COEUR

ALASKA

KENSINGTON GOLD MINE

2013 TERRESTRIAL WILDLIFE MONITORING REPORT OF THE SLATE LAKES BASIN KENSINGTON GOLD MINE

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1.0 Introduction

This report describes the 2013 wildlife monitoring season (August - October) in accordance with the Kensington Project Terrestrial Wildlife Monitoring Plan. Coeur Alaska and resource agencies designed this plan to monitor wildlife resources in the Slate Lakes basin. Monitoring recorded the effectiveness of mitigation during mine operations that encourages use by local wildlife.

The Kensington Gold Project Final Supplemental Environmental Impact Statement (FSEIS) (USFS 2004) documented the occurrence of wildlife species in the Slate Lakesbasin prior to construction activity. Coeur Alaska conducted a baseline survey in 2005(Living System Designs 2005). Management indicator species in the Berners Bay area include black and brown bear, Sitka black-tailed deer, Alexander Archipelago wolf, Bald Eagle, red squirrel, river otter, marten, red-breasted sapsucker, brown creeper, and Vancouver Canada goose.

Sightings of wildlife or their sign within the Slate Lakes basin include moose, black bear, Canada geese, ducks, red squirrels, porcupine, river otter, old beaver cuttings, Bald Eagles, boreal toads, and various mustelid species. A lack of prey, including Sitka black-tailed deer, in the Slate Lakes area is suspected to be caused by wolves.

Coeur Alaska monitored wildlife in 2006 and 2007 during the first phase of construction. There was no construction activity during 2008 and no wildlife monitoring was conducted during this period. Wildlife monitoring was resumed in early September 2009 at the start-up of constructing the Tailings Treatment Facility (TTF) and continued through 2010 and 2011 summer seasons. Monitoring continued in 2012 during the construction of stage two of the tailings dam. Monitoring continued in 2013 although there was no dam construction activities during the year.

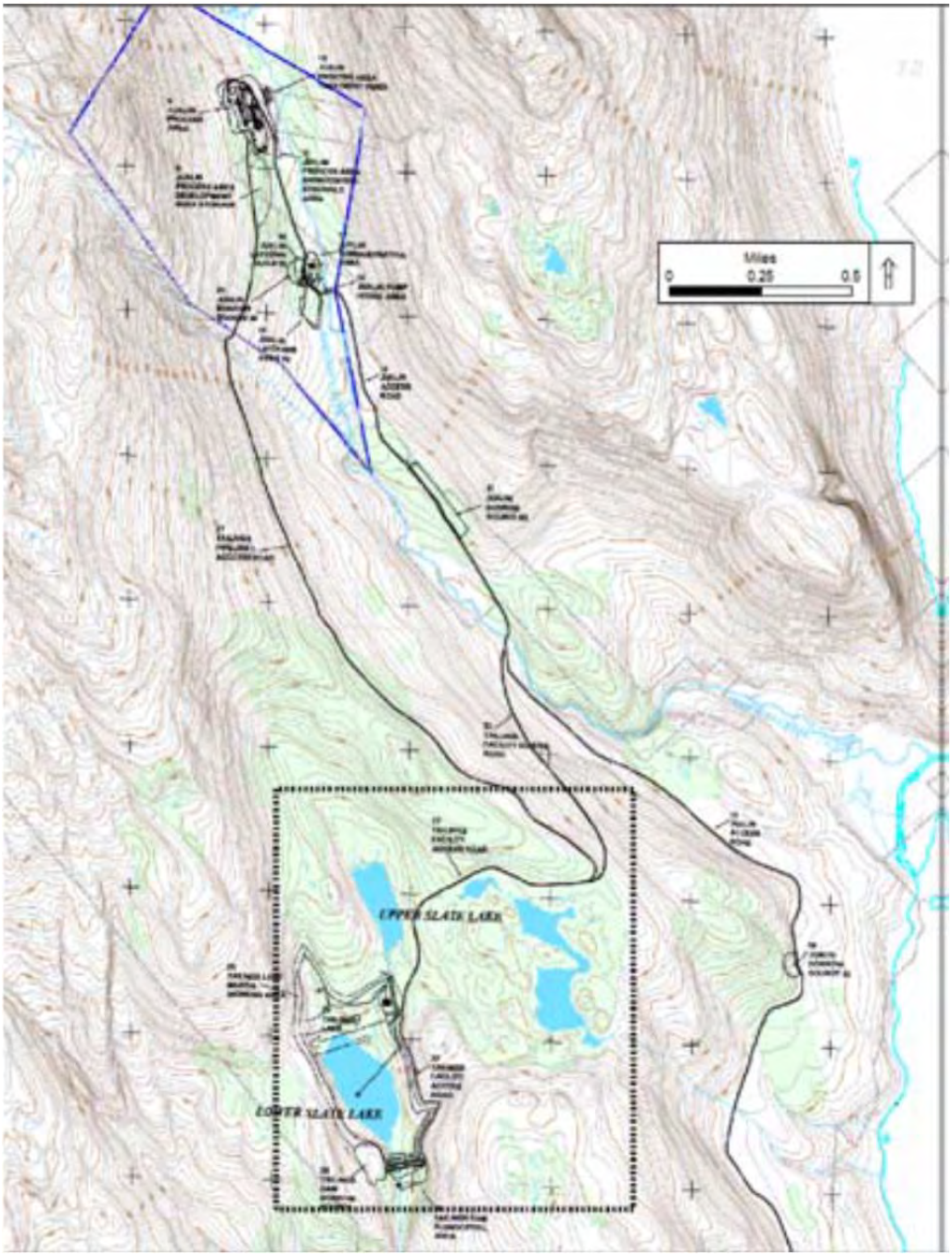

Figure 1: Slate Lakes Basin in relation to access roads and tailings facility. The access road to the tailings facility was constructed in 2006. Stage 1 tailings dam was constructed between August 2009 and August 2010 & stage 2 was constructed in 2012. The tailings facility was actively in use during the 2013 monitoring season.

1.1 Wildlife Monitoring Objectives

The objectives of the Kensington Project Wildlife Monitoring Plan are to:

- Supplement the regional resource knowledge base with site-specific data.
- Gather new information on specific wildlife habitats and species that could be affected by increased activity at the project site with specific attention to sensitive species.
- Identify concentrations of wildlife near specific resources (e.g., stream mouth marshes, anadromous streams, lakes, wetlands, bird nesting/feeding areas, large mammal crossing areas, etc.).
- Conduct wildlife observations along an established route surrounding the Slate Lakes basin on a frequent basis from spring through fall and intermittently through the remainder of the year.
- Collect data and other information that can be used to shape the subsequent year's studies and long-term monitoring.

Figure 2: The Slate Lakes Basin in 2005, prior to construction of the access road and the Lower Slate Lake TTF.

2.0 Survey Area

The wildlife monitoring survey area lies within the confines of the Slate Lake basin, an area of approximately two square kilometers, ranging in elevation from 200 meters at the mouth of Lower Slate Lake to 300 meters on the ridge to the west of Lower Slate Lake (Figure 1). Water bodies within the basin include Lower and Upper Slate Lakes to the west and the Spectacle Lakes complex to the east. Both Lower and Upper Slate Lake have steep western slopes, but much of the remaining area around Upper Slate Lake is flat with a mild slope to the east. The area around Spectacle Lake is also fairly flat. There is drainage from the southeast corner of Spectacle Lake into Berners Bay, while Fat Rat Lake drains into Upper Slate Lake (Figure 2). Upper Slate Lake drains to Lower Slate Lake via Mid-Lake Slate Creek and Lower Slate Lake drains to East Fork Slate Creek.

