WOLVERINE PROJECT

WILDLIFE PROTECTION PLAN

2011 ANNUAL MONITORING REPORT

QML - 0006

Prepared for:

Wolverine Project Wildlife Technical Committee

Yukon Energy, Mines and Resources

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1 Introduction

Yukon Zinc Corporation's (YZC) Wolverine Mine is located in the southeast Yukon within the Kaska Traditional Territory (Figure 1-1). Commencing in spring 2009, YZC actively implemented wildlife protection measures and monitoring programs as per *Wildlife Protection Plan V2009-01* (*WPP*). The *WPP* was approved in April 2009 by Yukon Energy, Mines and Resources under Quartz Mining License QML-0006 Section 12.3. The *WPP* describes YZC's commitments for minimizing and managing impacts from routine mine activities, presents a framework for the wildlife monitoring programs, provides the process of improving mitigation and management measures through the process of adaptive management, and outlines reporting requirements.

The purpose of the 2011 monitoring program was to gather data on the state of wildlife during the initial stages of the operations phase, and compare it to baseline data to identify any potential impacts from the mining activities. This report provides an overview of the Wolverine Project site activities in 2011, and a detailed summary of the activities and wildlife monitoring programs that were completed in 2011.

Figure 1-1: Wolverine Project Location, Yukon

1.1 Project Development and Operations

The focus of YZC's activities in 2011 was the development of the Wolverine Project for operation.

Mine surface infrastructure construction and underground mine development continued into 2011, and included the following activities:

- Access road improvements (i.e., widening, grading, ditching, defining shoulders and culvert installation, slope stabilization and progressive reclamation);
- Operation of quarry area (i.e., blasting and crushing activities at KM 19);
- Construction of a concrete batch plant within the Industrial Complex (commenced in September, 2011);
- Decommissioning of surface sumps 3 and 4;
- Construction and commissioning of a new waste rock pad located west of the tailings facility;
- Construction of the truck shop for underground and surface equipment;
- Underground mine ramp and stope rehabilitation and development; and,
- Milling activities, with ramping up of production continuing through 2011 with the aim of achieving commercial production in early 2012. Tailings were either discharged to the tailings storage facility, or thickened and utilized underground as paste backfill.

2 Summary of 2011 WPP Programs

Provided below are summaries of the activities completed in 2011 that fulfill YZCs commitments outlined under *WPP Section 4: Wildlife Protection Procedures,* including wildlife safety training and consultation with the local outfitting concession holder. No Wildlife Technical Committee meetings were held in 2011.

2.1 Wildlife Safety Training

Under *WPP Section 4.1: Protection Procedure 1*, YZC committed to providing mine personnel and contractors with wildlife safety training. During site orientation training for all employees, contractors and visitors, wildlife protection measures and reporting requirements were outlined. Specific wildlife safety training sessions (total of 98) were delivered during full orientations to all on-site personnel (including contractors) by the YZC Environmental Department at the Wolverine Mine throughout 2011 on a bi-weekly basis.

The training sessions focused on the importance of wildlife protection, both for the wildlife and the safety for those working/living in camp, and emphasized the need to follow the wildlife protection policies that were implemented on site.

As in 2010, questions and open discussions during the training programs centered on the presence of 'nuisance wildlife' (e.g., foxes, coyotes, and ravens) on site, and approaches to minimize wildlife attraction, including:

- Maintaining a tidy work area and keeping pick-up trucks free of miscellaneous garbage and debris;
- Following the 'No Littering' and 'No Feeding of Wildlife' policies, with discussions surrounding the rationale behind them;

- Being an active participant in the waste management program on site;
- Ensuring spill kits are adequately replenished so that spills of hydrocarbons and antifreeze (animal attractant) are collected and disposed of in a timely manner; and,
- The importance of reporting wildlife observations and locations where wildlife are seen most frequently at the mine site.

2.2 Consultation with Local Outfitting Concession Holder

Consultation with the local outfitting concession holder, Teslin Oufitters, was completed by YZC on May 30, 2011 as identified by the *WPP Section 4.2: Protection Measure 3*. The outcome of YZC's discussion with Teslin Outfitters indicated that YZC's operational activities were outside of Teslin Outfitters active outfitting areas for 2011, and therefore their activities would not be compromised.

