COEUR

ALASKA

KENSINGTON GOLD MINE

2012 TERRESTRIAL WILDLIFE MONITORING REPORT OF THE SLATE LAKES BASIN KENSINGTON GOLD MINE

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1.0 Introduction

This report describes the 2012 wildlife monitoring season (July-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 Lakes basin 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 Blacktailed 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.

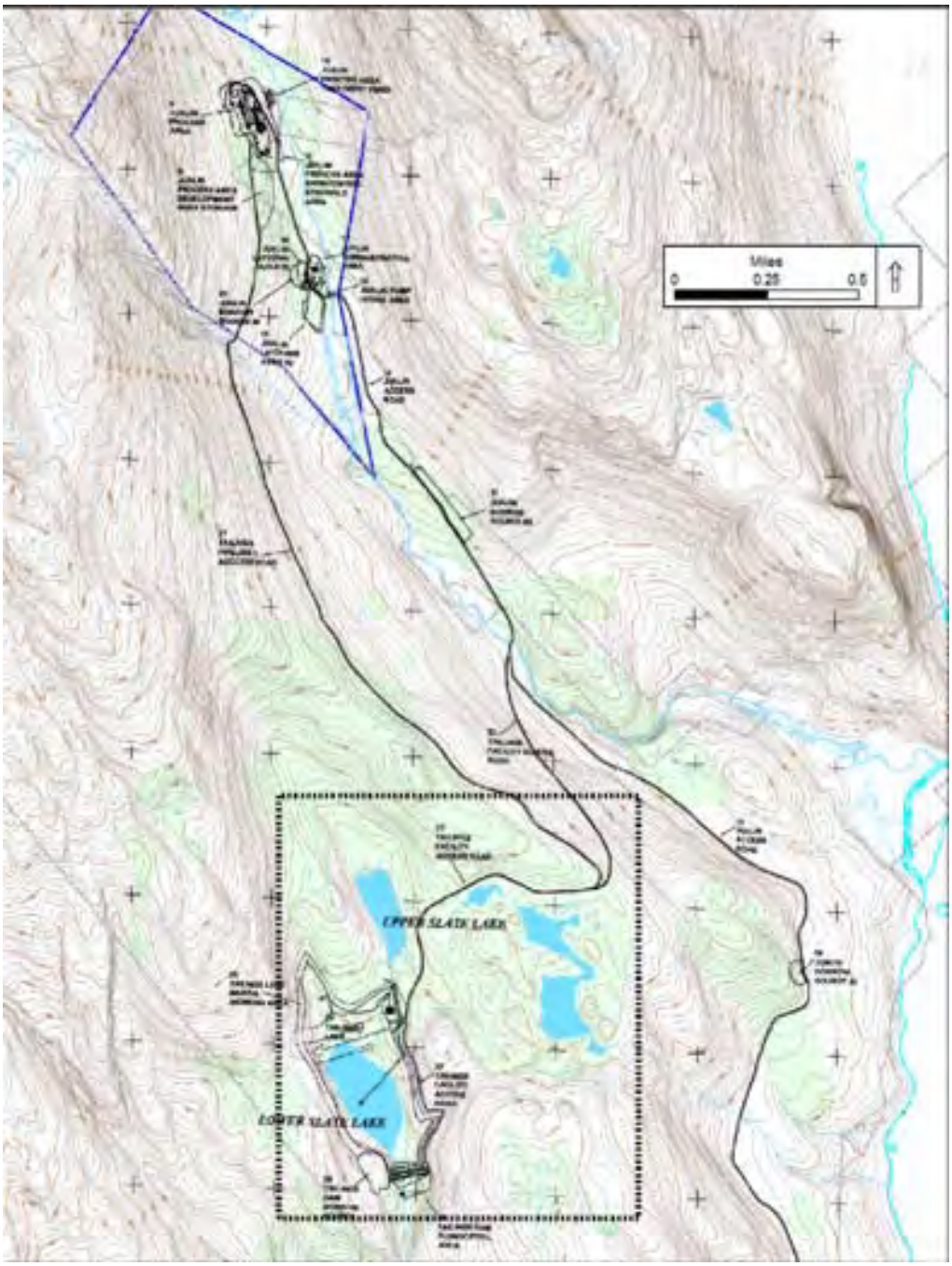

Figure 1: Slate Lakes Basin in relation to access roads and tailings facility. The access road to the tailings facility was constructed in 2006. The tailings dam was constructed between August 2009 and August 2010. The tailings facility was actively in use during the 2012 monitoring season.

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 2012, 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.

Field technicians visited each transect two to three times a month during 2012 when the area was free from snow. The following methodology was followed during each survey.

