou be present on  
15 the main portion of the range.

16                              This map, provided by GenPGM  
17 from record number 950, shows the potential  
18 sensory disturbance given the proximity of the  
19 mine site to category 1 habitat. The project  
20 footprint is shown in purple. The areas in  
21 yellow represented category 1 habitat for  
22 caribou. The blue dashed line represents that  
23 10-kilometre buffer distance recommended by  
24 the province of Ontario in order to reduce  
25 sensory disturbance to caribou during the

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1 sensitive times of the year.

2                               The threshold applied in  
3 their analysis is not considered appropriate  
4 for the assessment of sensory disturbance to  
5 boreal caribou. Therefore, mitigation measures  
6 are necessary in order to reduce sensory  
7 disturbance impact to caribou during these  
8 sensitive periods within their lifecycle.  
9 Timing windows should be implemented to  
10 effectively address the sensory disturbance  
11 based on the anticipated sound travel and  
12 associated caribou avoidance.

13                               Next slide, please.

14                               The next ECCC key issue is  
15 progressive rehabilitation and post-closure  
16 restoration. It is ECCC's expert advice that  
17 the project effects concerning range  
18 connectivity have been underestimated.  
19 Further, based on the existing information,  
20 the post-closure landscape does not appear to  
21 provide suitable habitat that will enable  
22 caribou movement. It is likely that the  
23 project will pose a barrier to caribou  
24 movement within the coastal range during all  
25 phases of the project.

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1                   The terrestrial portion of  
2 the project site is approximately 1,116  
3 hectares, of which 97 percent is covered by  
4 forest.

5                   ECCC recommends that as much  
6 of the mine site as possible should be  
7 reforested rather than simply or generally  
8 re-vegetated. Specific details regarding  
9 progressive re-vegetation measures and the  
10 post-closure plan and the intended benefit to  
11 caribou and/or caribou critical habitat have  
12 not been provided. Without these projections  
13 for the future state of caribou critical  
14 habitat within the coastal range, ECCC is  
15 unable to substantiate the extent to which  
16 boreal caribou habitat within the coastal  
17 range will be restored.

18                  ECCC's review applied  
19 guidance from the federal recovery strategy  
20 which states that the recovery of the coastal  
21 range local population is currently considered  
22 biologically and technically feasible.  
23 Further, the amended recovery strategy states  
24 that maintaining a long-term self-sustaining  
25 status for boreal caribou ranges depends on

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1 the connectivity within and between ranges,  
2 and that irreversible range retraction or  
3 permanent breaks in range connectivity should  
4 be avoided.

5 Permanent breaks in range  
6 connectivity may compromise the recovery  
7 feasibility for boreal caribou in the coastal  
8 range.

9 Next slide, please.

10 The last ECCC key issue  
11 addresses off-site mitigation. It is ECCC's  
12 expert advice that an off-site mitigation plan  
13 that explicitly addresses the removal of  
14 approximately 1,116 hectares of coastal range  
15 critical habitat and connectivity during all  
16 phases of the project, as well as the  
17 permanent removal of this habitat and  
18 connectivity that cannot effectively be  
19 reforested as a result of this project, is  
20 required.

21 Even with a comprehensive  
22 on-site mitigation and post-closure  
23 restoration plan, it is likely that  
24 connectivity issues created by the project for  
25 both within and between ranges will persist.

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1 Therefore, residual adverse effects will need  
2 to be offset through measures that aim to  
3 improve connectivity within and between  
4 ranges.

5                               The updated draft version of  
6 GenPGM's proposed caribou habitat off-site  
7 mitigation report remains largely unchanged  
8 since the original 2014 report. The report  
9 states that off-site mitigation will result in  
10 the addition of approximately 115 hectares of  
11 future conifer forest on rehabilitated  
12 roadbeds and associated landings. This is  
13 insufficient to address project effects.

14                              ECCC advises on offset  
15 requirements on a case-by-case basis based on  
16 an assessment of risk. Offsetting ratios are a  
17 function of several factors, including the  
18 severity of the effects, the vulnerability of  
19 the species and/or habitat, time lags,  
20 probability of success, and the quality of the  
21 proposed offsetting measures.

22                              Determining offsetting plans  
23 that achieve outcomes consistent with a SARA  
24 recovery strategy typically require dialogue  
25 and collaboration between regulatory agencies

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1 and project proponents.

2                   ECCC's general approach is to  
3 recommend a minimum of 4-to-1 ratio for  
4 low-risk projects to account for time lags to  
5 restoration, the uncertainty and outcomes, and  
6 to be pre-cautionary in light of impacts to  
7 sensitive species.

8                   Offset ratios may be higher  
9 than 4-to-1 based on project-specific  
10 circumstances, proposed mitigation measures,  
11 risks and uncertainties.

12                   For example, in a recent  
13 federal review decision for two high-risk  
14 projects to boreal caribou critical habitat,  
15 an offset ratio of 30-to-1 was required in  
16 order to fully address cumulative adverse  
17 effects and have outcomes consistent with  
18 species SARA recovery strategy.

19                   Next slide, please.

20                   ECCC's recommendations are in  
21 addition to GenPGM's commitments and indicate  
22 where ECCC will continue to have a role. ECCC  
23 recommends that GenPGM update the connectivity  
24 analysis, the on-site rehabilitation and  
25 post-closure restoration plan and offset plan

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1 before concluding the assessment process in  
2 order to support decision-making.  
3 Specifically, update their assessment of the  
4 project impacts which represent a high risk to  
5 boreal caribou recovery and connectivity  
6 analysis, which reflects caribou avoidance  
7 behaviour and physical barriers, so that it  
8 demonstrates how long-term within and between  
9 range connectivity will be made possible.