3 Wildlife Monitoring Programs

The wildlife monitoring programs that continued in 2011 as outlined in *WPP Section 5* include:

- Wildlife Records Program
- Winter Wildlife Monitoring Program
- Vegetation Metals Program
- Small Mammals Metals Program
- Tailings Facility Monitoring

The description for each program includes the study area, sampling locations, methods, and results. Recommendations for program modifications are included in Section 3.8.

3.1 Wildlife Research Permits

A *Wildlife Research Permit*, required to undertake the trapping of small mammals for The Small Mammal Metals Program, was obtained on July 18, 2011.

3.2 Wildlife Records Program

The Wildlife Records Program consists of reporting of wildlife observations and incidents within the mine site area and along the access road. The information collected from this program provides incidental data on wildlife occurrences to identify existing and/or potential issues and/or areas of concern in relation to project components. Detailed methods for reporting wildlife incidents and observations are provided in *WPP Appendix C*.

3.2.1 2011 Wildlife Observations

Wildlife observations were reported to site management, crew supervisors, and/or recorded in the wildlife logs located in various locations around site. In 2011, 25 wildlife species (Table 3-1) were documented in proximity to the exploration camp, mine site, camp complex, tailings facility, landfill, and access road. Table 3-2 provides a summary by month of all reported wildlife observations in 2011. The 2011 wildlife log for the incidental wildlife observation program is provided in Appendix A.

Table 3-1: Wildlife species list from 2011 reported wildlife observations

Common Name	Scientific Name	Common Name	Scientific Name
Woodland Caribou	*Rangifer tarandus caribou*	Porcupine	*Erethizon dorsatum*
Moose	*Alces alces*	Snowshoe Hare	*Lepus americanus*
Red fox	*Vulpes vulpes*	Ptarmigan	*Lagopus* sp.
Grey Wolf	*Canis lupus*	Bald Eagle	*Haliaeetus leucocephalus*
Vole sp.	*Microtus pennsylvanicus*	Crane sp.	*Grus sp.*
Beaver	*Castor sp.*	Eagle sp.	Unspecified species
Black Bear	*Ursus americanus*	Deer sp	Unspecified species
Red Squirrel	*Tamiasciurus hudsonicus*	Wolverine	*Gulo gulo*
Chipmunk	*Tamias* sp.	Owl	Unspecified Species
Green Winged Teal	*Anas carolinensis*	Belted Kingfisher	*Ceryle alcyon*
Grizzly Bear	*Ursus arctos*	Duck sp.	Unspecified species
Sandpiper sp.	*Unspecified species*	Mouse sp.	Unspecified species
Golden Eagle	*Aquila chrysaetos*		

Table 3-2: Summary of reported wildlife observations within the Wolverine Mine area in 2011

Species	No. Observations by Project Component				
	Robert Campbell HWY	Access Rd (KM 1-24)	Tailings Pond/Airstrip/Landfill (KM 24-27)	Camp & Industrial Complex (KM 27-29)	Exploration Road/Camp (KM 29-32)
January					
Fox		2		1	
Moose		3			
February					
Moose		2			
Fox				2	
Ptarmigan				10	
March					
Raven				1	
April					
Fox		2	3	3	
Porcupine				3	
Cranes				~30	
Chipmunk				1	
May					
Porcupine		9	2	5	
Caribou		5	2		
Fox		1	2	9	
Wolf		1		1	
Bear		1		0	
Duck sp.		8	24	3	
Squirrel		1			
Ptarmigan		3			
Crane sp.		~500		~501	~250
Moose		3			
Mouse		1			
Green Winged Teal		6			
Chipmunk				1	
Eagle				1	
Rabbit		1			
Wolf		1		1	
Wolverine			1		
Wolverine			1		

Species	No. Observations by Project Component				
	Robert Campbell HWY	Access Rd (KM 1-24)	Tailings Pond/Airstrip/Landfill (KM 24-27)	Camp & Industrial Complex (KM 27-29)	Exploration Road/Camp (KM 29-32)
June					
Caribou		2			
Fox		1	3	13	
Porcupine		8	2	5	3
Wolf		2			1
Deer		1			
Bear		2			
Bald Eagle					2
Owl			1		
Chipmunk				1	
Duck sp.			2		
Beaver		1			
Moose		4			
Squirrel					1
Vole					1
Golden Eagle	1				
Belted Kingfisher		1			
Rabbit			1		
July					
Moose	4				
Caribou		8	2		
fox		5	32	5	8
Wolf		2	1		
Porcupine		4	1		1
Mouse		2			
Ptarmigan		3			
Chipmunk				1	
Grizzly Bear			1		
August					
Caribou		3	1		
Porcupine		3			
Fox		2	10	7	
Mouse		2			
Ptarmigan		1			

