



INFORMATION REQUEST –T(3)-06 MIGRATORY BIRDS AND SPECIES AT RISK

Source: Environment and Climate Change Canada

Summary of Comment

Subsections 10.2.7 and 13.1.2 of the EIS Guidelines require the EIS to provide information on the potential effects, proposed mitigation, monitoring and follow-up program with respect to wildlife, including migratory birds and species at risk.

It is unclear which ecosystem classification system was used to generate Table T(2)-10-1. Environment and Climate Change Canada recommends using a standardized ecosystem classification system.

In addition, baseline estimates for the number of birds potentially affected by noise greater than 50 dB in the study area should be provided.

The information is required by the Agency to evaluate the potential effects, and proposed mitigation and follow-up program.

Reference to EIS

EIS Guidelines 10.2.7, 13.1.2

EIS Report Subsection 3.8, Table 3-21

Previous IR

T(2)-10-, T-55

Information Request (IR) #1

State which standardized ecosystem classification system was used to generate Table T(2)-10-1, and define the habitat types appearing in the table.

Response

For the purposes of the EIS/EA report, plant communities within the Mine Study Area (MSA) and along the access road and transmission line were assessed and delineated based on two classification systems, at the request of the Atikokan District Ministry of Natural Resources and Forestry (MNRF). The Field Guide to the Wetland Ecosystem Classification for Northwestern Ontario (Harris et al. 1996) was used to assess wetlands, and the Terrestrial and Wetland Ecosites of Northwestern Ontario (Racey et al. 1996) was used to assess upland ecosites. The Ontario Wetland Evaluation System (MNRF 2014), was also used in order to conduct an evaluation of the wetlands within the MSA.

The resulting fine scale land classification was presented at the ecosite and vegetation type level in the EIS/EA. However, in order to meet the requirements of 20 avian point count survey stations per habitat type, as recommended by Environment and Climate Change Canada (ECCC), the plant communities needed to be larger.



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The communities were grouped at a coarser scale to classify bird habitat and were based on the categories defined in the MNRF Provincial Land Cover Data Base, 2nd Edition (2000), which includes 27 broad land cover types.

The fine scale plant communities are defined in the EIS/EA report and Terrestrial Ecology TSD (Section 2.2.2 and Appendix 2.II). Table T(3)-06-1 below includes a summary of the comparison between the fine scale plant community classifications in the EIS/EA and the coarse scale categories used for bird habitat analysis.

Table T(3)-06-1: Coarse Level Plant Community Groupings

Landcover Class	Comparable ELC Codes
Dense Coniferous	ES-A ES-B ES-C ES-D ES-H
Dense Deciduous	ES-E
Dense Mixed Forest	ES-F ES-G ES-I
Disturbed	Cutover
Rock Barren	ES-J
Conifer Swamp	W27 W28 W29 W30 W31 W32
Deciduous Swamp	W33 W34
Thicket Swamp	W35 W36
Marsh	W1 W2 W3 W4 W5 W10 W11 W12 W13
Open Fen	W14 W15 W19 W20 W21



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Landcover Class	Comparable ELC Codes
Treed Fen	W18 W16 W22
Open Bog	W24
Treed Bog	W25 W26

Attachments

N/A

IR #2

Provide the species and bird count estimates for migratory birds that may be present in the study areas affected by noise greater than 50 dB, using the breeding bird survey data.

Response

Table T(3)-06-2 and Figure T(3)-06 summarizes the estimates for migratory birds that may be present within the area of predicted noise levels of greater than 50db (Area of Concern; Figure T(3)-06). Note that the avian point count data was collected before the noise level modelling, and therefore the Area of Concern was not considered in the avian survey study design. However, for the purpose of this analysis, it was assumed that spatial and habitat coverage was sufficient. Only data from avian point counts that fall within the Area of Concern was used for this analysis. Those birds identified within a 50 metre radius of the observer was used, and flyovers were excluded. This data was then used to determine mean number of birds per point count (considering the 50 metre radius), which was then extrapolated to the Area of Concern, not including open waterbodies (i.e. 4650.25ha).