10                                   The connectivity analysis and  
11 corresponding mitigation measures should be  
12 designed and implemented to manage any project  
13 defects to connectivity, including develop a  
14 mine site rehabilitation and post-closure  
15 plan, restoration plan, that provide for  
16 low-resistance corridors and that will allow  
17 for caribou movement and habitat use  
18 throughout the mine site east and west and  
19 north and south post mine closure.

20                                   The identification of  
21 problematic areas for caribou movement, such  
22 as Highway 17 and the Town of Marathon, and  
23 recommendations for priority areas for  
24 mitigation, including offsetting measures.  
25 Note that any residual loss of connectivity

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1 offsetting requirements related to the project  
2 footprint can be directed to address other  
3 off-site barriers to caribou movement as part  
4 of an overall mitigation plan.

5                   Implement mitigation measures  
6 including timing windows for mining  
7 activities, such as the use of explosives, in  
8 order to decrease sensory disturbance to  
9 sensitive category 1 boreal caribou habitat as  
10 identified by the province of Ontario. This  
11 includes following the MECP best management  
12 practices for mineral, exploration and  
13 development activities and woodland caribou in  
14 Ontario.

15                   Next slide, please.

16                   It's important to note that  
17 offsetting is the last-resort option because  
18 it carries risks and uncertainties, such as  
19 proven effectiveness, time lags, risk of  
20 failure, and long-term protection. ECCC would  
21 like to reemphasize the need to reduce the  
22 residual adverse effects of this project with  
23 an updated restoration plan.

24                   Priority areas and specific  
25 measures to address connectivity issues within

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1 the range and the discontinuous distribution  
2 will need to be identified through  
3 collaborative work. Risks and uncertainties  
4 associated with these measures will need to be  
5 identified, such as the feasibility of the  
6 measures, time lags, proven effectiveness,  
7 risk of failure, and long-term protection.

8                   The specific details of the  
9 offset ratio would need to be developed in  
10 collaboration with the ECCC, MECP and  
11 Indigenous communities, and these would be  
12 based on previously mentioned risks and  
13 uncertainties, an updated assessment of the  
14 severity of the residual effects adverse  
15 effects of the final post-closure plan, and  
16 other measures implemented by GenPGM to  
17 maintain critical habitat connectivity.

18                   Next slide, please.

19                   That concludes ECCC's  
20 presentation. Interested parties can obtain  
21 more information by referring to our written  
22 submission which appears on the registry as  
23 document number 1086. Thank you.

24                   PANEL CHAIR: Thank you, Ms.  
25 Carpenter. Appreciate your presentation.

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1 I think we'll go on to the  
2 presentation from Parks Canada. Hello, Ms.  
3 Cherry. Thank you again for coming on the  
4 screen, and my apologies from earlier this  
5 morning and the confusion. We'll turn it over  
6 to you now for your presentation.

7 PRESENTATION BY HEATHER CHERRY:

8 MS. CHERRY: Perfect. Thank  
9 you, Madam Chair and panel members Bruce and  
10 Drescher. My name is Heather Cherry, and I am  
11 a impact assessment scientist in the natural  
12 resources management branch with the Parks  
13 Canada Agency.

14 I'm joining you today from  
15 Invermere, BC, within the traditional  
16 territories of Ktunaxa and Secwepemc Nation.  
17 Parks Canada has participated as a federal  
18 authority throughout the environmental  
19 assessment of the proposed Marathon mine  
20 project. A summary of Parks Canada's written  
21 submission is included in our written hearing  
22 submission to the panel which is CIAR number  
23 1071.

24 I'm joined today, and will  
25 also be joined tomorrow, by my Parks Canada

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1 colleagues, Ms. Eri Hiraga, who is also an  
2 impact assessment scientist in the natural  
3 resources management branch; Ms. Joanne  
4 Tuckwell, a species conservation specialist  
5 with the conservation programs branch; Dr.  
6 Lucy Patterson, an ecologist, team leader at  
7 Pukaskwa National Park; Ms. Christine Drake,  
8 the park manager at Pukaskwa National Park;  
9 and Mr. Daniel Pouliot, the resource  
10 conservation manager at Pukaskwa National  
11 Park.

12 I will now hand it over to  
13 Mr. Pouliot, who will be delivering the  
14 presentation today on behalf of the Parks  
15 Canada Agency. Thank you.

16 PRESENTATION BY DANIEL POULIOT:

17 MR. POULIOT: Thank you,  
18 Heather. For the record, my name is Daniel  
19 Pouliot for Parks Canada, P-O-U-L-I-O-T,  
20 Pouliot.

21 On behalf of the team at  
22 Parks Canada, I want to thank you, Madam Chair  
23 and distinguished members of the panel, for  
24 the opportunity of presenting today. It's a  
25 pleasure to be part of this process.

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1                                   Before starting my  
2 presentation, I would like to take a moment to  
3 acknowledge that I'm joining today from my  
4 home in Marathon, which falls within the  
5 unceded traditional territory of Biigtigong  
6 Nishnaabeg, as well as within the Robinson  
7 Superior Treaty and ancestral land of the  
8 Métis people.

9                                   The Indigenous people are and  
10 have been the stewards of these lands since  
11 thousands of years, and I'm grateful to play a  
12 little bit of that stewardship role today  
13 through my position with Parks Canada.

14                                  I will now present the  
15 presentation. I see it's up. Thank you. If I  
16 could have the next slide, please. Thank you.

17                                  First I would like to open  
18 with the Parks Canada mandate, because it  
19 guides our decision and action. On behalf of  
20 the people of Canada, we protect and present  
21 nationally significant examples of Canada's  
22 natural and cultural heritage and foster  
23 public understanding, appreciation and  
24 enjoyment in ways that ensure the ecological  
25 and commemorative integrity of these places

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1 for present and future generations.