Species	No. Observations by Project Component				
	Robert Campbell HWY	Access Rd (KM 1-24)	Tailings Pond/Airstrip/Landfill (KM 24-27)	Camp & Industrial Complex (KM 27-29)	Exploration Road/Camp (KM 29-32)
September					
Moose	3				
Fox			1		
Grizzly			1		
October					
Moose		1			
Fox			3	1	
Caribou		7			
Wolf				1	
November					
Wolf	1				
Fox				2	
Caribou					15
December					
Moose		3			
Ptarmigan			50		
Fox			3	1	

3.2.2 2011 Wildlife Incidents

Three wildlife incidents occurred in 2011. Each incident was reported to site management as soon as they occurred, and reports were completed for all of the incidents. Table 3-3 provides incident date, the wildlife involved, and the nature of each incident. Apart from the ptarmigan fatality, there were no incidents that caused harm to wildlife or a major safety concern.

Table 3-3: 2011 wildlife incidents

Date	Wildlife Involved	Nature of Incident
March 8, 2011	Ptarmigan	Collision with a vehicle; one mortality and one injury
April 26, 2011*	Mallard Ducks	Sighted on the tailings pond; flew away upon deterrent
May 5, 2011	Fox	Nuisance fox trapped and relocated (unsuccessful)

*Similar bird species were observed around the tailings pond following this date and are recorded in Section 3.6

3.3 Winter Wildlife Monitoring

The study areas for the Winter Wildlife Monitoring Program include the Mine Site Study Area (MSSA), Putt Creek Study Area (PCSA), and Money Creek Study Area (MCSA). The MSSA encompasses the Wolverine Project mine site, including mine portal, tailings facility, camp complex, industrial complex, airstrip, and landfill. The PCSA encompasses the access road that connects the mine site to the Robert Campbell Highway. The MCSA (referred to in the *WPP* as the Money Creek Reference Area or MCRA) is the reference control site for the program and encompasses the Money Creek watershed, located south of the main mine site area.

3.3.1 2011 Summary and Monitoring Schedule

Winter Wildlife Monitoring for 2011 occurred from January to April and recommenced November to December. Surveys were performed for each transect on average of 5 times a year. Field monitoring was conducted according to methods detailed in *WPP Appendix E*. All sampling was carried out by trained YZC personnel. Table 3-4 provides details on each of the transects and the 2011 monitoring dates. Transect MCSA-WT02 was not sampled during the beginning of 2011 because of unsafe conditions, hence the reason it was replaced by MCSA-WT03.

Table 3-4: 2011 winter transects summary and monitoring dates

Study Area	Transect ID	POC Coordinates		POT Coordinates		Transect Length (m)	2011 Monitoring Dates
		Easting	Northing	Easting	Northing		
MCRA	MCSA-WT01	444059	6805764	442561	6807991	1400	13-Feb, 19-April, 9-Nov, 14-Dec
MCRA	MCSA-WT02	443582	6804151	442561	6807991	3500	14-Dec
MCRA	MCSA-WT03	442561	6807991	443443	680212	3000	Newly established to replace MCSA-WT02
MSSA	MSSA-WT01	439000	6811459	437381	6812665	2000	25-Jan, 22-Feb, 26-Mar, 12-Apr, 29-Nov
MSSA	MSSA-WT02	438474	6812355	439661	6811320	1100	30-Jan, 24-Feb, 26-Mar, 28-Oct, 29-Nov, 13-Dec
MSSA	MSSA-WT03	441972	6809022	442606	6808088	800	24-Jan, 7-Feb, 6-Mar, 23-Oct, 11-Nov, 24-Dec
MSSA	MSSA-WT04	440513	6810504	441041	6809862	800	24-Jan, 24-Feb, 26-Mar, 6-Nov, 17-Dec