Figure T(3)-06 shows the location of the breeding bird point counts in relation to the predicted noise levels.

Attachments

Figure T-(3)-06



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Table T(3)-06-2: Estimated Bird Density Potentially Impacted by noise >50db

Scientific Name	Common Name	Number of Birds Observed (<50 m) on all point counts combined	Mean Birds / Point count	Density/ha within the areas of predicted noise >50db (4650.25ha)	Total Number of Birds for areas of potential noise >50db (4650.25ha)
<i>Corvus brachyrhynchos</i>	American Crow	1	0.04	0.05	232.51
<i>Turdus migratorius</i>	American Robin	4	0.14	0.18	837.05
<i>Setophaga castanea</i>	Bay-breasted Warbler	5	0.18	0.23	1069.56
<i>Mniotilta varia</i>	Black-and-white Warbler	3	0.11	0.14	651.04
<i>Setophaga fusca</i>	Blackburnin Warbler	3	0.11	0.14	651.04
<i>Poecile atricapilla</i>	Black-capped Chickadee	1	0.04	0.05	232.51
<i>Vireo solitarius</i>	Blue-headed Vireo	2	0.07	0.09	418.52
<i>Larus philadelphia</i>	Bonaparte's Gull	1	0.04	0.05	232.51
<i>Wilsonia canadensis</i>	Canada Warbler	1	0.04	0.05	232.51
<i>Bombycilla cedrorum</i>	Cedar Waxwing	2	0.07	0.09	418.52
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler	1	0.04	0.05	232.51
<i>Spizella passerina</i>	Chipping Sparrow	2	0.07	0.09	418.52
<i>Gavia immer</i>	Common Loon	1	0.04	0.05	232.51
<i>Geothlypis trichas</i>	Common Yellowthroat	1	0.04	0.05	232.51
<i>Regulus satrapa</i>	Golden-crowned Kinglet	5	0.18	0.23	1069.56
<i>Perisoreus canadensis</i>	Gray Jay	3	0.11	0.14	651.04
<i>Tringa melanoleuca</i>	Greater Yellowlegs	1	0.04	0.05	232.51
<i>Picoides villosus</i>	Hairy Woodpecker	1	0.04	0.05	232.51
<i>Catharus guttatus</i>	Hermit Thrush	2	0.07	0.09	418.52
<i>Empidonax minimus</i>	Least Flycatcher	7	0.25	0.32	1488.08



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<i>Melospiza lincolnii</i>	Lincoln's Sparrow	4	0.14	0.18	837.05
<i>Setophaga magnolia</i>	Magnolia Warbler	24	0.86	1.1	5115.28
<i>Oporornis philadelphia</i>	Mourning Warbler	1	0.04	0.05	232.51
<i>Oreothlypisa ruficapilla</i>	Nashville Warbler	13	0.46	0.59	2743.65
<i>Setophaga americana</i>	Northern Parula	6	0.21	0.27	1255.57
<i>Seiurus noveboracensis</i>	Northern Waterthrush	1	0.04	0.05	232.51
<i>Seiurus aurocapilla</i>	Ovenbird	5	0.18	0.23	1069.56
<i>Spinus pinus</i>	Pine Siskin	1	0.04	0.05	232.51
<i>Sitta canadensis</i>	Red-breasted Nuthatch	6	0.21	0.27	1255.57
<i>Vireo olivaceus</i>	Red-eyed Vireo	12	0.43	0.55	2557.64
<i>Regulus calendula</i>	Ruby-crowned Kinglet	3	0.11	0.14	651.04
<i>Bonasa umbellus</i>	Ruffed Grouse	1	0.04	0.05	232.51
<i>Melospiza melodia</i>	Song Sparrow	1	0.04	0.05	232.51
<i>Catharus ustulatus</i>	Swainson's Thrush	17	0.61	0.78	3627.2
<i>Melospiza georgiana</i>	Swamp Sparrow	2	0.07	0.09	418.52
<i>Vermivora peregrina</i>	Tennessee Warbler	2	0.07	0.09	418.52
<i>Tachycineta bicolor</i>	Tree Swallow	1	0.04	0.05	232.51
<i>Catharus fuscescens</i>	Veery	4	0.14	0.18	837.05
<i>Zonotrichia albicollis</i>	White-throated Sparrow	20	0.71	0.9	4185.23
<i>Troglodytes hiemalis</i>	Winter Wren	4	0.14	0.18	837.05
<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher	2	0.07	0.09	418.52