Coeur Alaska wildlife technicians located the north stake of a transect and strung a 50-meter measuring tape to reach the south stake. Trained field technicians then walk 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. One Bushnell wildlife camera was set up along a game trail in an attempt to capture images of individual animals, but at some point the camera malfunctioned and failed to capture any images.

Trained technicians under the guidance of a field biologist 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).

Figure 3: Spectacle Lake basin with access road to the Tailings Facility 2010.

Species of special interest included herons, waterfowl such as Vancouver Canada Geese, and raptors such as eagles and goshawks. No special surveys to detect the presence of goshawks using standard broadcast methods were conducted in 2012.

4.0 Survey Results

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

As stated before, the wildlife camera set up along a game trail failed to catch any images due to a faulty sensor. However, the same camera was used earlier in the year at a location near the Slate Lake site to capture images of black and brown bear feeding on a winter-killed moose carcass. A selection of those images has been included in Section E of the appendix. 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 2012 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 early September (Table 2). The greatest amount of bear sign was noted at transects T9, T10, and T11, all of which are located on the east side of Spectacle lake. 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. There were several sightings of black bear around the Spectacle Lake basin between late May and late October 2012. 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. The greatest concentrations of moose sign were seen along transects near the shore of Spectacle lake at transect 17, 8, and 5, and near Upper Slate lake at transect 20. Moose sign data is shown in Table 3. The concentrations of moose at these transects is consistent with the data obtained in 2010 and 2011. 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. A group of Canada geese arrived shortly after lake ice melted in June and were observed intermittently through August.

Approximately 13-18 geese were present in the basin during 2012 (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 pair of Lesser Yellowlegs appeared to be nesting near T12. Lesser Yellowlegs were noted in great abundance in the Slate Lakes Basin. 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 2012 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 F.

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

Transect	7/26/2012	8/8/2012	8/16/2012	8/22/2012	8/29/2012	9/2/2012	9/28/2012	10/11/2012	10/18/2012	Total
T1	1	0	0	1	1	2	1	0	0	6
T2	0	0	1	1	2	2	3	0	0	9
T3	1	1	0	2	0	0	0	0	0	4
T4	2	0	1	1	2	2	2	0	0	10
T5	1	0	2	3	4	4	1	0	0	15
T6	3	1	0	1	4	2	3	0	0	14
T7	1	1	1	1	2	1	0	0	0	7
T8	3	0	1	0	2	3	2	3	0	14
T9	3	0	1	1	1	2	3	1	0	12
T10	4	1	2	3	4	3	4	4	0	25
T11	1	1	4	4	3	2	1	0	0	16
T12	2	0	2	0	2	1	1	0	0	8
T13	1	2	0	3	0	0	2	0	0	8
T14	1	0	1	0	3	2	0	1	0	8
T15	1	2	0	1	1	2	2	0	0	9
T16	2	0	0	1	0	1	2	0	0	6
T17	0	0	0	5	1	3	2	3	0	14
T18	3	1	0	0	2	3	2	0	0	11
T19	4	0	0	0	1	1	4	0	0	10
T20	2	1	1	1	1	2	4	0	0	12
Total	36	11	17	29	36	38	39	12	0	218

Table 2: Number of bear signs at each transect

Transect	7/26/2012	8/8/2012	8/16/2012	8/22/2012	8/29/2012	9/2/2012	9/28/2012	10/11/2012	10/18/2012	Total
T1	0	0	0	0	0	1	1	0	0	2
T2	0	0	0	0	0	0	0	0	0	0
T3	1	1	0	1	0	0	0	0	0	3
T4	0	0	0	0	0	0	0	0	0	0
T5	0	0	0	0	0	0	0	0	0	0
T6	0	1	0	1	2	2	0	0	0	6
T7	0	0	0	0	0	0	0	0	0	0
T8	0	0	0	0	0	0	0	0	0	0
T9	2	0	0	1	1	2	2	0	0	8
T10	2	1	2	2	3	2	2	2	0	16
T11	0	0	4	3	3	0	0	0	0	10
T12	0	0	0	0	0	0	0	0	0	0
T13	0	0	0	0	0	0	0	0	0	0
T14	1	0	0	0	1	0	0	0	0	2
T15	1	1	0	1	1	0	0	2	0	6
T16	2	0	0	0	0	1	2	0	0	5
T17	0	0	0	1	0	0	0	1	0	2
T18	0	0	0	0	0	0	0	0	0	0
T19	0	0	0	0	1	1	1	0	0	3
T20	0	0	0	0	0	0	0	0	0	0
Total	9	4	6	10	12	9	8	5	0	63