Prior to construction, terrestrial vegetation types around Upper and Lower Slate Lakes were fairly similar and included mixed spruce and hemlock forest to the west of both lakes and to the southeast of Lower Slate Lake. The north and east shores of both lakes were characterized by wetlands containing sedge meadow and scrub muskeg. The periphery timber of Lower Slate Lake was clear-cut by September 2005 and the TTF access road along the north of Spectacle Lakes was constructed by August 2006. The immediate vicinity of Upper Slate Lake has not been impacted by the project. The vegetation around the Spectacle Lake complex included sphagnum bogs and sedge fens with brushy, scrub forest in elevated areas. All of the lakes contained various species of aquatic vegetation, though not in high volume (Living System Designs 2005). Spectacle Lake contained the greatest concentration of aquatic vegetation, mainly in three sloughs and in Fat Rat Lake.

3.0 Methods

Kate Savage, who conducted wildlife monitoring in 2006, 2007, and 2010 established the transects that were used in all surveys. Ms. Savage relabeled these transects during the 2010 field season. These same transects were used in 2013, and were restaked and remarked as needed during the first survey of the season. There were 20 transects around the basin. Each was 50 meters long and ran in a north-south direction (Appendix A). The transects provided a systematic method for recording wildlife sign throughout the year. The north and south ends of each transect were marked with long stakes with survey flagging and GPS coordinates. GPS coordinates for each transect are located in Appendix B. Note that there is a 21st transect labeled on the map (appendix A site map), but due to rising water of the tailings lake, this transect became inaccessible in October 2011. Note further that the map indicates where motion sensor cameras were located in the 2013 monitoring season.

Field technicians visited each transect three times a month during the 2013 season. The following methodology was followed during each survey.

Coeur Alaska wildlife technicians located the north stake of each transect and strung a 50-meter measuring tape to reach the south stake. Trained field technicians then walked the length of the tape examining the ground within one meter either side of it. Signs such as tracks, scat, or digging were recorded along with their position along the tape to the nearest 0.1 meter and whether they lay on the east or west side of the transect. In this way, the precise location of wildlife sign was recorded so that fresh wildlife sign could be more easily separated from older, previously recorded sign. Scans with binoculars were also made from established locations to detect the presence of wildlife from afar. This method was most effective for observing waterfowl on the lakes. Lower Slate Lake was easily visible from almost any aspect on the TTF road. Upper Slate Lake scans for waterfowl were made from both the southern meadow and the northeastern muskeg. Viewing locations were optimum in the Spectacle Lakes area from the western edge of Lower Spectacle Lake, the southern tip of lower Spectacle Lake, which also afforded a good view of the adjacent southern slough, and the northern tip of upper Spectacle Lake.

Trained technicians collected data on wildlife sign along transects to ensure that observations and data collection were as standardized and unbiased as possible. Other information collected included weather conditions, visibility and any human activity in the area. Tracks and other sign were identified using field guides including Elbroch (2003), Murie and Elbroch (2005), National Geographic Society (1987). Species of special interest included herons, waterfowl such as Vancouver Canada Geese, and raptors such as Bald Eagles and Northern Goshawks. No special surveys to detect the presence of goshawks using standard broadcast methods were conducted in 2013 as part of this monitoring. Surveys utilizing standard broadcast methods for goshawks were conducted as part of the surface exploration program in 2013.

Figure 3: Spectacle Lake basin with access road to the Tailings Facility.

4.0 Survey Results

Field technicians determined the presence of wildlife within the Slate Lakes basin through actual sightings and identification of signs (tracks, digs and scat). Data collected during surveys included direct observations of wildlife species with photographs when possible, the time of day, location, and behavior.

Wildlife signs recorded included perennial sign such as well used game trails, dens or middens, scratching posts and stripped bark as well as ephemeral sign such as tracks, scat, browsing or digs. A complete photo log of all monitoring photos during the 2013 Season is located in Appendix D. Tables 1 through Table 4 summarize wildlife sign by the main species present in the Slate Lakes Basin (bear, moose, goose).

4.1 Mammals

Indications of bear activity included tracks, scats and "digs", which were most prevalent from August to September (Table 2). The greatest amount of bear sign was Noted at transects T12, T6 and T17. There were fewer indications of bear activity at transects closer to Upper and Lower Slate Lakes. Bear activity appears in high concentrations at those transects located adjacent to the TTF Access Road and around Spectacle Lake. It is possible that bears frequently use this corridor for travel. A black bear was observed feeding between transect T9 and T10 during a survey conducted on September 30th. There were several other sightings of black bear around the Spectacle Lake basin between late September and late October 2013. It can be difficult to recognize the same animal and mine personnel are frequently unable to identify specific, identifying features of an animal, but size and coloring helped to identify what was thought to be no less than 3 different bears in the Spectacle Lake basin.

Moose indices included tracks, scat, browse, and bedding sites were present in all transects other than T17 & T18. The greatest concentrations of moose sign were seen along transects near the southwest shore of Spectacle Lake at transects T5, T6, and T7, and near Upper Slate Lake at transect T20. Moose sign data is shown in Table 3. The concentrations of moose at these transects is consistent with the data obtained from 2010 to 2012. The primary areas utilized by the moose remain largely unchanged from previous years. Moose tracks can form deep depressions in soft, wet ground that persist for months to years. A single moose can also leave a large number of signs by simply walking parallel with a transect. These factors were taken into consideration when making any conclusions about levels of activity over time.

4.2 Avian Species

The avian species identified through direct sightings or indirectly through songs or calls included both resident and migratory wading birds, non-passerine land birds, passerines and species of special interest, which include waterfowl, raptors and herons. Waterfowl were noted only on Spectacle Lake and Fat Rat Lake.

Fewer signs of Canada geese were observed in the 2013 season compared to previous years. Most geese sign (scat and tracks) were observed on transect T4, T5 and T6 (Table 4). Blue-winged teal were sighted on Spectacle Lake at various times throughout the season as well as Red-Throated Loons, Lesser Scaup, Ring-Necked Ducks, Mallards, and Goldeneye. Ducks appear to make some use of Spectacle Lakes continually during summer and fall months. A great abundance of Lesser Yellowlegs were noted in the Slate Lakes Basin in 2013. Multiple Red-Tailed Hawks were observed around the survey area between June and August. Belted Kingfishers were seen several times throughout the year. Bald Eagles were sighted soaring over the Slate Lakes Basin from June through September and an increased presence was noted during the Pink Salmon run. Other bird species observed during 2013 included Dark-Eyed Juncos, Stellers Jays, American Robins, Varied Thrushes, Hermit Thrushes, Yellow-Rumped Warbler, Chestnut-Backed Chickadees, Dippers, the Common Raven and Savannah Sparrows. A complete avian species list from all monitoring years is located in Appendix E.

Table 1: Number of wildlife signs on each transect (all species)

Transect	8/14/2013	8/21/2013	8/29/2013	9/11/2013	9/20/2013	9/30/2013	10/15/2013	10/22/2013	10/31/2013	TOTAL
T1	1	6	1	1	1	0	0	0	0	10
T2	3	3	2	2	1	0	2	1	1	15
T3	1	0	2	0	2	1	0	0	4	10
T4	1	2	1	1	1	2	1	1	1	11
T5	4	9	5	2	5	2	3	0	4	34
T6	5	10	5	8	5	4	5	4	6	52
T7	6	4	2	2	2	1	0	0	2	19
T8	0	2	0	0	0	2	1	0	1	6
T9	1	6	1	1	3	0	0	2	1	15
T10	3	5	3	3	3	1	3	3	4	28
T11	3	6	4	4	0	1	1	1	4	24
T12	8	7	3	5	11	6	3	4	5	52
T13	4	1	0	0	0	1	0	0	2	8
T14	3	4	3	2	0	1	5	0	0	16
T15	0	1	1	0	1	0	1	2	3	9
T16	4	4	1	3	3	2	0	1	0	18
T17	4	6	7	2	2	3	1	2	4	31
T18	0	1	3	2	1	0	1	0	0	8
T19	1	1	1	3	0	0	0	0	1	7
T20	1	5	4	1	1	0	1	4	2	19
TOTAL	53	83	49	42	42	27	28	25	45	392