2                                 In other word, our mandate  
3 says that we are doing our best to represent  
4 Canadians in protecting and sharing with all a  
5 few very unique places that are truly special  
6 in both their national and cultural value. We  
7 put a lot of effort and dedication so all  
8 Canadian can feel that the parks are part of  
9 them self, and we do our best to manage those  
10 places so they remain special and unique. For  
11 our generation, our children's and the  
12 children -- the one of our children. The  
13 children's children.

14                                 Next slide, please.

15                                 Our participation to this  
16 hearing process is guided by two Canadian  
17 acts. First, pursuant to Section 20 of the  
18 Canadian Environmental Assessment Act of 2012,  
19 Parks Canada participate as a federal  
20 authority when in possession of relevant  
21 specialist information or expertise related to  
22 potential impacts of a project on protected  
23 heritage areas or resources administered by  
24 Parks Canada.

25                                 Secondly, Parks Canada has

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1 legislated role under the Species at Risk Act  
2 with respect to the protection and recovery of  
3 species at risk, including the boreal  
4 population of woodland caribou, referred to as  
5 boreal caribou in this presentation, on lands  
6 administered by Parks Canada.

7                                   Next slide, please.

8                                   For the remainder of the  
9 presentation, I will highlight briefly the  
10 current status of boreal caribou in the park,  
11 as well as some of the key activities the park  
12 has undertaken more recently with respect to  
13 caribou conservation, and conclude with a  
14 summary of our assessment of the project.

15                                  Pukaskwa National Park is  
16 located approximately 20 kilometres south of  
17 the proposed Marathon Palladium Project.

18                                  Next slide, please.

19                                  This map here comes from the  
20 EIS addendum 2021, CIAR number 727, figure  
21 6.2.8-3. You can see in dark orange -- dark  
22 orange the park location. In green the coastal  
23 range, the caribou -- critical habitat that  
24 follow the coast. And finally, in purple, the  
25 proposed location of the mine circled in red,

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1 the red being the caribou close to the area.

2 Next slide, please.

3 Pukaskwa National Park is a  
4 vast wild natural park found on the edge of  
5 Lake Superior. It covers 1,878 square  
6 kilometres. It's a place where powerful waves  
7 collide with rugged, towering coastlines. A  
8 place of endless sunset over sandy driftwood  
9 beaches. A place where everyone can catch a  
10 glimpse of the rich traditions, values and  
11 contemporary life of the Anishinaabe. Caribou  
12 recovery is a priority identified in the 2015  
13 park management plan.

14 Next slide, please.

15 You can see here an example  
16 of the rugged coastline and the forest along  
17 the park shoreline.

18 Next slide, please.

19 The following slides will  
20 present a summary of the situation of boreal  
21 caribou within Pukaskwa National Park. Until  
22 the last decade, boreal caribou were regularly  
23 occurring within the boundaries of Pukaskwa  
24 National Park. Aerial surveys demonstrated a  
25 decline in number from 1974 to 2009 as

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1 published by Patterson et al. in 2014.

2 Next slide, please.

3 This figure here show the  
4 estimate of the number of caribou present  
5 within the park over time from 1974 to 2009,  
6 and we can see a declining trend over time.

7 Next slide, please.

8 The second figure here show  
9 the recruitment rate that is expressed as a  
10 number of calf per 100 cows over time, also  
11 from 1974 to 2009, and we can see again a  
12 declining trend over time, with no calf  
13 observed at all in the last four surveys.

14 Next slide, please.

15 The last resident caribou in  
16 Pukaskwa was observed in 2011. A trail camera  
17 that we set up in the north end of the park  
18 captured this solitary animal in 2015. Genetic  
19 samples collected suggest that individuals was  
20 more related to animals from Pic Island or  
21 Hearst than those from Pukaskwa.

22 Next slide, please.

23 Over the last decade, the  
24 team at Pukaskwa National Park has conducted a  
25 number of activities on boreal caribou, aiming

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1 at monitoring the coast, protecting the  
2 critical habitat, and educating visitors.

3                   Since 2010, boreal caribou  
4 have been monitored on the coast through a  
5 network of trail cameras in critical habitat,  
6 including calving habitat. From year to year  
7 the number of cameras varied from 10 to 27.

8                   Next slide, please.

9                   The map to the right displays  
10 the location of our cameras. The green ones  
11 are located along the coast in the boreal  
12 caribou critical habitat, and the red dots  
13 represent the camera installed in historic  
14 calving habitat. Six camera have been added to  
15 the network in 2021 to specifically monitor  
16 older forest that are at least 100 years old  
17 in the southern portion of the coast.

18                   Next slide, please.

19                   The protection of the  
20 critical habitat is done in many different  
21 ways, but notably by the commitment to not  
22 plan prescribed fire in boreal caribou  
23 critical habitat at this time. Fire is a key  
24 ecological process in the boreal forest, so  
25 this is a temporary measure in place for

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1 caribou recovery. That was for prescribed  
2 fire, not for wildfire.

3                   When it comes wildfires,  
4 critical habitat is considered a value  
5 requiring protection. In other words, the  
6 primary objective in the 10-kilometre coastal  
7 stretch is to suppress or limit wildfire  
8 spread to a defined perimeter so that  
9 significant habitat is not lost to wildfire.

10                   Next slide, please.

11                   Finally, Pukaskwa National  
12 Park has made much effort over the years and  
13 continue to do so in order to educate visitors  
14 and Canadians on caribou conservation, a key  
15 part of our mandate. This has happened through  
16 on-site park programs and materials, like the  
17 statue of caribou you see here that is  
18 installed in front of the visitor centre. As  
19 well as through website and social media and  
20 participation at events in urban areas like  
21 Toronto, Sudbury and Thunder Bay, to highlight  
22 conservation of species at risk including  
23 caribou.