Table 3: Number of moose signs at each transect

Transect	7/26/2012	8/8/2012	8/16/2012	8/22/2012	8/29/2012	9/2/2012	9/28/2012	10/11/2012	10/18/2012	Total
T1	1	0	0	1	1	1	0	0	0	4
T2	0	0	1	1	2	2	3	0	0	9
T3	0	0	0	1	0	0	0	0	0	1
T4	2	0	1	1	2	1	1	0	0	8
T5	0	0	2	2	4	4	1	0	0	13
T6	1	0	0	0	2	1	3	0	0	7
T7	1	1	1	1	2	1	0	0	0	7
T8	3	0	1	0	2	2	2	3	0	13
T9	1	0	1	0	0	0	1	1	0	4
T10	2	0	0	1	1	1	2	2	0	9
T11	0	0	0	1	0	1	0	0	0	2
T12	1	0	1	0	2	0	0	0	0	4
T13	0	0	0	0	0	0	1	0	0	1
T14	0	0	1	0	2	2	0	1	0	6
T15	0	1	0	0	0	2	0	0	0	3
T16	0	0	0	1	0	0	0	0	0	1
T17	3	0	0	2	1	3	2	2	0	13
T18	3	1	0	0	2	3	2	0	0	11
T19	4	0	0	0	0	0	3	0	0	7
T20	2	1	1	1	1	2	4	0	0	12
Total	24	4	10	13	24	26	25	9	0	135

Table 4: Number of goose sign at each transect

Transect	7/26/2012	8/8/2012	8/16/2012	8/22/2012	8/29/2012	9/2/2012	9/28/2012	10/11/2012	10/18/2012	Total
T1		0	0	0	0	0	0	0	0	0
T2		0	0	0	0	0	0	0	0	0
T3		0	0	0	0	0	0	0	0	0
T4		0	0	0	0	1	1	0	0	2
T5	1	0	0	2	0	0	0	0	0	3
T6	2	0	0	0	0	0	0	0	0	2
T7		0	0	0	0	0	0	0	0	0
T8		0	0	0	0	1	0	0	0	1
T9		0	0	0	0	0	0	0	0	0
T10		0	0	0	0	0	0	0	0	0
T11	1	1	0	0	0	0	1	0	0	3
T12	1	0	1	0	0	1	1	0	0	4
T13	1	1	0	3	0	0	1	0	0	6
T14		0	0	0	0	0	0	0	0	0
T15		0	0	0	0	0	0	0	0	0
T16		0	0	0	0	0	0	0	0	0
T17	2	0	0	1	0	0	0	0	0	3
T18		0	0	0	0	0	0	0	0	0
T19		0	0	0	0	0	0	0	0	0
T20		0	0	0	0	0	0	0	0	0
Total	8	2	1	6	0	3	4	0	0	24

4.3 Other Sightings

Both western toads (Bufo boreas) and wood frogs (Rana luteiventris) were sighted throughout the 2012 season on numerous occasions in muskegs and small ponds. The locations of the sightings ranged throughout the Slate Lakes basin, but were predominantly sighted near transects 18 and 19. A wood frog had been observed in 2010. Prior to that, no wood frogs had been observed since 2004. Based on numerous wood frog sightings in 2011 and 2012, 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 2012. 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

Due to stage two of the dam project, the access road to the TTF had considerable daytime traffic use during the months of June through October. Noise from traffic along the access road was most noticeable at T1, T13, T14, T17, and T18. Vehicle traffic was considerably heavier on the TTF access road than it had been during the previous observation year.

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 late August and September, before sharply decreasing in 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 T10 and T11 had more bear sign while transects T17 and T8 had more moose sign. Most of the bear sign found was in the form of scat, tracks and digging. Both bear and moose sightings were concentrated in transects in close proximity to the shore of Spectacle lake. In contrast, last year moose were more often seen at the north western end of the study area near Upper Slate Lake, while bear sign was most commonly found to the north east and south west of Spectacle Lake. 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 September. During August and September there were 13-18 geese on Spectacle lake, which is comparable to 2011 (13-15) and 2010 (19). The no-fly zone over the Spectacle Lake basin, instigated through Coastal Helicopters in 2007 to minimize disturbance to geese, continued through 2012.

6.0 Conclusions

Wildlife signs within the Slate Lake Basin were quite a bit lower than from 2011 observations. However, it must be noted that significant changes to the monitoring program were made during this time. A shortened monitoring period likely resulted in less animal activity recorded. Additionally, Coeur Alaska personnel conducted monitoring during the 2012 season and not biologists previously familiar with the study. Snowfall for the winter of 2011-12 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. As a result, browse and berry growth were stunted and travel through the area hindered until well into the summer.