Study Area	Transect ID	POC Coordinates		POT Coordinates		Transect Length (m)	2011 Monitoring Dates
		Easting	Northing	Easting	Northing		
MSSA	MSSA-WT05	440222	6810352	442661	6807797	3100	24-Feb, 29-Mar, 18-April, 25-Nov, 18-Dec
PCSA	PCSA-WT01	452486	6816714	452914	6818695	2020	31-Jan, 1-Mar, 20-Mar, 19-Nov, 31-Dec
PCSA	PCSA-WT02	450450	6812277	450600	6814375	2100	5-Jan, 25-Feb, 17-Apr, 18-Nov, 30-Dec
PCSA	PCSA-WT03	450673	6811319	450450	6812277	1000	5-Jan, 25-Feb, 17-Apr, 18-Nov, 30-Dec
PCSA	PCSA-WT04	450554	6814048	450967	6813940	430	20-Mar, 18-Nov

MSSA = Mine Site Study Area; PCSA = Putt Creek Study Area; MCSA = Money Creek Study Area; POC = Point Of Commencement; POT = Point Of Termination

As described in the *2010 Wildlife Protection Plan Annual Report*, transect MCSA-WT02 was discontinued and replaced by a new transect (MCSA-WT03), due to accessibility/safety reasons. For consistency, the new transect has kept the label MCSA-WT02 in the maps presented in the figures below, but will be labeled as MCSA-WT03 from 2012 forward.

3.3.2 2011 Winter Transect Results

The 2011 field program documented wildlife sign observed along the monitoring transects. A summary of these observations (i.e., location and count) is presented in Figure 3-1 to Figure 3-13 for each species, including American Mink, Marten, American Red Squirrel, Short-tailed Weasel, Vole Sp. (species unknown), Snowshoe Hare, Lynx, Wolf, Coyote, Red Fox, Moose, Woodland Caribou, and Rock Ptarmigan, respectively (raw data set can be found in Appendix B). Other observations (e.g., temperature, wind, snow depth, time of last snow fall) were also recorded for all transects monitored, as prescribed in the *WPP* and is also provided in Appendix B. The 2011 observations are compared to the 2009 and 2010 observations in the figures below for the purposes of evaluating trends in the data year to year. Blank count graphs indicate that the species was not identified in any of the monitoring years.