Table 2: Number of bear signs at each transect

Transect	8/14/2013	8/21/2013	8/29/2013	9/11/2013	9/20/2013	9/30/2013	10/15/2013	10/22/2013	10/31/2013	TOTAL
T1	0	6	0	0	1	0	0	0	0	7
T2	2	3	2	2	1	0	2	0	0	12
T3	0	0	1	0	2	0	0	0	2	5
T4	0	0	0	0	1	0	0	0	1	2
T5	0	2	1	0	3	0	1	0	3	10
T6	3	7	3	7	2	2	3	2	5	34
T7	0	0	0	0	0	0	0	0	1	1
T8	0	1	0	0	0	1	0	0	0	2
T9	1	3	0	1	2	0	0	1	1	9
T10	1	3	3	3	3	1	3	3	4	24
T11	1	5	2	4	0	1	1	1	4	19
T12	6	6	2	4	11	5	3	3	4	44
T13	4	1	0	0	0	1	0	0	1	7
T14	0	0	1	0	0	0	0	0	0	1
T15	0	1	0	0	1	0	1	0	1	4
T16	4	2	1	3	3	1	0	0	0	14
T17	3	5	7	2	2	3	1	2	4	29
T18	0	1	3	2	1	0	1	0	0	8
T19	0	0	1	3	0	0	0	0	1	5
T20	0	4	2	0	0	0	0	0	0	6
TOTAL	25	50	29	31	33	15	16	12	32	243

Table 3: Number of moose signs at each transect

Transect	8/14/2013	8/21/2013	8/29/2013	9/11/2013	9/20/2013	9/30/2013	10/15/2013	10/22/2013	10/31/2013	TOTAL
T1	1	0	1	1	0	0	0	0	0	3
T2	1	0	0	0	0	0	0	1	1	3
T3	1	0	1	0	0	1	0	0	2	5
T4	1	1	1	1	0	2	1	1	0	8
T5	4	5	3	2	2	2	2	0	1	21
T6	1	2	1	1	2	2	2	2	1	14
T7	6	4	2	2	2	1	0	0	1	18
T8	0	1	0	0	0	1	1	0	1	4
T9	0	2	1	0	1	0	0	1	0	5
T10	1	0	0	0	0	0	0	0	0	1
T11	1	1	1	0	0	0	0	0	0	3
T12	2	0	1	1	0	1	0	1	1	7
T13	0	0	0	0	0	0	0	0	1	1
T14	1	1	2	2	0	1	2	0	0	9
T15	0	0	1	0	0	0	0	1	2	4
T16	0	2	0	0	0	1	0	1	0	4
T17	0	0	0	0	0	0	0	0	0	0
T18	0	0	0	0	0	0	0	0	0	0
T19	1	1	0	0	0	0	0	0	0	2
T20	1	1	2	1	1	0	1	4	2	13
TOTAL	22	21	17	11	8	12	9	12	13	125

Table 4: Number of goose signs at each transect

Transect	8/14/2013	8/21/2013	8/29/2013	9/11/2013	9/20/2013	9/30/2013	10/15/2013	10/22/2013	10/31/2013	TOTAL
T1	0	0	0	0	0	0	0	0	0	0
T2	0	0	0	0	0	0	0	0	0	0
T3	0	0	0	0	0	0	0	0	0	0
T4	0	1	0	0	0	0	3	0	0	4
T5	0	2	1	0	0	0	0	0	0	3
T6	1	1	1	0	1	0	0	0	0	4
T7	0	0	0	0	0	0	0	0	0	0
T8	0	0	0	0	0	0	0	0	0	0
T9	0	0	0	0	0	0	0	0	0	0
T10	1	0	0	0	0	0	0	0	0	1
T11	1	0	1	0	0	0	0	0	0	2
T12	0	0	0	0	0	0	0	0	0	0
T13	0	0	0	0	0	0	0	0	0	0
T14	1	2	0	0	0	0	0	0	0	3
T15	0	0	0	0	0	0	0	0	0	0
T16	0	0	0	0	0	0	0	0	0	0
T17	0	1	0	0	0	0	0	0	0	1
T18	0	0	0	0	0	0	0	0	0	0
T19	0	0	0	0	0	0	0	0	0	0
T20	0	0	0	0	0	0	0	0	0	0
TOTAL	4	7	3	0	1	0	3	0	0	18

4.3 Other Sightings

Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) tracks were observed on transects T12, T14 and T15 in the 2013 season. Alexander Archipelago wolf (*Canis lupus ligoni*) tracks were observed on transects T9, T10 and T17. A wood frog (*Rana luteiventris*) had been observed in 2010. Prior to that, no wood frogs had been observed since 2004. Both western toads *(Bufo boreas*) and wood frogs were sighted throughout the 2013 season on numerous occasions in muskegs and small ponds. Based on numerous wood frog sightings in 2012 and 2013, it appears there has been an increase in population within the basin. Small vole-like trails, perhaps made by the deer mouse (*Peromyscus maniculatus*), were found during summer months of 2013. Porcupines were occasionally spotted along roadsides by mine employees, but tend to avoid travel though open areas where most monitoring transects were located. It is likely that smaller mammals are just as active (if not more so) in summer, but their sign (tracks) showed up more in snow. Current monitoring practices were not conducive to obtaining representative data on small mammal and rodent populations within the Slate Lakes Basin.

4.4 Human Activity

The access road to the TTF at times has considerable traffic use. Heavy equipment uses the road intermittently. Noise from traffic along the access road was most noticeable at T1, T13, T14, T12,

T17, and T18. Vehicle traffic was considerably lighter on the TTF access road than it had been in the 2012 monitoring season as no additional dam construction occurred during the 2013 season.

5.0 Discussion

The transects were all located in open bog and fen areas around the lakes as opposed to thick brush for ease of finding wildlife sign. These flat, open areas tended to be soft and wet and the tracks of larger mammals persisted for several months. Recording tracks with a measuring tape to the nearest 0.1 meter enabled fresh sign to be distinguished from sign recorded previously. Smaller, lighter mammals do not leave visible tracks in firmer ground, but their tracks were often visible in snow. This led to some bias with apparent abundance of large mammals relative to smaller animals, but evaluating signs over time gave a better indication of all mammal activity. Bear sightings seemed to increase around the end of August and beginning of September, which is consistent with previous years. Bears typically moved from stream mouths where they fed on salmon to upland areas to feed on roots and berries before they hibernate for the winter. This would explain increased activity. Moose signs seemed to reach a peak in early August before gradually decreasing through October. This may be because during the fall months, moose were likely following females, avoiding previously used trails or feeding areas. The spatial range of bears and moose overlapped considerably, although transects T12 and T17 (eastern) had more bear sign while transects T5, T6 and T7 (western) had more moose sign. Most of the bear sign found was in the form of scat, tracks and digs. Both bear and moose sightings were concentrated on transects in close proximity to the shore of Spectacle Lake. Bear signs were most highly concentrated on the same transects in 2013 as was observed in 2012. Moose signs observed in 2013 were consistent with 2012 data on transects T5 and T6 but less sign was observed northeast of Upper Slate Lake in 2013. As was found in 2007 (Savage 2007), the presence of bear digs and scat indicated bears forage in the area, but there was little in the way of moose browse sign or scat suggesting that moose were transiting through the area rather than actively browsing there.

One of the most significant signs of wildlife use in the basin are those from molting geese, particularly in areas close to floating mats of vegetation near lake shores. These may be preferred for roosting and nesting, as they would not support the weight of large predators. Use of the Spectacle basin as a refuge for Canada geese was previously documented in 2000 (ABR 2000), 2004 (USFS 2004), in 2005 (Living System Designs 2005), 2006, and 2007 (Savage 2007) with no surveys conducted in 2008. The lakes typically freeze over from mid-November until mid-May and geese were present from the end of May or early June until mid-October 2013. The no-fly zone over the Spectacle Lake basin, instigated through Coastal Helicopters in 2007 to minimize disturbance to geese, continued through 2013.