During the months of July through October stage two of the dam project created heavy construction noise along the TTF road and around Lower Slate lake. If sighting numbers were lower only along transects near the road, this could be evidence of traffic discouraging animal travel through the area, but there were fewer animal sightings site wide. Anecdotally, there were also fewer sightings of large mammals throughout the entire Kensington mine site. It is possible that the winter was very hard on the moose population in particular, and one winter-killed moose was found on the mine site as evidence to this.

As noted in previous years, a primary summer use of the area was as a refuge for Canada Geese. There were approximately 13-18 Canada Geese on site during 2012, which is similar in numbers to the previous 2 years. During 2009 there were 29 geese on Spectacle Lake, 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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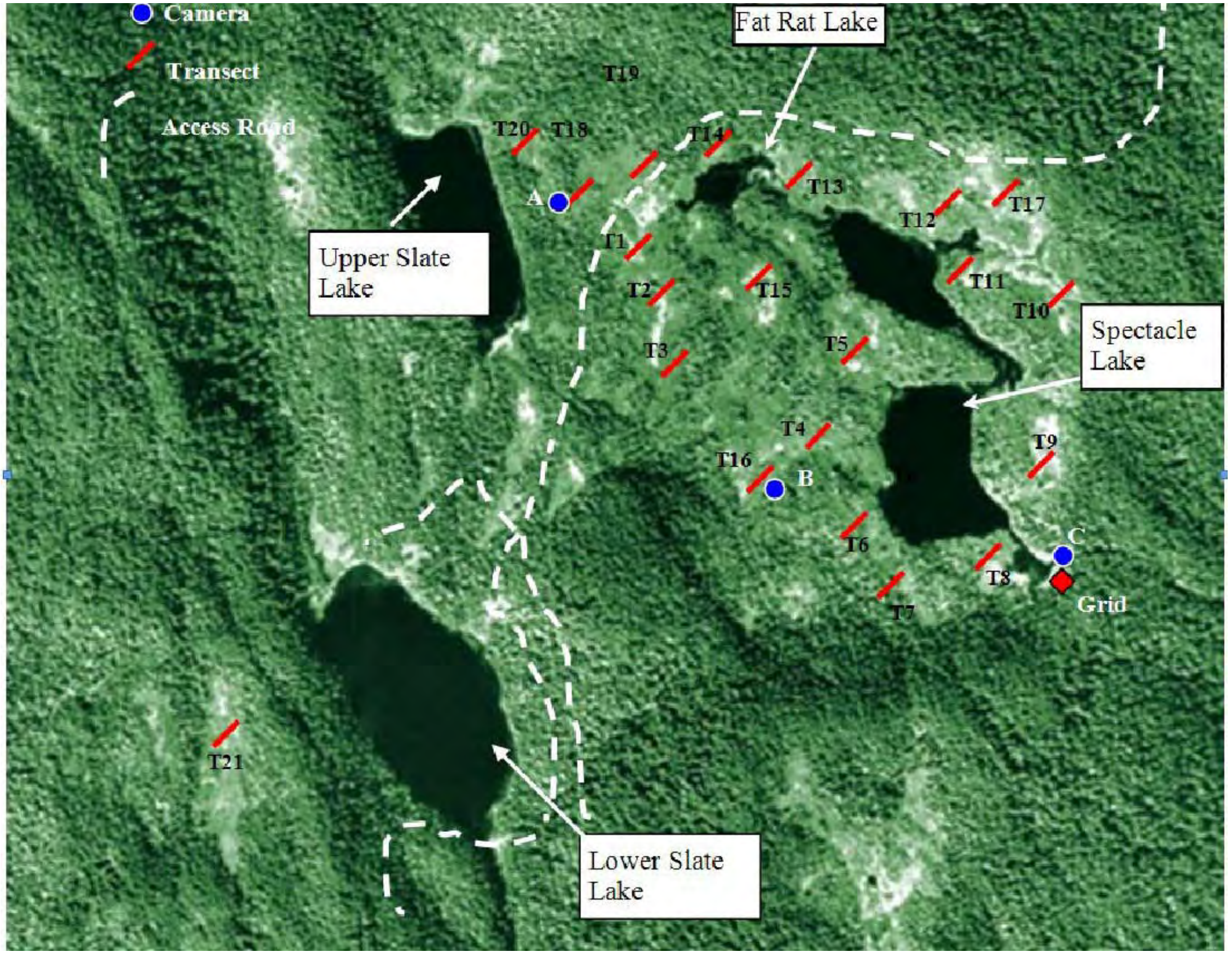
APPENDIX A