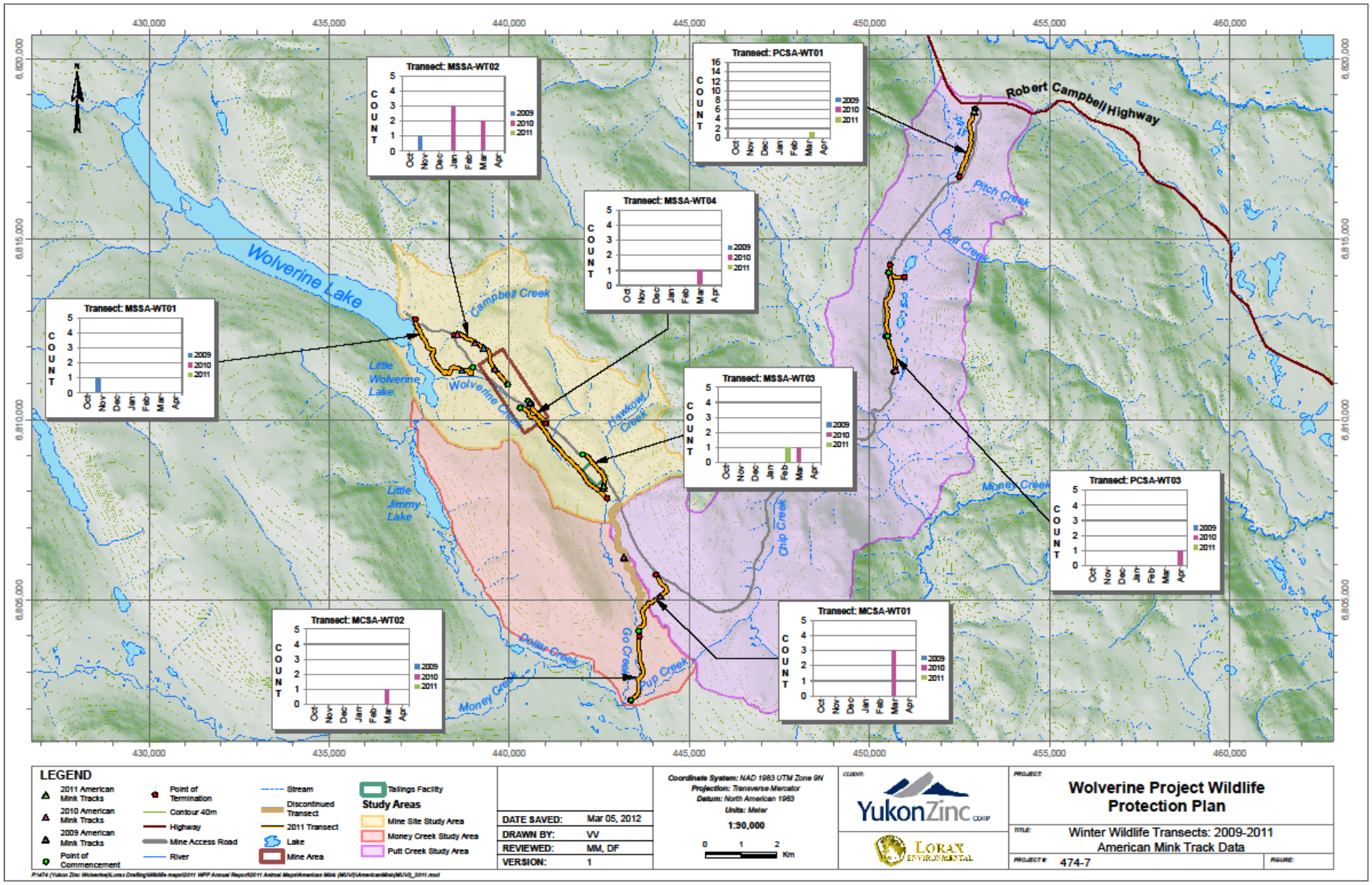

Figure 3-1: American Mink: 2011 summary of location and count along established Winter Wildlife Transects