6.0 Conclusions

In total, signs of bear, moose and geese within the Slate Lake Basin were quite higher than 2012 observations (Table 1). This may be due to decreased vehicle traffic on the TTF access road. To note, Coeur Alaska personnel conducted monitoring during the 2013 season. Snowfall for the winter of 2012-13 was quite a bit higher than the previous two years. This snow persisted well into the spring and early summer months around both Spectacle and Upper Slate Lake.

A primary summer use of the area was as a refuge for Canada Geese. There were approximately 13-18 Canada Geese on site during 2013, which is similar in numbers to the 2012 season (13 to 15). In 2010, 19 geese were observed on Spectacle Lake and 29 geese in 2009, but it is not possible to determine the reason for fluctuations in goose numbers in the area.

Wildlife populations within the Slate Lakes Basin generally appear healthy, and abundant. Comparisons with baseline studies conducted in 2004 and 2005, mining operations have had little impact on the abundance or habits of terrestrial wildlife in the area.

7.0 References

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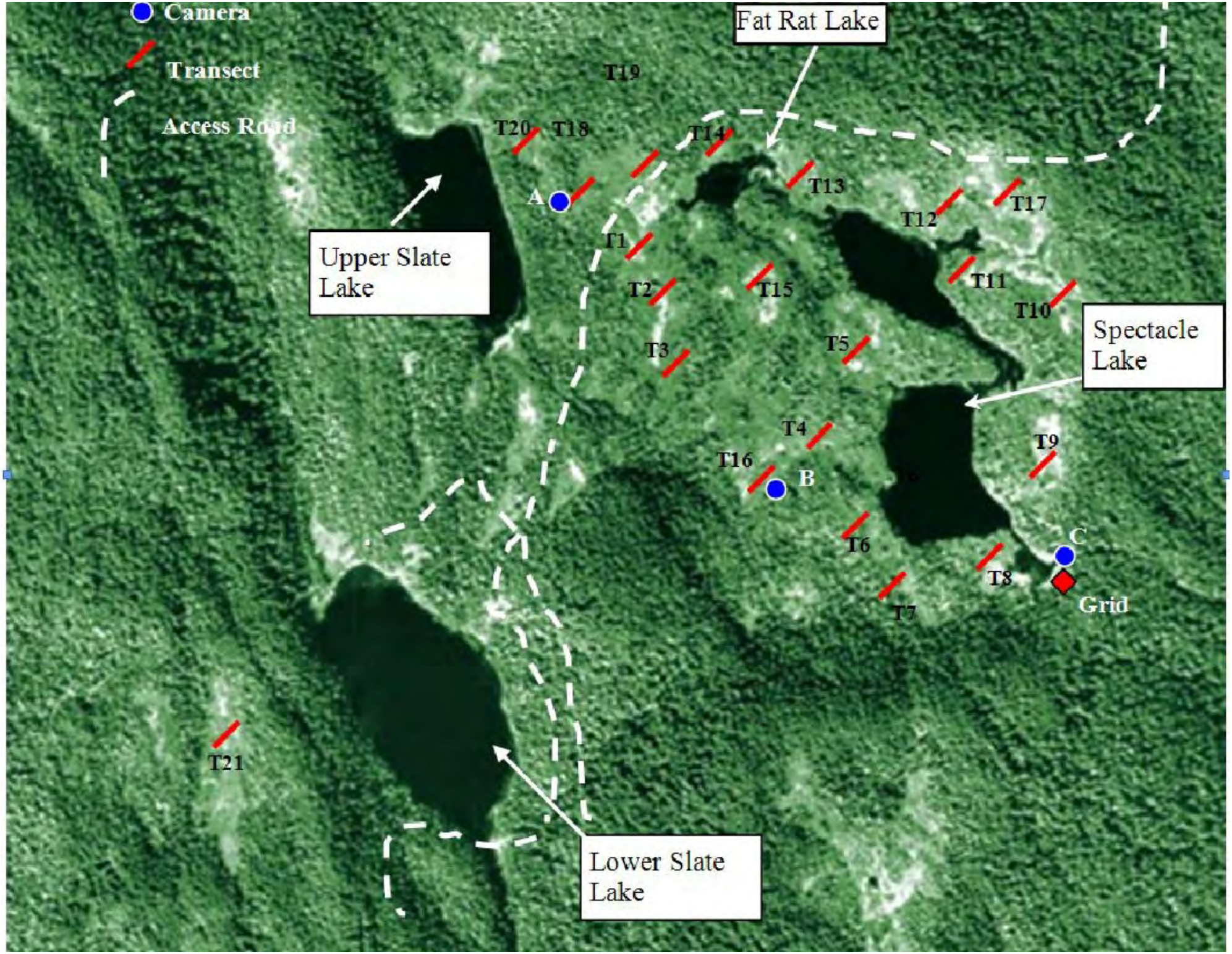
APPENDIX A

SITE MAP


Camera
Transect
Access Road
Fat Rat Lake
T19
T20
T18
T14
T13
T17
T12
A
T1
T2
T15
T11
T10
T3
T5
Upper Slate Lake
Spectacle Lake
T4
T9
T16
B
T6
C
T8
Grid
T7
T21
Lower Slate Lake

APPENDIX B
TRANSECT GPS COORDINATES

Transect GPS Coordinates
(All North End Coordinates)

T1N 58.81712N/135.03537W
T2N 58.81631N/135.03036W
T3N 58.81509N/135.03416W
T4N 58.81410N/135.03032W
T5N 58.81537N/135.02911W
T6N 58.81288N/135.02849W
T7N 58.81182N/135.02705W
T8N 58.81250N/135.02471W
T9N 58.81377N/135.02370W
T10N 58.81657N/135.02342W
T11N 58.81678N/135.02596W
T12N 58.81765N/135.02682W
T13N 58.81788N/135.03061W
T14N 58.81834N/135.03325W
T15N 58.81660N/135.03181W
T16N 58.81410N/135.03157W
T17N 58.81782N/135.02492W
T18N 58.81820N/135.03523W
T19N 58.81812N/135.03630W
T20N 58.81844N/135.03839W
T21N 58.80974N/135.04633W

APPENDIX C

2013 DATA SHEETS

Transect Data

Transect:

Personnel: R Bailey

Date: 8-14-13

Weather: P. Cloudy 70°

Time: 10:00 - 13:00

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T-14						
@ 48 m	L	Moose Track				
@ 30 m	L	Goose Scat				
T-1						
@ 30 m	L, C, R	Track	Moose			
T-2						
@ 35 m	L	Track	Moose			
@ 2 m	L	Dig, Scat	Bear			
T-3						
@ 50 m	R	Track	Moose			
T-15						
@ 35 m	C	Track	Deer			
T-5						
@ 40 m	C, R	Track	Moose			
@ 44 m	C, R	"	"			
@ 48 m	C, R	"	"			
@ 49 m	C, R	"	"			
T-4						
@ 24 m	C	Track	Moose			
T-16						
@ 7 m	L	Dig x2	Bear			
@ 2 m	C	Scat	Bear			
@ 47 m	R	Dig	Bear			

Transect Data

Transect: Date: 8-14-13 Time: 10:00 - 13:00

Personnel: R. Bates Weather: P. Cloudy 70°

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T-6						
@ 11m	C	Track	Moose			
@ 20m	C	Scat	Goose			
@ 30m	L	Dig	Bear			
@ 32m	C	Dig	"			
@ 34m	L	Dig	"			
T-7						
@ 13m	L,C,R	Track	Moose			
@ 19m	"	"	"			
@ 25m	"	"	"			
@ 26m	"	"	"			
@ 27m	"	"	"			
@ 32m	"	"	"			
T-8						
T-9						
@ 10m	L	Dig	Bear			
T-10						
@ 30	C	Tracks	Goose			
@ 30-40	C,R	Tracks	Bear			
@ 45	L,C,R	Track	Moose			
T-11						
@ 14m		Scat	Goose			
@ 18m	L,C,R	Tracks	Moose			
@ 22m	L	Dig	Bear			