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<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	3	0.11	0.14	651.04
<i>Setophaga coronata</i>	Yellow-rumped Warbler	5	0.18	0.23	1069.56
Total		185	—	—	39527.15



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References

- Harris, A.G., S.C. McMurray, P.W.C Uhlig, J.K. Jeglum, R.F. Foster, and G.D. Racey 1996. *Field guide to the wetland ecosystem classification for northwestern Ontario*. Ont. Min. Natur. Resour, Northwest Sci. & Technol. Thunder Bay, Ont. Field Guide FG-01. 74 pp. + Append.
- Ministry of Natural Resources and Forestry (MNRF). 2014. Ontario Wetland Evaluation System Northern Manual, 1st Edition, Version 1.3. Queen's Printer for Ontario.
- Ministry of Natural Resources and Forestry (MNRF). 2016. Provincial Land Cover Data Base, 2nd Edition (2000). URL: <https://www.ontario.ca/data/provincial-land-cover>
- Racey, G.D, Harris, A.G, Jeglum, J.K, Foster, R.F. and Wickware, G.M. 1996. *Terrestrial and wetland ecosites of northwestern Ontario*. Ont. Min. Natur. Resour. Northwest Sci. & Technol. Filed Guide FG-02. 94 pp. + Append.

GRT Review Findings and Comments on above Responses

(Provided in letter to proponent dated August 16, 2016)

The response clarifies the potential effects on migratory birds due to noise. Methods for monitoring surveys will require consultation with Environment and Climate Change Canada (ECCC) well in advance of the construction phase to ensure the methodology and baseline datasets are appropriate. The timing must be acceptable to meet ECCC requirements for the follow-up program.

The response provides estimates of numbers of birds impacted by noise by using those detected within 50 metres of an observer during an avian point count. During forest point counts, observers can typically detect all birds within 100 metres of them, which is why forest bird monitoring stations are 250 metres apart (i.e. essentially no overlap of heard birds). For consistency, ECCC would have preferred that the estimation utilize the 100 metres distance when calculating densities.