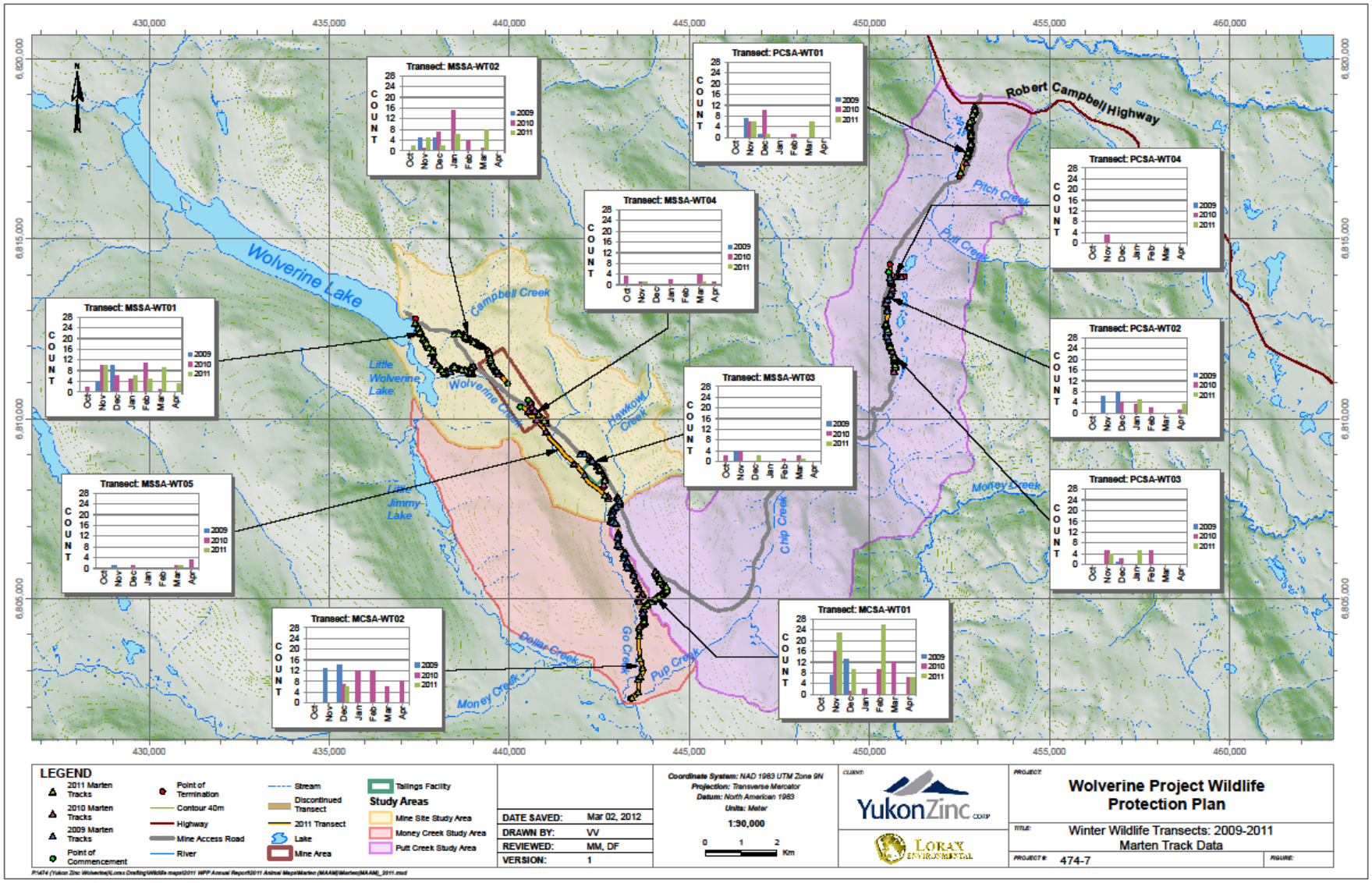

Figure 3-2: Marten: 2011 summary of location and count along established Winter Wildlife Transects