SITE MAP


Camera
Transect
Access Road
Fat Rat Lake
T19
T20
T18
T14
T13
T17
T12
A
T1
Upper Slate Lake
T2
T15
T11
T10
Spectacle Lake
T3
T5
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

2012 DATA SHEETS

Transect Data

Transect:

Personnel: CaG/BB

Date: 7/26/12

Weather:

Time:

	Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
10:05	T16	3m	L					
		13	L+R					
		38	L+R					
10:07	T17	4	L					
		30-35	L+R					
		45	R					
		50	R					
10:15	T20	12	L					
		17	R					
10:25	T13	21	L					
10:27	T1	5	R					
10:30	T2							
10:34	T3	49	R					
10:40	T15	15	R					
	T5	11	R					
10:50	T4	24	L+R					
		39	R					
	T16	14	L					
		16	L					
	T17							
	T6	10	R					
		17	L					
		39	R					
	T7	10	R					
	T8	17-15	L+R					
		28	R					
		40	R					

Transect Data

Transect: ____

Personnel: CG

Date: 7/26

Weather: ____

Time: ____

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T9	1	L	D	B			
	23	R	T	M			
	49	C	D	B			
T10	5	R	S	B			
	11	R	D	B			
	27	L	T	M			
	48	R	T	M			
T7	15	LHR	T	M			
	21	L	T	M			
	25	L	S	G			
	30	L	S	G			
	46	R	T	M			
T11	30	C	S	G			
T1M	12	R	D	B			
T12	18	L	S	G			
	49	R	T	M			

Transect data

Mobile Observation Data

Area Traversed: _____

Personnel: Ryan Bailey / Zach Bickrell

Date: 8-8-12

Weather: Cloudy / Breezy 55-60°F

Sighting Location	Time	Species	Photo (Y/N)	Description/Notes
T-18 @ 1m	—	M	—	Track C
T-19				
T-20 @ 21m		M		Track L,C,R
T-13 @ 35m		Canis		Scat L,C
@ 45m		M		Track L,C,R
T-1		—	—	—
T-2				
T-3 @ 49m		B		S, C
T-15 @ 42m		B		Dry
@ 10m		M		Track L,C,R
T-5		—	—	—
T-4		—	—	—
T-16		—	—	—
T-17		—	—	—
T-6 @ 10m		B		Dry R
T-7 @ 17m		M		Track L,C,R
T-8	—	—		—
T-9	—	—	—	—
T-10 @ 18m, 25, 41		B		Dry C,L
T-11 @ 6m		C, Scat		R

Transect Data

Transect:

Date: 8-16-12

Time:

Personnel: Ryan Bailey, Gillin V-6

Weather: P. Cloudy 60°F

	Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
8:30	T-18 @		—	—	—		
	T-19		—	—	—		
	T-20 @ 26m	L, R	Track	Moose			
	T-13		—	—	—		
	T-12 @ 18m		Track	Moose			
	@ 25m		Scat	Goose			
	T-11 @ 38		Track	Moose			
	T-17		—	—	—		
	T-11 @ 23		Dog, Bear	"			
	@ 25		"	"			
	@ 40		"	"			
	@ 50		"	"			
	T-10 @ 29m	L	Dig, Deer	" "			
	@ 10m	L					
	T-9 @ 2m	L	Track	Moose			
	T-8 @ 1m	L, R	Track	Moose			
	T-7 @ 3m	R	Track	moose			