24                   Next slide, please.

25                   Concerning connectivity in

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1 the boreal caribou, adequate functional  
2 habitat and connectivity within and between  
3 ranges is critical for the persistence of  
4 boreal caribou on the landscape.

5                   Boreal caribou home ranges  
6 often exceed the size of Pukaskwa National  
7 Park. Recovery efforts at Pukaskwa National  
8 Park are likely hampered by habitat conditions  
9 outside of park boundaries, as well as a lack  
10 of connectivity with more northern  
11 populations.

12                   Next slide, please.

13                   As a conclusion I present  
14 here the summary of our recommendations. The  
15 impacts to caribou habitat and connectivity  
16 beyond the borders of Pukaskwa National Park  
17 have implication for the conservation and  
18 recovery of boreal caribou within the park.

19                   Parks Canada plays a  
20 supporting role to ECCC as the competent  
21 department for species at risk under the  
22 Species at Risk Act on lands outside of those  
23 administered by Parks Canada. ECCC hearing  
24 submission is directly relevant to  
25 conservation and recovery goals for boreal

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1 caribou within Pukaskwa.

2 Next slide, please.

3 Parks Canada support ECCC's  
4 conclusion and recommendation for this project  
5 as they relate to boreal caribou to update the  
6 connectivity analysis, on-site rehabilitation  
7 and post-closure restoration plan and the  
8 offset plan before concluding the assessment  
9 process to support decision-making, and  
10 including requirements. To update the  
11 assessment of project impacts and connectivity  
12 analysis. To implement mitigation measures in  
13 order to decrease sensory disturbance. And  
14 finally, to update the off-site mitigation  
15 plan.

16 Next slide, please.

17 On behalf of all the team at  
18 Parks Canada, I want to thank you again, Madam  
19 Chair and distinguished members of the panel,  
20 for the opportunity to present today. Thank  
21 you, merci, Miigwetch.

22 PANEL CHAIR: Thank you very  
23 much, Mr. Pouliot and Ms. Cherry for the  
24 presentation. Much appreciated.

25 I think we'll take an

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1 afternoon break, and then I'll come back and  
2 quickly summarize the plans for the remainder  
3 of the day just so we're all clear. It is 3:05  
4 -- oh, I'm sorry, I see a hand up. Sorry, Mr.  
5 Barretto, go ahead.

6 MR. BARRETTO: Thank you,  
7 Madam Chair. Jeremy Barretto for the record.

8 Madam Chair, just to ask a  
9 process question which you may address after  
10 the break, but we wanted to give you the  
11 benefit. We understand under the panel's  
12 latest schedule issued today that there will  
13 be -- we've completed the vegetation  
14 questions, and there will be additional  
15 questions on migratory birds and wildlife, and  
16 we just wanted to confirm that the  
17 caribou-related questions are scheduled for  
18 tomorrow, to make sure that we have the right  
19 witnesses in place. So that's all we wanted.  
20 Thank you.

21 PANEL CHAIR: Yes, thank you,  
22 Mr. Barretto. Yes, I can say that we do plan  
23 on doing the caribou-related questions  
24 tomorrow, and I'll provide a little bit more  
25 detail after our break, but yes, that is the

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1 plan. Thank you.

2 Okay, 3:05. Let's call it  
3 3:20 we're back here. Thank you very much  
4 everyone.

5 --- Recess taken at 3:04 p.m.

6 --- Upon resuming at 3:24 p.m.

7 PANEL CHAIR: I think we're  
8 back. Sorry, we had just a couple of technical  
9 issues to sort out, but I think we're back.

10 I'll just summarize quickly a  
11 few next steps, although we did that a little  
12 bit before break. Just again a thanks to all  
13 the presenters this afternoon and the earlier  
14 discussion. Much appreciate everyone's  
15 involvement in that.

16 As I mentioned before break,  
17 we will continue today with questions  
18 specifically related to migratory birds and  
19 wildlife, excluding caribou. And while we've  
20 heard presentations today on caribou  
21 specifically, we would like to hold those  
22 questions until after the Ministry of  
23 Environment, Conservation and Parks scheduled  
24 for tomorrow morning has completed their  
25 presentation. Then we'll kind of move into the

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1 questions specifically related to caribou.

2                               So hopefully that works for  
3 everyone, and the panel appreciates your  
4 flexibility with that scheduling.

5                               So what we'll do now is,  
6 having heard from the additional presenters  
7 this afternoon, before we get to panel  
8 questions, I will ask if there are questions  
9 from any of the parties of the presenters  
10 we've heard from specifically about migratory  
11 birds and wildlife.

12                              I'll just quickly ask if  
13 Environment Canada and Climate Change have any  
14 questions to any of the presenters on  
15 migratory birds and wildlife.

16                              MS. CARPENTER: For the  
17 record, Leslie Carpenter, ECCC. At this time  
18 ECCC doesn't have any questions. Thank you.

19                              PANEL CHAIR: Thank you. Can I  
20 ask Ontario Ministry of Northern Development,  
21 Mines, Natural Resources and Forestry, do you  
22 have any questions of the presenters on  
23 migratory birds and wildlife?

24                              MS. DARBY: No, we do not.  
25 Thank you.

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1 PANEL CHAIR: Thank you, Ms.  
2 Darby.

3 Parks Canada, do you have any  
4 question of any of the presenters on migratory  
5 birds and wildlife?

6 MS. CHERRY: Heather Cherry  
7 for the record, and no, we have no questions.  
8 Thank you.

9 PANEL CHAIR: Thank you, Ms.  
10 Cherry.

11 Are there other participants  
12 on the line who had made presentations earlier  
13 or any other participants who would like to  
14 pose questions to any of our presenters today  
15 on migratory birds and wildlife?