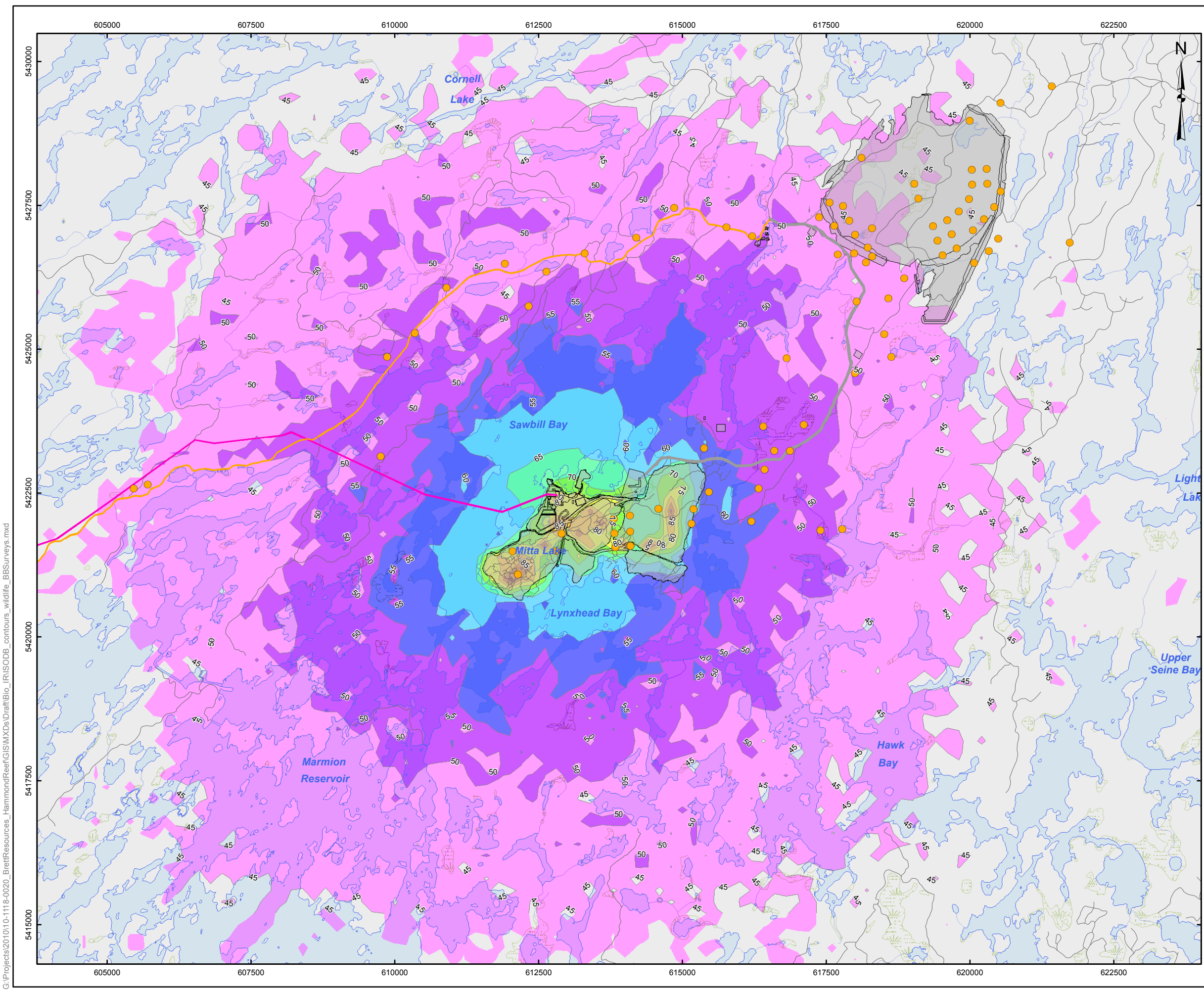
Required Clarification

The proponent is expected to address ECCC's requirements for long-term monitoring under the follow-up program, including baseline data, method development, implementation and timing. A commitment to this should be included in the updated commitments registry.

CMC Response

CMC is committed to the development of a monitoring program that addresses the requirements of Environment and Climate Change Canada (ECCC) with respect to the potential effects on migratory birds due to noise. CMC will consult with ECCC well in advance of the construction phase to ensure the monitoring methodology, including timing, and baseline datasets are appropriate. This commitment will be included in the updated commitments registry.

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LEGEND

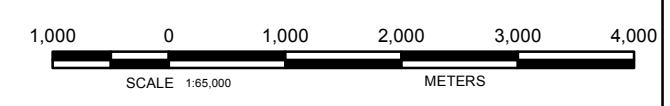
- Breeding Bird Point Count Survey
- River/Stream
- Lake
- Wetland
- Mine Site Road
- Access Road (Hardtack / Sawbill)
- Project Transmission Line
- Project Facilities

Predicted Noise Level (dB)

- <45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- 75 - 80
- 80 - 85
- 85 - 90
- 90 - 95

REFERENCE

Base Data - Provided by OSISKO Hammond Reef Gold Project Ltd.
 Base Data - MNR NRVIS, obtained 2004
 Produced by Golder Associates Ltd under licence from
 Ontario Ministry of Natural Resources, © Queens Printer 2008
 Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 15N



PROJECT	HAMMOND REEF GOLD PROJECT EIS/EA INFORMATION REQUEST #3		
TITLE	PREDICTED NOISE LEVEL FOR ECOLOGICAL RISK ASSESSMENT		
 Golder Associates Mississauga, Ontario	PROJECT NO. 1408383	SCALE AS SHOWN	VERSION 1
	DESIGN CGE 14 Nov. 2008	FIGURE: T(3)-06	
	GIS SO 01 Apr. 2016		
	CHECK NF 01 Apr. 2016		
REVIEW SS 01 Apr. 2016			

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