Transect Data

Transect: T-18 Date: 8-14-13 Time: 10:00 - 13:00

Personnel: R. Pattee Weather: P. Cloudy 70°

Location	L/R	Sign Type [Track, Scat, etc]	Species	Photo (Y/N)	Sample (Y/N)	Notes
T-18	--	--	--	--	--	--
T-18e25m	R	Track	Moose	--	--	--
T-20e15m	L,C,R	Tracks	Moose	--	--	--
T-13 1m	L	D	B			
10m	L	D	B			
15m	L	T	Wolf			
40m	C	D	B			
T-12 8m	L	D	B			
9m	L	D	B			
10m	L	D	B			
15m	L	D	B			
40m	L	T	M			
50m	C	D	B			
60m	R	T	M			
T13 23m	L	D	B			
28m	L	D	B			
45m	L	D	B			
50m	L	D	B			

Transect Data

Transect:

Personnel: PB/KA

Date: 8/21/2013

Weather: OVERCAST MOD-S WIND

Time: 10:30-12:30

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T16 58m	R	BEAR DIG	BEAR (B)			
T19 25m	R	MOOSE T	MOUSE (M)			
T21 5m	L	D	B			
20m	R	D	B			
25m	R	D	B			
30m	L	D	B			
41m	L/R	T	M			
T14 22m	C/R	S GOOSE (G)	G			
35m	C	G	G			
43m	C/R	T	M			
49m	L	T DEER (D)	~~M~~ D			
~~T~~T1 5m	R	D	B			
20m	L	D	B			
26m	R	S	B			
31m	L	D	B			
32m	L	D	B			
38m	L	D	B			
~~T~~T2 2m	L	D/S	B			
48m	R	D	B			
T3 — NOTHING						
T5 - 43	L	D	B			
T6 - 20m	L	T	M			
23m	L	D	B			
29m	R	T	M			
30m	L	S	G			
40m	L/R	D	B			
41m	L	T	M			
43m	R/C	T	M			
45m	R	S	G			
46m	L	T	M			

Transect Data

Transect:

Personnel: RB/KA

Date: 8/21/2013

Weather: OVERCAST MOD S-WIND

Time: 10:30 - 12:30

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T4 16m	L	S	G			
21m	L/R	T	M			
T16 1m	C	S	B			
5m	L	D	B			
43m	L	T	M			
45m	R	T	M			
T6 3m	R	D	B			
8m	R	D	B			
14m	L	S	G			
15m	L	T/D	M/B			
19m	R	T	M			
27m	R	D	B			
32m	L	D	B			
33m	R	D	B			
39m	R	D	B			
T7 13m	L/R	T	M			
16m	L/R	T	M			
24m	L/R	T	M			
29m	C/R	T	M			
T8 48m	L/R	T	M			
30m	R	T	B			
T9 50m	R	D	B			
48m	L	T	M			
42m	L	D	B			
24m	L/R	T	M			
22m	R	T	B			
10m	L	T (WOLF)	W			
T10 30m	R	D	B			
29m	R	D	B			

Transect Data

Transect:

Personnel: RB/KA

Date: 8/21/2013

Weather: OVERCAST MOD-S WIND

Time: 10:30 - 12:30

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T10	10 m	L/R	T	W			
	12 m	L/R	T	W			
	1m	R	D	B			
T11	47m	L	D	B			
	46m	R	D	B			
	43m	L	T	M			
	23m	L	D	B			
	9m	L	D	B			
	2m	R	D	B			
T17	4m	L	D	B			
	3m	L	D	B			
	35m	L	S	G			
	40m	R	D	B			
	43m	R	D	B			
	45m	R	D	B			
T12	1m	R	D	B			
	10m	L	D	B			
	12m	L	D	B			
	15m	L/R	D	B			
	25m	L	D	B			
	29m	L	D	B			
	44m	R	T	Deer			
T13	5m	R	D	B			

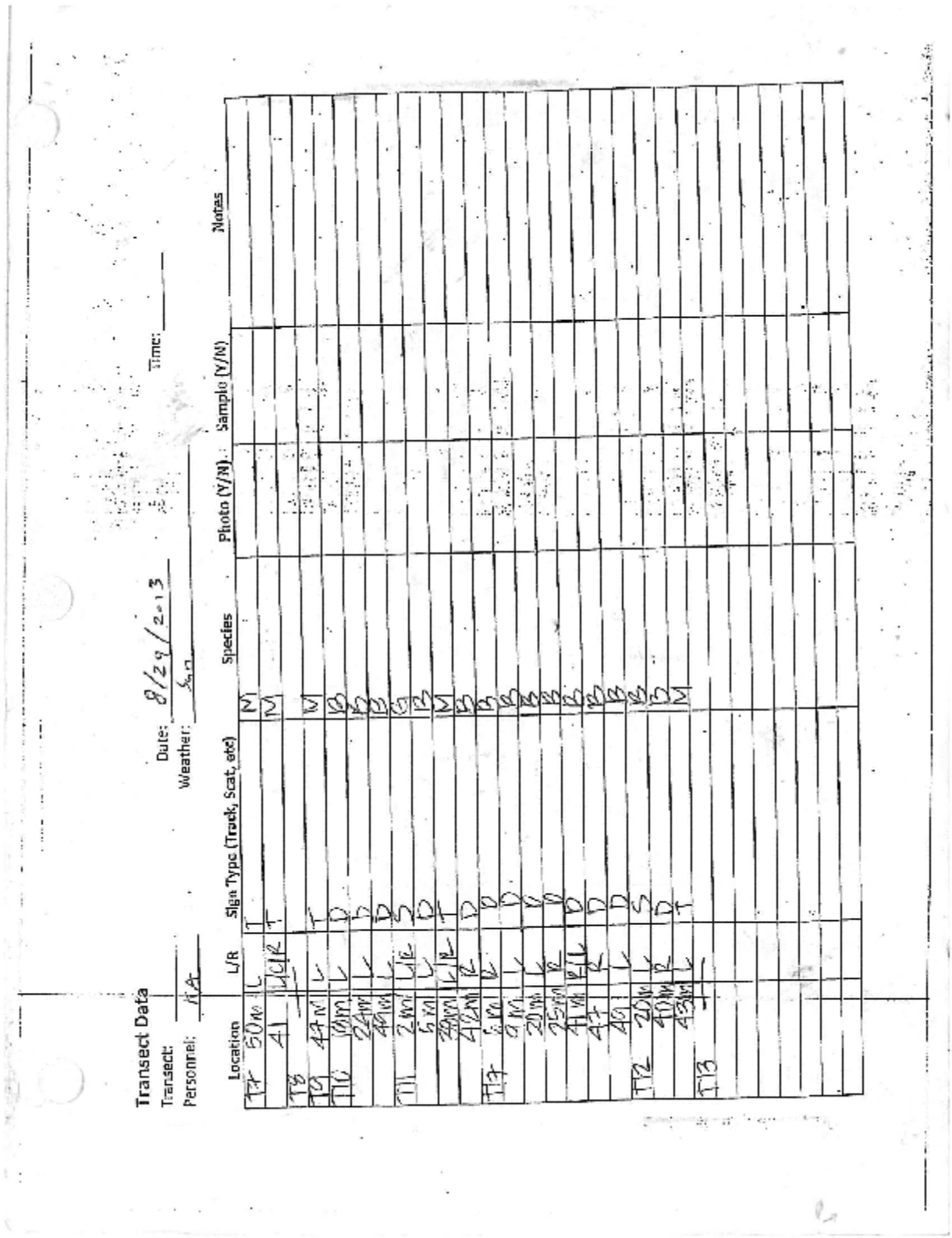
Transect Data

Transect:
Personnel: KA

Date: 8/29/2013
Weather: SUNNY

Time: ______

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18 13m	L	D	B			
T19 30m	C/R	D	B			
50m	L	S	B			
T17 23m	R	D	B			
T20 10m	L/R	D	B			
15m	L/C/R	T	M			
35m	L/C/R	T	M			
40m	L	T	B			
T14 18m	R	T	M			
20m	L	T	B			
46m	L/C	T	M			
T1 30m	C/R	T	M			
T2 2m	L	D	B			
19m	C	T	B			
T3 ~~3~~57m	R	T	M			
22m	L	D	B			
T15 17m	L	T	M			
T5 8m	L/C	S	G			
29m	R	T	M			
32m	L/C/R	T	M			
29m	L/C/R	T	B			
41m	C	T	M			
T~~?~~4 26m	L/C/R	T	M			
~~T7~~ T16 40m	R	D	B			
T6 11m	R	S	G			
15m	R	D	B			
18m	L/C/R	T	M			
19m	L	D	B			
20m	R	D	B			