Transect Data

Transect: _____ Date: 8-16-12

Personnel: Ryan Boice, Collin W-G Weather: P. cloud, 60°F Time: _____

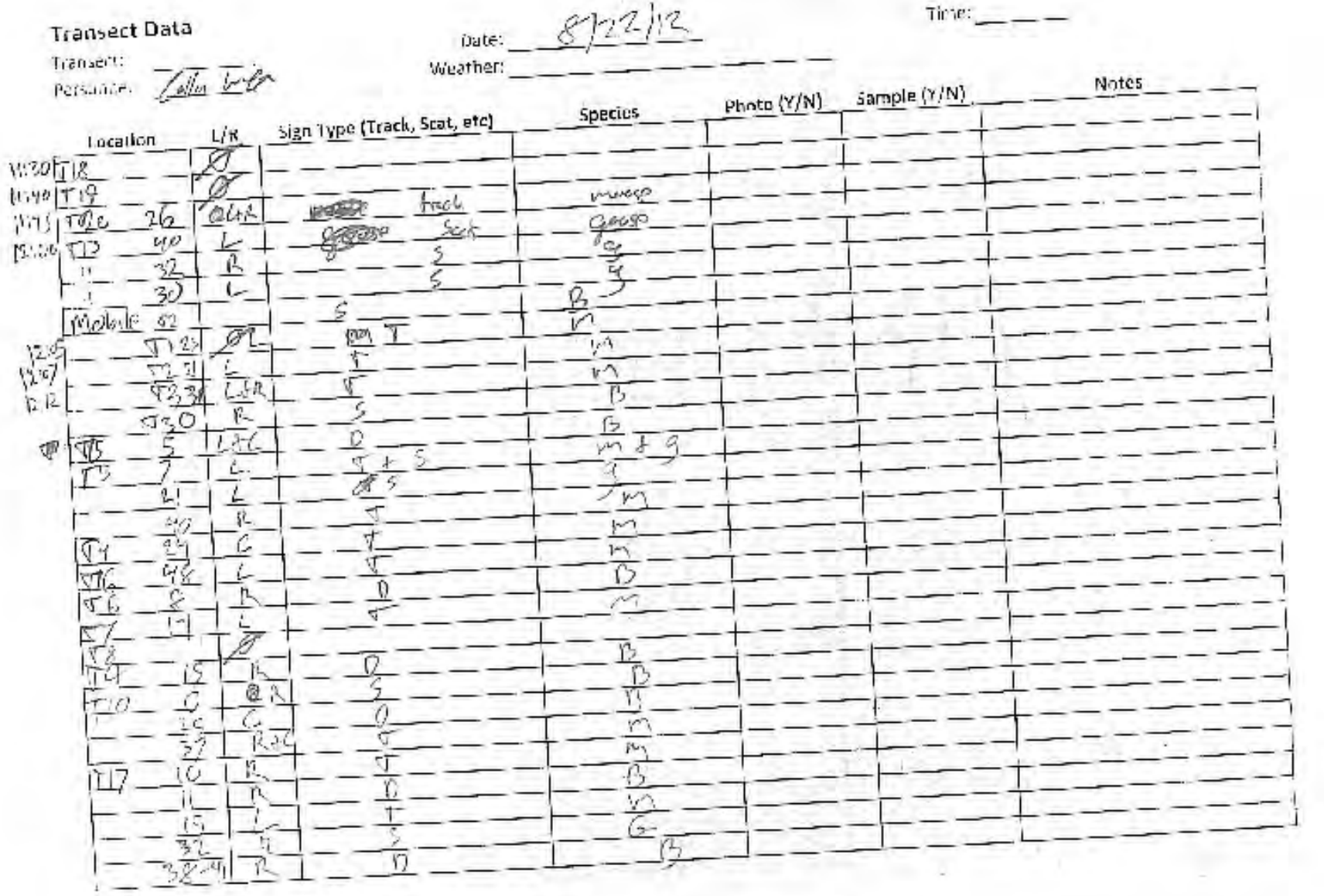
Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T-4 @7m	C	Track	Moose			
T-16		"	"			
T-5 @6	C	Track	Moose			
@21	C	"	Moose			
T-3		"	"	"		
T-2.8		Track	Moose			
T-1		"	"	"		
			13 Canadian geese on S. Lake			

Transect Data

Transect: _____ Date: 8/22/12 Time: _____

Personnel: Kelly Weber Weather: _____

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
W:30 T18						
W:40 T19						
W:45 T20	26	Q&R	track			
W:50 T21	40	L	scat			
	32	R				
	30	L				
Mobile	62					
	23					
	21					
12:05	38	L&R				
12:07	30	R				
P 12	5	L&R				
T5	7	L				
	21	L				
	40	R				
T4	45	L				
T3&6	42	R				
T6	12	L				
T7						
T8	15	R				
T9	0	@ R				
T10	10	L				
	32	R&L				
T11	10	R				
	11	R				
	15	L				
	32	R				
	41					



Transect Data

Transect: ____ __

Personnel: __ ____

Date: ____ ____ ____

Weather: ____ ____ ____ __

Time: ____

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
[illegible] 0	L	D	B			
12	L	D	B			
27	C	D	B			
27	C	D	M			

Transect Data

Transect:

Recorder: Callie Lucio

Date: 8/29/12

Weather:

Time:

	Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18 1200	17	R	T	M			
	30	R	T	M			
T19 1200	28	L	D	B			
T20 1210	25	L&R	T	M			
T13 1215	0						
T1 1215	32	L	T	M			
T2 1220	12	R	T	M			
	31	L	T	M			
T14 1225	0						
T15 1230	5	L	D	B			
T5 1233	20	L	T	M			
	30	L	T	M			
	40	R	T	M			
	49	L	T	M			
T16 1240	0						
T4 1240	16	R	T	M			
	31	L&R	T	M			
T6 1245	10	R	D	B			
	23	L	D	D			
	15	L&R	T	M			
	25-30	L&R	T	M			
T7 1250	12	R	T	M			
	27	L&R	T	M			
T8 1256	8	R	T	M			
	20	R	T	M			
T9 1308	7	R	D	D			
T10 1320	3	R	D	M			
	8	R	D	D			
	25	L	D	B			
	32	R	D	B			

Transect Data

Transect: ____ ____ Date: ____ Time: ____

Personnel: ____ ____ Weather: ____

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T11 1330	20	L	D	B		
	21	L	D	B		
	32	L	D	B		
T14 1342	2	L	D	B		
	6	L	S	M		
	16	L	S	M		
T 10 1536	11	L	S	M		
T 12 1545	5	L	S	M		
	7A	L	S	M		

Transect Data

Date: 9/2/12 Time:

Observer:

Personnel: CG

Weather:

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18	M	L	T	M			
	19	R	T	M			
	48	R	T	M			
T19	28	L	D	B			
T20	14-17	L+R	T	M			
	23	L	T	M			
T13							
T1	20	L+R	T	M			
	28	L	D	B			
T2	41	R	T	M			
	48	L	T	M			
T3							
T15	7	R	T	M			
	19	L	T	M			
T5	21	L	T	M			
	23	L	T	M			
	35	L+R	T	M			
	40	L	T	M			
T16	33	R	D	B			
T4	14	L	S	S			
	26	R	T	M			
T6	10	R	D	B			
	23	L	D	B			
	29	L	T	M			
T7	41	L	T	M			
T8	7	L	T	M			
	18	R	T	M			
	50	L	S	G			

Transect Data

Transect: ____

Personnel: ____

Date: 9/12

Weather: ____

Time: ____

Location	L/R	Sign Type (Truck, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T9 7	L	D	B			
12	R	D	B			
T10 9	L/R	T	M			
18	L	D	B			
21	L	D	B			
T11		T	M			
T14 17	L	T	M			
30	R	T	M			
T17 15	L	T	M			
23	L	T	M			
71	R	T	M			
T12 11	L	S	G			

17-18 geese on S. Lake

Transect Data

Transect:

Personnel: Rob

Date: 9/28/12

Weather:

Time:

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T18	12	L	T	M			
	46	L	S	M			
T19	7	L	T	M			
	21	R	T	M			
	93	L	T	M			
	50	R	D	B			
T20	5	R	T	M			
	11	R	T	M			
	19	L	T	M			
	25	R+L	T	M			
T13	1	L	S	G			
	14	L	T	M			
T1	22	R	S	B			
T2	18	L	T	M			
	31	L	T	M			
	40	R	T	M			
T3	—		—				
T15	13	R	D	B			
	19	R	S	B			
T5	23	L+R	T	M			
T16	10	L	D	B			
	21	L	D	B			
T4	5	R	S	G			
	31	L	T	M			
T6	3	L	T	M			
	14	R	T	M			
	28	L+R	T	M			
	—						

Transect Data

Transect: ___ ___

Personnel: ___

Date: 7/28

Weather: ___

Time: ___

Location		L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
T7							
T8	16	R	T	M			
	49	R	T	M			
T9	2	L	D	B			
	14	L	D	B			
	36	L	T	M			
T10	13	L	T	M			
	18	L+R	T	M			
	33	L	D	B			
	49	R	S	B			
T11	25	L	S	G			
T14							
T17	15	L+R	T	M			
	38	L	T	M			
T12	44	L	S	G			

Transect Data

Transect:

Personnel: Colin Lutz

Date: 10/11/12

Time:

Weather:

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
16:15 T-8 @ 2-10m	C	—	M			
@ 40-	L	S	M			
@ 40-42m	C	T	M			
T-9 @ 4m	L	T	M			
T-10 @ 4m	C	T	M			
@ 14m+25m	L	D	B			
42m	L	T	M			
45m	B L	D	B			
T-11	—	—	—			
T-12 @ 2m	L	T	M			
10m	L	T	M			
9:14/12m	C	D	B			
T-14 @ 10m	L,C,R	T	M			
T-13	—	—	—			