16 Okay. Seeing no hands, all  
17 good, I can see them all, that's great. Thank  
18 you very much. So at this time I will turn it  
19 over to my colleague Ms. Drescher to pose  
20 questions on migratory birds and wildlife.  
21 Thank you.

22 QUESTIONS SESSION:

23 PANEL MEMBER DRESCHER: Thank  
24 you, Madam Chair. This particular line of  
25 questioning is with respect to migratory

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1 birds, and I would like to direct it to,  
2 starting off with, GenPGM, Mr. Anwyll.

3                   ECCC has noted that project  
4 works or activities such as construction  
5 access, site grubbing, vegetation clearing and  
6 construction activities are potentially  
7 destructive or disruptive activities to birds,  
8 their nests or eggs. ECCC indicates that  
9 activities should be avoided at key locations  
10 or during key periods, including the breeding  
11 periods and periods of high usage, such as  
12 migration and/or feeding.

13                   While avoidance is the best  
14 approach, in order to minimize the risk of  
15 detrimental effects to migratory birds, ECCC  
16 notes appropriate mitigation measures should  
17 be developed and implemented to avoid  
18 incidental take and to help maintain  
19 sustainable populations of migratory birds.  
20 The reference here is CIAR 1086; PDF 56.

21                   So the question that we have,  
22 the panel would like to understand better how  
23 surveys for nests that can often be difficult  
24 to spot will be carried out prior to clearing.  
25 Specifically, does the proponent have a plan

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1 in place for when bird nesting surveys would  
2 occur? Assuming clearing will be occurring  
3 prior to March 31st, can the proponent commit  
4 to survey times in March?

5 MR. ANWYLL: I will caucus  
6 quickly to get the appropriate answer.

7 PANEL MEMBER DRESCHER: Thank  
8 you.

9 DR. FOSTER: Hi there, Rob  
10 Foster for the record. I'll address this  
11 question. Our intent is to clear outside the  
12 bird breeding season, which typically for most  
13 species within bird conservation 8, which is  
14 the area in which the project lies, that would  
15 be from April 15th to August 31st. There are a  
16 few bird species that will nest in March, but  
17 I believe the recommended nesting period that  
18 Environment Canada was asking for was April  
19 15th to August 31st. That would give enough  
20 time for nestings -- to have fledged and left  
21 the nest at the end of the breeding season.

22 PANEL MEMBER DRESCHER: Thank  
23 you. Can you also commit to survey times in  
24 March?

25 DR. FOSTER: Typically you do

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1 surveys for nests if you cannot clear outside  
2 the breeding season in order to avoid  
3 incidental take. So these surveys are intended  
4 to identify where nests are so you can avoid  
5 them. Are you asking for bird nest surveys in  
6 March for those species that might still be  
7 nesting in March, such as owls or gray jays?

8 PANEL MEMBER DRESCHER: Yes.

9 DR. FOSTER: Give me a moment,  
10 please, to confer with my colleagues.

11 PANEL MEMBER DRESCHER: Thank  
12 you.

13 DR. FOSTER: Rob Foster for  
14 the record.

15 If clearing could not be  
16 completed before beginning of March, we could  
17 commit to surveying those areas that remain to  
18 be harvested for nests, to avoid incidental  
19 take as required under the Migratory Birds  
20 Convention Act. We would focus on the habitats  
21 that were most likely to support those few  
22 species that may be breeding in March such as  
23 owls, gray jays, and other birds that are  
24 protected under the MBCA but that breed  
25 earlier in the season. I may note that the

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1 vast majority of birds don't begin nesting  
2 until much later.

3 PANEL MEMBER DRESCHER: Thank  
4 you for that clarification.

5 I do have some more questions  
6 for you in this same line. And do you have any  
7 specifics that you can share with us on the  
8 surveys themselves? So what is the scope and  
9 methodology that GenPGM plans to use.

10 DR. FOSTER: Absolutely. I've  
11 conducted quite a number of incidental take  
12 surveys for various clients, including mining  
13 clients, and typically actually in this  
14 breeding bird -- in this breeding bird area,  
15 conservation region 8, for another mine  
16 recently last year, we did incidental take  
17 surveys, because they did not manage to clear  
18 the entire site area before April 15th.

19 So it was the April 15th date  
20 they used and not March, but what that  
21 entailed was walking through the area, to be  
22 clear, in advance of the harvesting -- using  
23 mechanical feller-bunchers, I would say it's  
24 walking in those areas that are about to be  
25 cleared within the next few days to a week and

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1 visually surveying for any nests and looking  
2 for birds that might be indication of nesting  
3 in the area.

4                               So looking for, you know,  
5 either stick nest, cavity nests, or ground-  
6 nesting birds and looking for birds that are  
7 apparently on territory.

8                               So then if a nest was  
9 suspected, we would try to find the nest and  
10 then would flag the nest with flagging tape so  
11 that -- and take a GPS recording so that the  
12 nest is identified, and then an appropriate  
13 buffer could be left around that nest and it  
14 would not be cleared until the birds have  
15 finished nesting, if they indeed were nesting  
16 at that location.

17                              PANEL MEMBER DRESCHER: Thank  
18 you for that clarification. My next question  
19 is to ECCC, specifically CWS, representative.  
20 Hello, Ms. Carpenter.

21                              The question that I have here  
22 is could you provide any additional expertise  
23 and clarification on specific situations when  
24 clearing within the nesting season is  
25 permitted, and what types of mitigation

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1 measures would be required to clear vegetation  
2 within a nesting season?