Transect Data

Transect: _____ Date: 8/29/2013 Time: _____

Personnel: N/A Weather: Sun

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T7 60m	L	T	M			
A1	L/R	T	M			
T8						
T9 44m	L	T	M			
T10 10m	L	D	B			
24m	L	D	B			
40m	L	D	B			
T11 2m	L/R	S	B			
5m	L	D	B			
22m	L/R	T	M			
42m	L/R	D	B			
T12 5m	L/R	D	B			
9m	L	D	B			
20m	L	D	B			
25m	L/R	D	B			
41m	L/R	D	B			
43	L/R	D	B			
46	L	D	B			
T12 20m	L	S	B			
40m	L/R	D	B			
43m	L	T	M			
T13						

Transect Data

Transect:

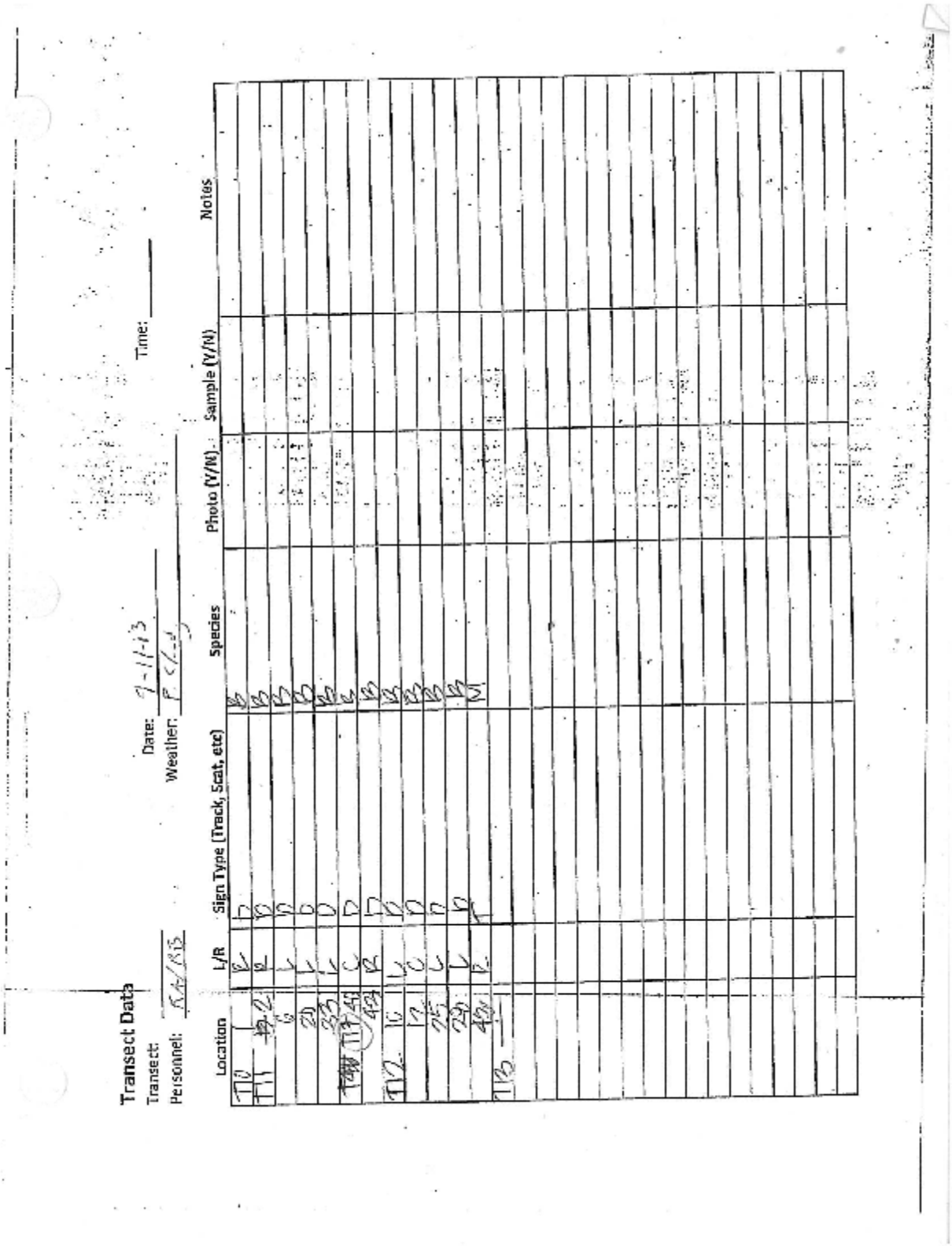
Personnel: PA/EB

Date: 9/11/2013

Weather: PARTLY CLOUDY

Time: 13:42

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T16	50 M	L/C/R	D / G	B			
T12							
	13 M	L	D	B			
	23 M	R	D / T	B			
~~T21~~	[illegible]						
T20	22	L/R	T	M			
T14	12	L/C/R	T	M			
	44	L/C	T	M			
T1	32	L/C/R	T	M			
T2	11 M	R	D	B			
	21 M	L	T	B			
T3	—						
T15	—						
T5	40	L/C/R	T	M			
	46	C	T	M			
T4	26	L/C/R	T	M			
T16	11	C	B	B			
	6	L	D X 2	B			
T6	19	L/C/R	T	M			
	30	L/R	D X 2	B			
	34	L	D	B			
	35	R	D	B			
	40	R	D X 3	B			
T7	18	L/C/R	T [illegible]	M			
	20	C	T	M			
T9	←						
~~T8~~ T9	16	L	D	B			
T10	20	R	D	B			
	26	R	D	B			



Transect Data

Transect: TV2 TV3

Personnel: KA/KB

Date: 9-11-13

Weather: P <

Time:

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
TV2	L	D	M			
TV3 #0.2	R	D	M			
15	L	D	M			
20	L	D	M			
33	L	D	M			
TV2 TV3 41	L	D	M			
49	R	D	M			
TV2 16	L	D	M			
17	L	D	M			
25	L	D	M			
29	L	D	M			
40	R	D	M			
TV3 1						

Transect Data

Transect:

Personnel: R.Asplund/S.Lummers

Date: 9/20/2013

Weather: Rainy

Time: 13:30 Start

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18	14m	C/R	D	B			
T19	—						
T20	26m	L	T	M			
T1	30m	L	D	B			
T14	—						
T2	2m	L	D	B			
T3	16m	L	D	B			
	47m	R	D	B			
T15	9m	C	D	B			
T5	15m	C/R	T	B			
	24m	R	D	B			
	30m	R	D	B			
	38m	L/C/R	T	M			
	39m	L/C/R	T	M			
T4	27m	R	D	B			
T16	7m	L	D	B			
	40m	R	D	B			
	42m	L	D	B			
T6	1m	C	S	B			
	16m	L/C/R	T	M			
	18m	L/C/R	T	M			
	30m	C/R	D	B			
	32m	R	D	B			
T7	19m	R	T	M			
	36m	L	T	M			
T8	—						
T9	1m	L	D	B			
	41m	L	T	M			
	44m	C	T	B			

Transect Data

Transect:

Personnel: K Heglund | S Lammers

Date: 9/20/2013 Cont.