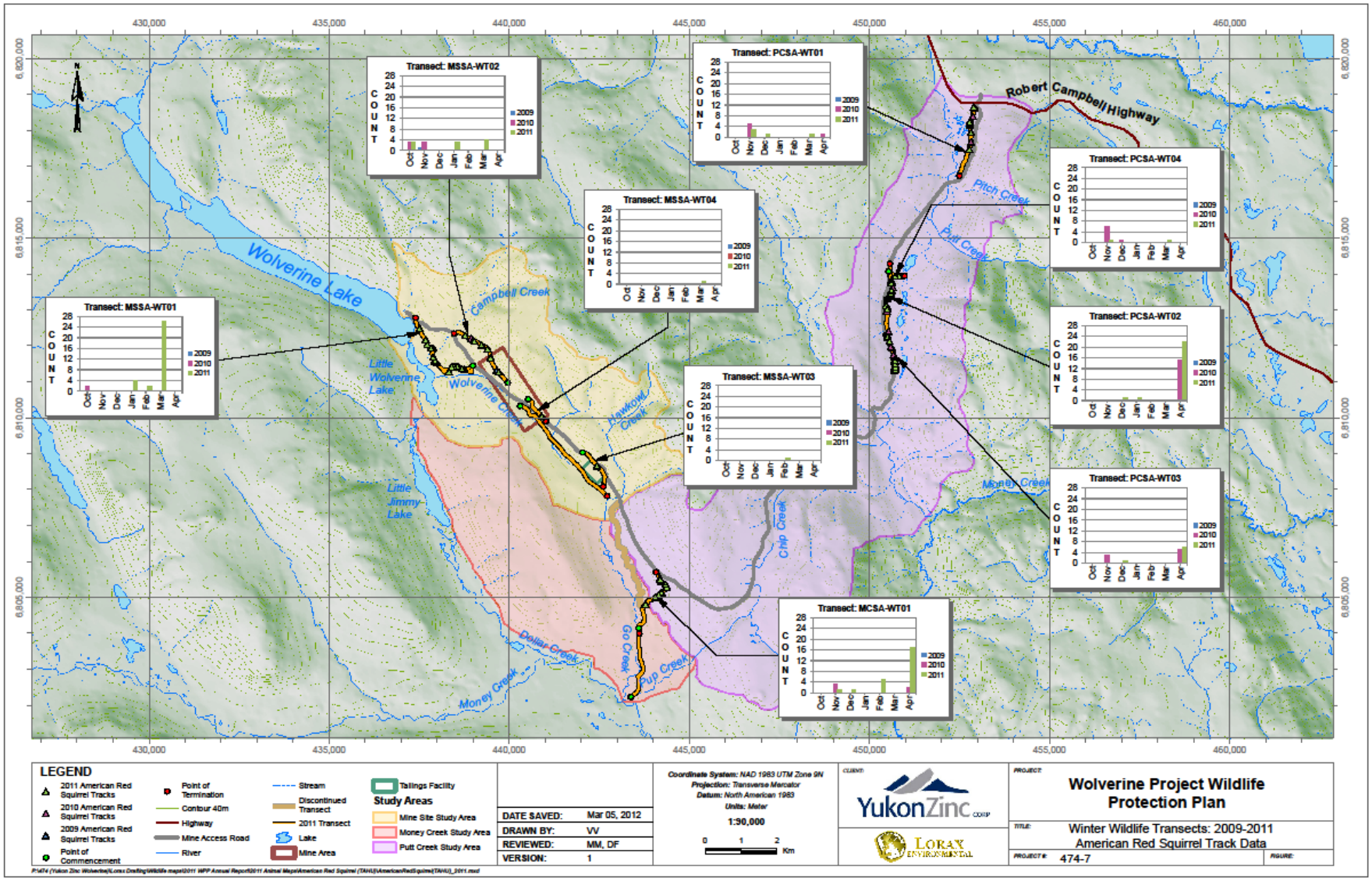

Figure 3-3: American Red Squirrel: 2011 summary of location and count along established Winter Wildlife Transects

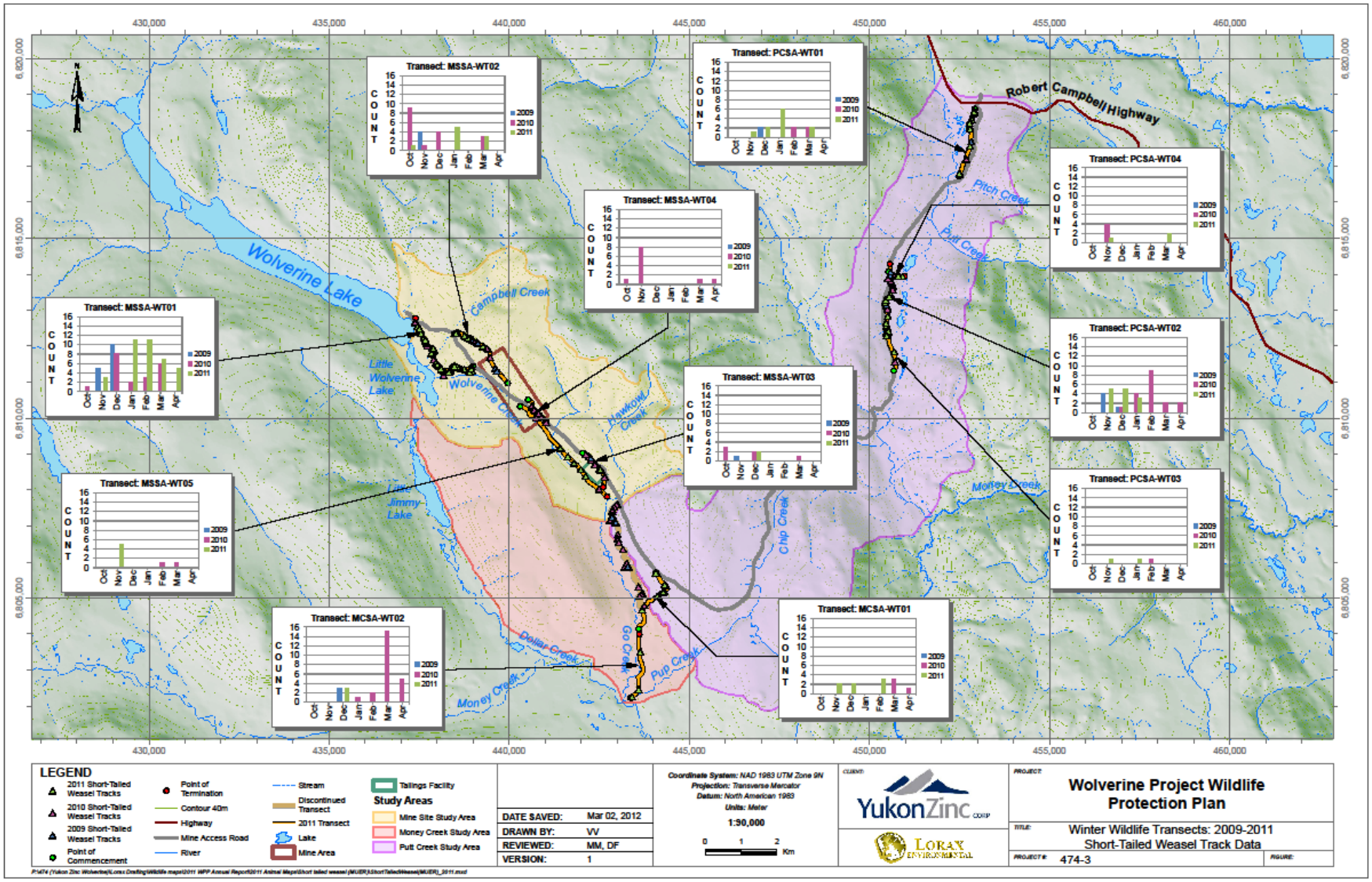

Figure 3-4: Short-tailed weasel: 2011 summary of location and count along established Winter Wildlife Transects