3 MS. CARPENTER: Thank you for  
4 the question. Can I please have a moment no  
5 caucus with my experts?

6 PANEL MEMBER DRESCHER:  
7 Absolutely.

8 MS. CARPENTER: Thank you for  
9 the time. As far as clearing out, like, during  
10 the nesting season, we recommend that everyone  
11 follows the MBCA, the Migratory Birds  
12 Convention Act. ECCC always states that  
13 avoidance is the first step, but we also  
14 provide avoiding harm guidelines on our  
15 website. Typically, clearing within the  
16 nesting season would only occur for areas that  
17 are small and relatively not complex, so that  
18 it would be quite clear if the nest was found  
19 in one of those trees. I wouldn't say that  
20 clearing over 1,100 hectares of forest is  
21 considered not complex.

22 PANEL MEMBER DRESCHER: Thank  
23 you very much.

24 On that avoidance harm to  
25 migratory birds, for the record, would you be

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1 able to -- I appreciate that it's available on  
2 the website, but we do need it for the record.  
3 Would you be able to provide us with a copy of  
4 that?

5 MS. CARPENTER: Leslie  
6 Carpenter, ECCC, for the record. Yes, we can  
7 provide that for you.

8 UNDERTAKING 12:

9 PANEL MEMBER DRESCHER: So  
10 that will be undertaking number 12. Thank you.

11 Just one other question, Ms.  
12 Carpenter. Generation PGM's proposal for their  
13 surveying methodology. Is there anything else  
14 that in your view they need to consider, or  
15 are you satisfied with the approach they have  
16 specified?

17 MS. CARPENTER: Thank you for  
18 the question. Could I have a moment to caucus  
19 with my experts?

20 PANEL MEMBER DRESCHER:  
21 Absolutely.

22 MS. CARPENTER: Thank you.  
23 Thank you for the time. Leslie Carpenter,  
24 ECCC, for the record.

25 Yes, I just conferred with

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1 our experts that the surveying protocols,  
2 specifically the ones done in 2020, the 2020  
3 field season by Generation PGM, were  
4 sufficient.

5 PANEL MEMBER DRESCHER: Thank  
6 you very much. Thank you. My next question is  
7 to GenPGM. Sorry, too many pages.

8 In their hearing submission,  
9 MNRF noted that it cannot be assumed that  
10 birds will be able to find alternate  
11 territories, and that habitat carrying  
12 capacity in surrounding areas will allow for  
13 settling of displaced wildlife. ECCC notes in  
14 their CIAR 1086, PDF 55, and I quote:

15 "The temporary and permanent  
16 removal of migratory bird habitat by  
17 developing the project will have an impact on  
18 local bird population; however, it is  
19 anticipated that the birds will relocate to  
20 similar habitat that is adjacent to the site  
21 and that adjacent available habitat is  
22 sufficient to support the displaced birds."

23 ECCC goes on and indicates,  
24 however, that there will be significant lag  
25 between when the forest stands are removed and

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1 when the forest stands with habitat  
2 characteristics suitable for forest birds are  
3 available. Furthermore, ECCC states that if  
4 the entire site is remediated at the same time  
5 using the same prescription, the resulting  
6 even-age class structure and species  
7 composition will not produce the same habitat  
8 as currently exists without a silviculture  
9 plan.

10                               The question is, can GenPGM  
11 describe how, in its view, progressive  
12 reclamation will benefit the birds, please?

13                               And the follow-up on that is  
14 can GenPGM -- sorry, how does GenPGM intend to  
15 monitor the success of progressive reclamation  
16 on bird habitat and populations?

17                               MR. ANWYLL: Thank you for  
18 your question, Panel Member Drescher. I would  
19 like to caucus for a second, please.

20                               PANEL MEMBER DRESCHER: Of  
21 course.

22                               DR. FOSTER: Rob Foster for  
23 the record. If I could just have you repeat  
24 that question, if you don't mind, then I'll  
25 make sure that I address all the salient

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1 points.

2 PANEL MEMBER DRESCHER: First  
3 part of the question is can GenPGM describe  
4 how, in its view, progressive reclamation will  
5 benefit birds? And the second part is how does  
6 GenPGM intend to monitor the success of  
7 progressive reclamation on bird habitat and  
8 populations?

9 DR. FOSTER: Thank you. I just  
10 wanted to get that clear, given the preamble  
11 about the agency's comments.

12 Progressive rehabilitation on  
13 the site is intended to test different  
14 vegetation and soil trials on the rock  
15 stockpile to see which are most effective and  
16 can be used later during the active phase of  
17 rehabilitation post-closure. These aren't  
18 intended to provide temporary habitats to  
19 birds, but is rather designed to help refine  
20 the re-vegetation techniques at closure, and  
21 as such, we don't have any intention on  
22 monitoring bird populations in those  
23 progressive rehabilitation trials.

24 PANEL MEMBER DRESCHER: Okay.  
25 Thank you. The next question to Generation

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1 PGM. Mr. Anwyll.

2 In the vegetation  
3 presentation from GenPGM this morning, we  
4 heard confirmation that you intend to clear  
5 1,116 hectares project footprint, 1,080  
6 hectares of which is forest. GenPGM has stated  
7 that:

8 "Although habitat  
9 fragmentation will reduce local connectivity  
10 within the LSA and SSA during the life of the  
11 project, the fragmentation will not  
12 substantially alter the broad scale landscape  
13 connectivity in the RSA."

14 That's from CIAR 727,  
15 wildlife section which is section 6, PDF 47.

16 The question is, can the  
17 proponent further explain this statement to  
18 the panel? We would like to understand your  
19 rationale, how did GenPGM determine that  
20 forest clearing of more than 1,100 hectares in  
21 the SSA would not fragment the local  
22 landscape?

23 MR. ANWYLL: Got it. I'll  
24 caucus quickly, please.

25 PANEL MEMBER DRESCHER: Thank

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1 you.