Weather: rainy

Time: End @ 1433

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T10	19m	L	D	B			
	23m	R	D	B			
	25m	R	D	B			
T1	—						
T17	40m	R	D	B			
	45m	R	D	B			
T12	50m	L	D	B			
	40m	L	D x2	B			
	35m	L	D	B			
*	35m	R	D & T	B			
	33m	R	D x2	B			
	30m	R	T	B			
	25m	L	D	B			
	20m	L	D	B			
T13	—			~~B~~			

Transect Data

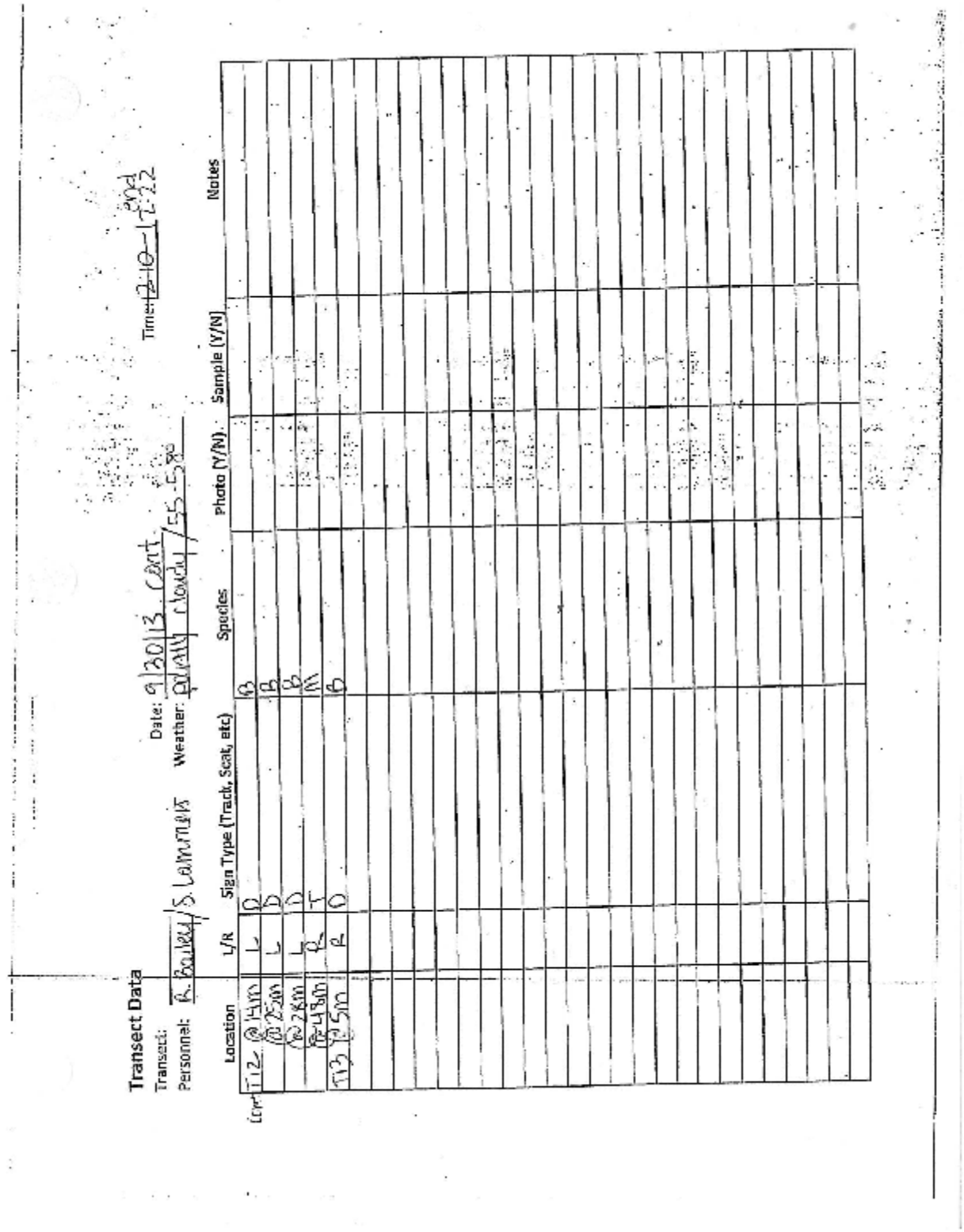
Transect:
Personnel: R. Bailey / S. Lummers

Date: 9/30/13
Weather: partly cloudy / 58°

Time: Start @ 10:48

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
~~T18 @ m~~						
~~T19 m~~						
~~T20~~						
T1 @ 5 m	[illegible]	[illegible]	[illegible]			
T14 @ 44 m	LCR	T	M			
~~T2~~						
T3 @ 23m	L	T	M			
~~T15~~						
T5 @ 38 m	LCR	T	M			
@ 46 m	LC	T	M			
T4 @ 26 m	CR	T	M			
@ 35m	LC	T	M			
T16 @ 8m	L	D	B			
47m	L	T	M			
T6 @ 19 m	LCR	T	M			
@ 29m	R	D	B			
@ 32m	CR	T	M			
@ 35m	R	D	B			
T7 @ 29m	L	T	M			
T8 @ 48m	L	T	M			
@ 2m	R	D	B			
T9						
T10 BEAR			B			
T11 ……			B			
T17 @ 40m	L	D	B			
@ 41m	L	D	B			
@ 35m	C	D	B			
T12 @ 7m	L	D	B			
@ 9m	L	D	B			

Between T9 & T10 Black Bear
T11



Transect Data

Transect: T12

Personnel: R. Bailey / S. Lamoureux

Date: 9/30/13 Cont.

Weather: Partly cloudy / 55-58°

Time: 2-10 - 12:22 pm

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T12 @ 1+44m	L	B	B			
@ 2+20m	L	B	B			
@ 2+28m	L	B	B			
@ 4+48m	R	T	M			
T13 @ 5+50m	R	O	B			

Transect Data

Transect:

Personnel: SL/RB (B.Lammers, R Bailey)

Date: 10/15/2013

Weather: Overcast/42°F/ light rain & wind turning to partly cloudy

Time: Start @ 10:00

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18 @ 50	R	D	B			
T19 —	—	—	—			
T20 @ 22	R	T	M			
T1 —	—	—	—			
T14 @ 14	C	S	G			
@ 30	C	S	G			
@ 32	L	S	G			
@ 40	R	T	M			
@ 42	LCR	T	D M			
T2 @ 2	L	D	B			
@ 2	L	S	B			
T3 —	—	—	[illegible]			
T15 @ 45	L	D	B			
T5 @ 25	L	D	B			
@ 38	LCR	T	M			
@ 42	L	T	M			
T4 @ 25	LR	T	M			
T16 —	—	—	—			
T6 @ 18	LC	T	D M			
@ 19	L	T	M			
@ 30	R	D	B			
@ 33	C	D	B			
@ 38	R	D	B			
T7 —	—	—	—			
T8 @ 48	L	T	M			
T9 —	—	—	—			
T10 @ 26	R	D	B			
@ 25	R	D	B			
@ 1	R	D	B			

Transect Data (...Cont)

Transect:

Personnel: SL/RB (S. Lummeus) (R. Bailey)

Date: 10/5/2013

Weather: overcast / 42°F / light rain & wind changed to partly cloudy

Time: end 11:10

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T11 @ 28	R	D	B			
T17 @ 5	R	D	B			
T12 @ 8	L	D	B			
@ 12	R	D	B			
@ 25	L	D	B			
T13						

Transect Data

Transect:

Personnel: Lydia Bailey, Sierra Summers

Date: 10/22/2013

Weather: Sunny/Clear/Cold

Time: 13:20 start time

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T9 —						
T8 —						
T20 @0m	L/C/R	T	M			
@23	R	T	M			
@26	L/C/R	T	M			Major moose conga line
@35	L/C/R	T	M			
T1 —						
T4 —						
T2 @1	L	T	M			
T3 —						T5: Chestnut-backed
T15 @1	L	S	M			chickadees in tree end of T15
T5 —						T5: lots of old moose
T4 @25	L/C/R	T	M			tracks and bear digs
T16 @46	L/C/R	T	M			
T16 @18	L	T	M			
@22	L/C/R	T	M			
@32	~~L~~ C/R	D	B			
@38	~~L/C/R~~ R	D	B			
T7 —						
T8 —						
T9 @2	R	T	M			
@11	R	D	B			
T10 @22	L	D	B			
@25	L	D	B			
@50	L	D	B			
T17 @40	R	D	B			
@3	L	D	B			
T11 @24	R	D	B			