Transect Data

Transect: ____ ____ Date: ____ Time: ____

Personnel: ____ ____ Weather: ____

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
15:15						
T-18 @ 10m	R	T	M			
T-19 @ 2.5m	L	T	M			
T-20 @ 5m	R	S	B			
	L, L, R	T	M			
T-13 @ 3m	L	S	B			
T-1 @ 5m	L	T	M			
T-2 @ 1m	L	S	B			
@ 10m	L	T	B			
@ 30m	R	T	M			
T-3 @ 22m	L	T	M			
T-15 @ 8m	L	D	B			
T-5 @ 40m	L, L, R	T	M			
T-4	—	—	—			
T-16 @ 15m	L	T	M			
T-6 @ 1m	L	S	B			
@ 16m	R					
T-7 @ 14m	L, L, R	T	M			

Transect Data

Transect: _____ Date: 10/18/12 Time: _____

Personnel: Collin W-C Weather: overcast, snowy, 32°F

Location	L/R	Sign Type (Track, Scat, etc)	Species	Photo (Y/N)	Sample (Y/N)	Notes
		First snow of the year. 3-4" at spectacle lakes.				
		No sign of animals at any transect. One set of moose tracks (2 sets)				
		between T3 and T5				
			-Collin Wigfield-Cortez			

APPENDIX D

PHOTO LOG

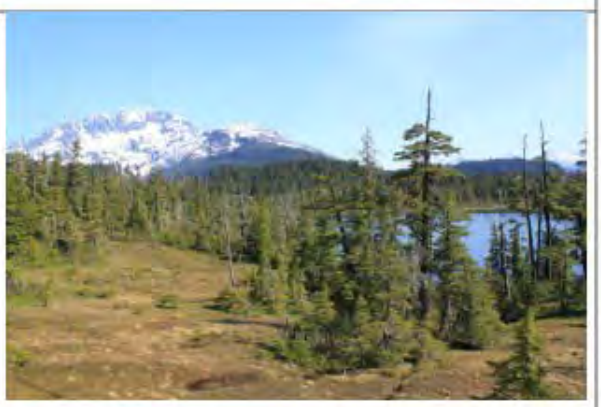
Coeur Alaska Kensington Terrestrial Wildlife Monitoring: Photo Log

Transect

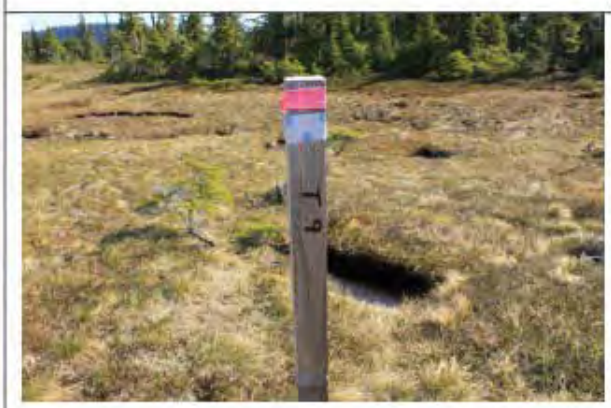
Looking towards the TTF Access Road.

Goose Print.

Spectacle Lake.



Transect Marker Stake.



Transect.

Bear scat.

Looking towards Spectacle Lake

Moose print.

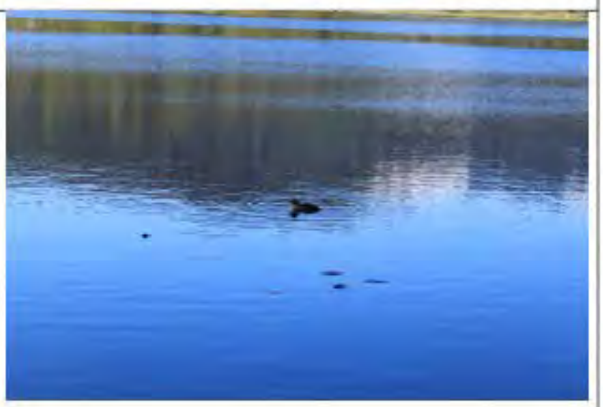
Looking towards Fat Rat Lake

Small toad.

Tailings Storage Facility.

Tailings Storage Facility

Goldeneye.



Upper Slate Lake.

APPENDIX E

MOTION SENSOR CAMERA PHOTOS


BUSHNELL
4.23.2008 15:56:36


BUSHNELL
5.04.2008 4:57:05


BUSHNELL
5.04.2008 20:18:50

APPENDIX F
AVIAN SPECIES LIST

1. White-winged Scoter (*Melanitta fusca*)
2. Greater Scaup (*Aytha marila*)
3. Mallard (*Anas platyrhynchos*)
4. Canada Goose (*Branta canadensis*)
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*

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*)
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

Common = multiple sightings through season
S = identified through sighting
C/S = identified through call or song
B = both sighted and heard