2 DR. FOSTER: Thank you for the  
3 question, Panel Member Drescher.

4 With respect to the regional  
5 landscape, the thousand plus hectares that  
6 will be cleared in the site study area is a  
7 large patch, but in relation to natural  
8 disturbance in ecoregion 3WR, the regional  
9 study area, it's not a large patch.  
10 Approximately 87 percent of the natural  
11 wildfires in the last 60 years in the Pic  
12 River forest management unit exceed a thousand  
13 hectares.

14 So this is an average-size  
15 patch under natural disturbance regimes. So  
16 although it may seem large at 1,100 hectares,  
17 with respect to natural disturbance pattern,  
18 which are broad scale fires, typically  
19 experienced in the boreal forest, prior to  
20 fire suppression by man that would have been  
21 even larger, this is not a large disturbance  
22 patch. So although it will result in some  
23 fragmentation at the local level because it is  
24 1,100 hectares, at the larger landscape level,  
25 it's not that big a patch.

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1                   We did landscape level  
2 analysis of patch size metrics using the  
3 Ontario Landscape Tool which is the standard  
4 tool that is used for emulating natural  
5 disturbance when conducting forest management,  
6 so this is an MNR-supported tool, and we  
7 looked at patch size in the regional study  
8 area and compared it to the disturbance size  
9 from the site footprint, and the project had a  
10 negligible impact on overall landscape  
11 patterns and metrics, and that's why we  
12 concluded that there was residual-type forest  
13 fragmentation, based on that analyses.

14                   PANEL MEMBER DRESCHER: Thank  
15 you very much. My next question is with  
16 respect to sandhill cranes, to GenPGM.

17                   DR. FOSTER: I expect that I  
18 will probably be best placed to answer that.

19                   PANEL MEMBER DRESCHER: Thank  
20 you. GenPGM noted in the EIS addendum 727,  
21 section 6.2.7.4, which is PDF 46, that  
22 sandhill cranes are an area-sensitive species  
23 from the LSA. GenPGM noted that six new  
24 species were detected in the LSA in 2020,  
25 including the sandhill crane.

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1                                   One individual sandhill crane  
2 was seen via trail camera in its breeding  
3 season in suitable nesting habitat, which is  
4 marsh or wetland. The panel also understands  
5 that Ganugami (ph) First Nation considers  
6 sandhill crane a valued species, and indicated  
7 that sandhill crane may be present in the  
8 project area, and this is stated in CIAR 908.  
9 Although the proponent recognizes that this  
10 species is vulnerable due to their large  
11 wingspan and relatively poor mobility, the  
12 risk to sandhill cranes from the project is  
13 believed to be:

14                                   "...negligible due to their  
15 low number in the LSA and since the  
16 transmission line does not cross any of their  
17 preferred meadow marsh or open peat land  
18 habitat, reducing the risk of negative  
19 interaction."

20                                   As a mitigative measure, the  
21 proponent notes that yellow marker balls,  
22 50-centimetre diameter, are recommended at a  
23 spacing of a hundred metres for sandhill  
24 cranes, and you also go on to reference a  
25 research paper from Morkel and Anderson from

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1 1991 which explores the effectiveness of  
2 marking power lines to reduce sandhill crane  
3 collisions.

4                                 Can GenPGM please explain to  
5 the panel whether they have explored other,  
6 more recent types of mitigation for sandhill  
7 cranes? Are there newer approaches to  
8 mitigation to increase visibility of  
9 transmission lines, particularly for those  
10 birds that are not highly manoeuvrable, such  
11 as in this case sandhill cranes?

12                                 DR. FOSTER: Thank you for the  
13 question. I will confer with my colleagues and  
14 get back to you. Thank you, Chairperson  
15 Drescher. Rob Foster for the record.

16                                 I was just confirming with  
17 some avian biologists, colleagues of mine. We  
18 aren't aware of any newer techniques for  
19 mitigation of collision with hydro lines other  
20 than the use of bioluminescent tape or markers  
21 and balls. They're fairly standard mitigation  
22 measures that are used for areas that might  
23 pose a collision risk.

24                                 We don't expect a large risk  
25 given the short length of that transmission

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1 line and the low frequency of use of -- of the  
2 study area by sandhill cranes. We didn't see  
3 any on Canoe Lake - there really aren't large  
4 wetlands that are attractive to sandhill  
5 cranes.

6 PANEL MEMBER DRESCHER: Thank  
7 you. My next question is to ECCC, please. Ms.  
8 Carpenter.

9 Do you have any additional  
10 comments on mitigative measures with relation  
11 to sandhill crane protection?

12 MS. CARPENTER: Thank you for  
13 the question. Could I please have a moment to  
14 caucus with my experts?

15 PANEL MEMBER DRESCHER:  
16 Absolutely. Thank you.

17 MS. CARPENTER: Thank you.  
18 Thank you for the time.

19 At this time ECCC does not  
20 have any concerns specifically for sandhill  
21 crane, and we recommend that Generation PGM  
22 put up those visual markers, obviously, to  
23 avoid any collisions with the transmission  
24 line.

25 PANEL MEMBER DRESCHER: Thank

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1 you very much, Ms. Carpenter. Thank you.

2 My next question is to --  
3 back to GenPGM, please. Mr. Foster, in the  
4 hearing submission by ECCC, which is CIAR  
5 1086, they've indicated that noise from  
6 ongoing operations will be constant and may  
7 influence waterfowl and forest bird use as  
8 suitable habitat in the immediate vicinity as  
9 well as impact the reproductive success of  
10 songbirds who use songs to attract mates.

11 The question is, aside from  
12 the mitigation measures summarized in IR 6-11,  
13 which is 950, does Generation PGM have any  
14 additional mitigation measures that could  
15 address potential effects related to the  
16 reproductive success of songbirds and songbird  
17 habitat used in the vicinity of the  
18 operations?