Transect Data ..cont

Transect: ______

Personnel: RB/SL R. Bailey S. Lammers

Date: 10/22/13

Weather: CLEAR, cold

Time: ______

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T12 @1	L	D	B			
25	L	D	B			
26	L	D	B			
49	R	T	M			
T13 -						

Transect Data

Transect:

Personnel: S. Lammers / K. Asplund

Date: 10/31/2013

Weather: 40° / overcast / breezy

Time: 16:00 END

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T9 @ 48m	L/R	D	B			
T10 @ 20m	L	D	B			
@ 24m	L	D	B			
@ 48m	L	D	B			
@ 50m	L	D	B			
T11 @ 9m	R	D	B			
@ 17m	L	D	B			
@ 24m	R	D	B			
@ 26m	R	D	B			
T17 @ 1m	L	D	B			
@ 9m	L	D	B			
@ 16m	L	D	B			
@ 1m	R	D	B			
T12 @ 60m	R	D	B			
@ 40m	R	D	B			
@ 28m	R	D	B			
@ 25m	R	D	B			
@ 2m	L	T	M			
T13 @ 20m	L	D	B			
@ 32m	L/R	T	M			

Transect Data

Transect:

Personnel: S. Lamrock | K. Asplund

Date: 10/31/2013

Weather: 40°F / overcast / breezy

Time: 13:40 start

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18 @ 50	C/R	old bear digs				
T19 @ 10	L	D	B			
T20 @ 30	L/C/R	T	M			
@ 27	C/R	T	M			
T1 —						
T14 —						
T2 @ 2	L	T	M			
T3 @ 5	L	T	M			
@ 10	R/L	T	M			
@ 15	R	D	B			
@ 20	L	D	B			
T15 @ 2	R	S	M			
@ 12	L	D	B			
@ 20	C	T	M			
T5 @ 25	L	D	B			
@ 25	R	D	B			
@ 32	L	D	B			
@ 40	L/C/R	T	M			
T16 —						
T4 @ 15	R	D	B			
T6 @ 9	R	D	B			
@ 17	L	D	B			
@ 18	L	D	B			
@ 19	L	D	B			
@ 19	L/C/R	T	M			
@ 30	R	D	B			
T7 @ 16	R	T	M			
@ 28	R	D	B			
T8 @ 15	C/R	T	M			

APPENDIX D

PHOTO LOG

Coeur Alaska Kensington Terrestrial Wildlife Monitoring: Photo Log

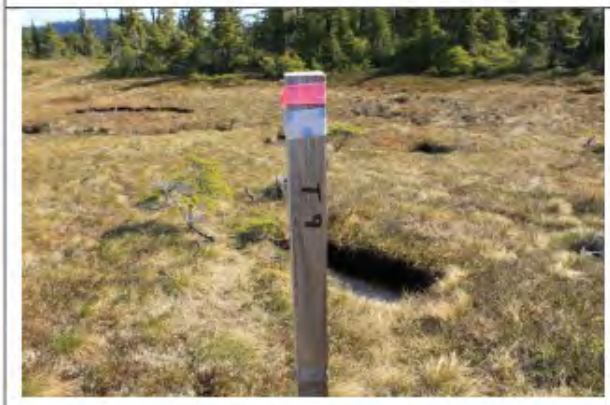
Transect

Looking towards the TTF Access Road.

Goose Print.

Spectacle Lake.

Transect Marker Stake.



Transect.

Bear scat.

Looking towards Spectacle Lake

Moose print.

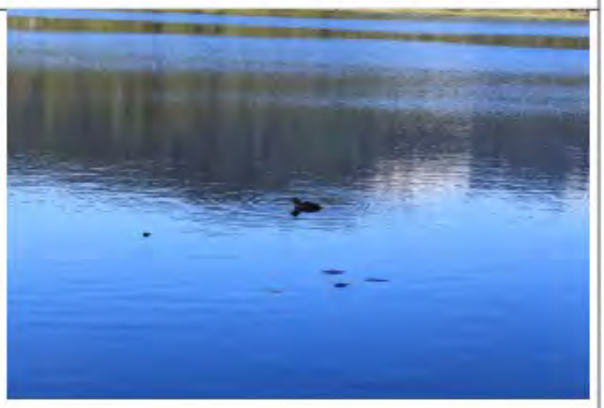
Looking towards Fat Rat Lake

Small toad.

Tailings Storage Facility.

Tailings Storage Facility

Goldeneye.



Upper Slate Lake.

APPENDIX E

AVIAN SPECIES LIST

Waterfowl

1. White-winged Scoter (*Melanitta fusca*)
2. Greater Scaup (*Aytha marila*)
3. Mallard (*Anas platyrhynchos*)
4. Canada Goose (*Branta canadensis*) **- C**
5. Ring-necked Duck (*Aythya collaris*)
6. Red-throated Loon (*Gavia stellata*)
7. Hooded Merganser (*Lophodytes cucullatus*)
8. Common Goldeneye (*Bucephala clangula*)
9. American Wigeon *(Anas Americana)*
10. Blue-winged Teal (*Anas discors)* - **S**

Common = multiple sightings throughout season

S = identified through sighting

C/S = identified through call or song

B = both sighted and heard

Raptors

1. Bald Eagle (*Haliaeetus leucocephalus*) **– Common, B**
2. Red-tailed Hawk (*Buteo jamaicensis*)
3. Sharp-shinned Hawk (*Accipiter striatus*)
4. Northern Pygmy Owl (*Glaucidium gnoma*) **– C/S**
5. Northern Harrier *(Circus cyaneus)* **–C/S**

Other

1. Belted Kingfisher (*Ceryle alcyon*) **– Common, B**
2. Steller's Jay (*Cyanocitta stelleri*) **– Common, B**
3. Common Raven (*Corvus corax*) **– Common, B**
4. Chestnut-backed Chickadee (*Poecile rufescens*) **– Common, B**
5. Dark-eyed Junco (*Junco hyemalis*) **– Common, B**
6. Winter Wren (*Troglodytes troglodytes*) **– Common C/S**
7. Savannah Sparrow (*Passerculus sandwichesis*) **- B**
8. Varied Thrush (*Ixoreus naevius*) **- B**
9. Pine Grosbeak (*Pinicola enucleator*) **- S**
10. Northwestern Crow (*Corvus caurinus*) **- B**
11. Red-breasted Sapsucker (*Sphyrapicus rubber*) **–Common, B**
12. Bohemian Waxwing (*Bombycilla garrulous*) **- B**
13. Least Sandpiper (*Calidris minutilla*) **– S**
14. Blue Grouse (*Dendragapus obscurus*)
15. Lesser Yellowlegs (*Tringa flavipes*) **- S**
16. Ruby-crowned Kinglet (*Regulus calendula*)
17. Wilson's Warbler (*Wilsonia canadensis*)
18. White-crowned Sparrow (*Zonotrichia albicollis*)
19. Rufous Hummingbird (*Selasphorus rufus*)
20. Tree Swallow (*Tachycineta bicolor*)
21. Orange-crowned Warbler (*Vermivora celata*)
22. Hermit Thrush (*Catharus guttatus*)
23. Cedar Waxwing (*Bombycilla cedrorum*)
24. Olive-sided Flycatcher (*Contopus borea*lis)
25. Solitary Sandpiper (*Tringa solitaria*)
27. Song Sparrow *(Melospiza melodia*)
28. Great Blue Heron *(Ardea herodias)*
29. Yellow-rumped Warbler (*Dendroidica coronata*) **- B**