19 DR. FOSTER: Thank you for the  
20 question. If you don't mind, I'll take a  
21 moment to confer with my colleagues.

22 PANEL MEMBER DRESCHER: Thank  
23 you.

24 DR. FOSTER: Thank you. Rob  
25 Foster for the record.

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1 I believe that the -- sorry,  
2 I was just getting a bit of feedback. It seems  
3 to have cleared up. The reference to 6-11  
4 dealt specifically with the noise from  
5 blasting and mitigation for blasting. There  
6 was other mitigation for sound, more general  
7 in sound that was presented in the noise  
8 chapter of the EIS as well. But with respect  
9 to birds, there wasn't any specific additional  
10 bird-centric noise mitigation measure that  
11 were predicted. We did assess those impacts,  
12 as you mentioned, including mapping of the  
13 projected area that would be influenced by  
14 noise up to 50 decibels, but we didn't have  
15 any specific mitigation other than those that  
16 are presented in the EIS for either songbirds  
17 or for waterfowl in the adjacent LSA.

18 PANEL MEMBER DRESCHER: Thank  
19 you very much, Dr. Foster. I was hoping to ask  
20 ECCC to please come on-line. Thank you, Ms.  
21 Carpenter.

22 Do you have -- does ECCC have  
23 any additional mitigation measures to propose  
24 that would address the potential effects to  
25 reproductive success of songbirds in the

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1 project area?

2 MS. CARPENTER: Thank you for  
3 the question. Could I please have a moment to  
4 caucus with my experts?

5 PANEL MEMBER DRESCHER: Thank  
6 you.

7 MS. CARPENTER: Thank you for  
8 the time. Leslie Carpenter, ECCC, for the  
9 record.

10 So we actually have on our  
11 avoiding harm to migratory birds website page,  
12 which is undertaking number 12, I believe, we  
13 do actually have some guidance in terms of  
14 establishing buffer zones and setback  
15 distances.

16 PANEL MEMBER DRESCHER: So  
17 you're referring us to that document and  
18 you'll be able to provide that?

19 MS. CARPENTER: Yes, we will,  
20 yes.

21 PANEL MEMBER DRESCHER: Thank  
22 you very much. Thank you. Back to GenPGM,  
23 please.

24 Thank you. Could you describe  
25 the mitigation measures that GenPGM intends to

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1 implement to prevent bird interaction with the  
2 PSMF and the water management pond on an  
3 ongoing basis, or could you explain why  
4 mitigation is not necessary?

5 DR. FOSTER: Thank you for the  
6 question. I'll briefly confer with my team, if  
7 you don't mind.

8 PANEL MEMBER DRESCHER: Thank  
9 you.

10 DR. FOSTER: Rob Foster for  
11 the record. We discussed this in IR 6-26 of  
12 CIAR number 950, and it was our estimation  
13 that specific mitigation measures were not  
14 required as we don't expect significant  
15 interaction with the PSMF or expect negative  
16 effects from it.

17 PANEL MEMBER DRESCHER: Thank  
18 you very much for the clarification.

19 Although you're promoting  
20 that mitigation is not necessary, could you  
21 outline for us what monitoring is proposed to  
22 ensure that the water in these facilities is  
23 safe for exposure to birds over the life of  
24 the mine? Some migratory birds may return to  
25 either the PSMF or water management pond on a

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1 yearly basis, and just what monitoring plans  
2 are in place to ensure that the water is  
3 actually safe for these birds?

4 DR. FOSTER: I'll need to  
5 confer with other members of the team on this,  
6 if you don't mind.

7 PANEL MEMBER DRESCHER: Thank  
8 you.

9 DR. FOSTER: Thank you. Thank  
10 you for that brief moment. I will turn you  
11 over to my colleague Jeremy Dart. He will be  
12 able to more fulsomely answer your question  
13 for you.

14 PANEL MEMBER DRESCHER: Thank  
15 you.

16 MR. DART: Thank you for the  
17 question, Panel Member Drescher and Madam  
18 Chair. Jeremy Dart for the record.

19 Part of the monitoring  
20 programs that we'll establish on-site will  
21 include surface water quality monitoring at  
22 the various inputs throughout the mine site.  
23 In addition to that, there will also be a  
24 wildlife monitoring program implemented. At  
25 the time, these aren't detailed on what the

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1 components of these programs will be. However,  
2 there will be an adaptive management protocol  
3 as well.

4 PANEL MEMBER DRESCHER: Thank  
5 you for that. Could you just elaborate on the  
6 adaptive management protocol. Specifically,  
7 what triggers would you use to make the  
8 adjustments?

9 MR. DART: Thank you, Panel  
10 Member Drescher. Jeremy Dart for the record.

11 At this time, we don't have  
12 those explicitly developed. However, they will  
13 be under development should the project be  
14 approved.

15 PANEL MEMBER DRESCHER: Thank  
16 you very much. That is the conclusion of my  
17 questions. I'll turn it back to Madam Chair.  
18 Thank you.

19 PANEL CHAIR: Thank you, Ms.  
20 Drescher. I just request that the panel take  
21 five minutes to caucus, please. Thank you.

22 --- Recess taken at 4:18 p.m.

23 --- Upon resuming at 4:21 p.m.

24 PANEL CHAIR: I think what  
25 we've decided to do is, given the hour of the

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1 day, we are going to conclude proceedings for  
2 the day and resume tomorrow with the one  
3 presentation from Ontario Ministry of  
4 Environment, Conservation and Parks, and then  
5 continue our line of questioning related to  
6 wildlife species at risk, caribou, and then  
7 Generation PGM on their closing responses.

8                               So that will conclude today's  
9 proceedings, and we'll see everybody back here  
10 at 9 o'clock tomorrow morning. Thank you  
11 everyone. Have a good evening.

12 --- Whereupon at 4:22 p.m. the proceedings were  
13 adjourned till Wednesday, March 23, 2022,  
14 at 9:00 a.m.