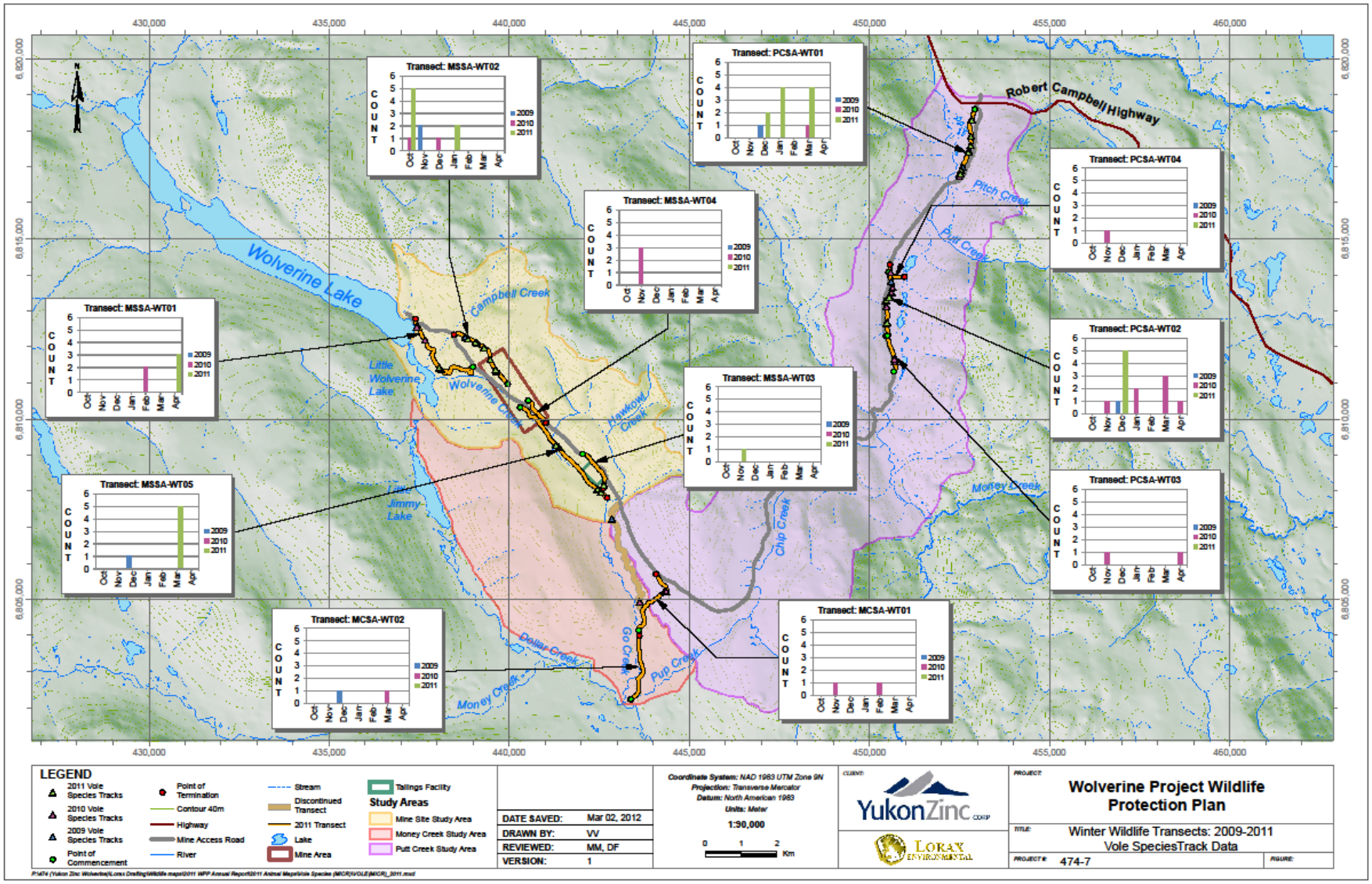

Figure 3-5: Vole Species: 2011 summary of location and count along established Winter Wildlife Transects

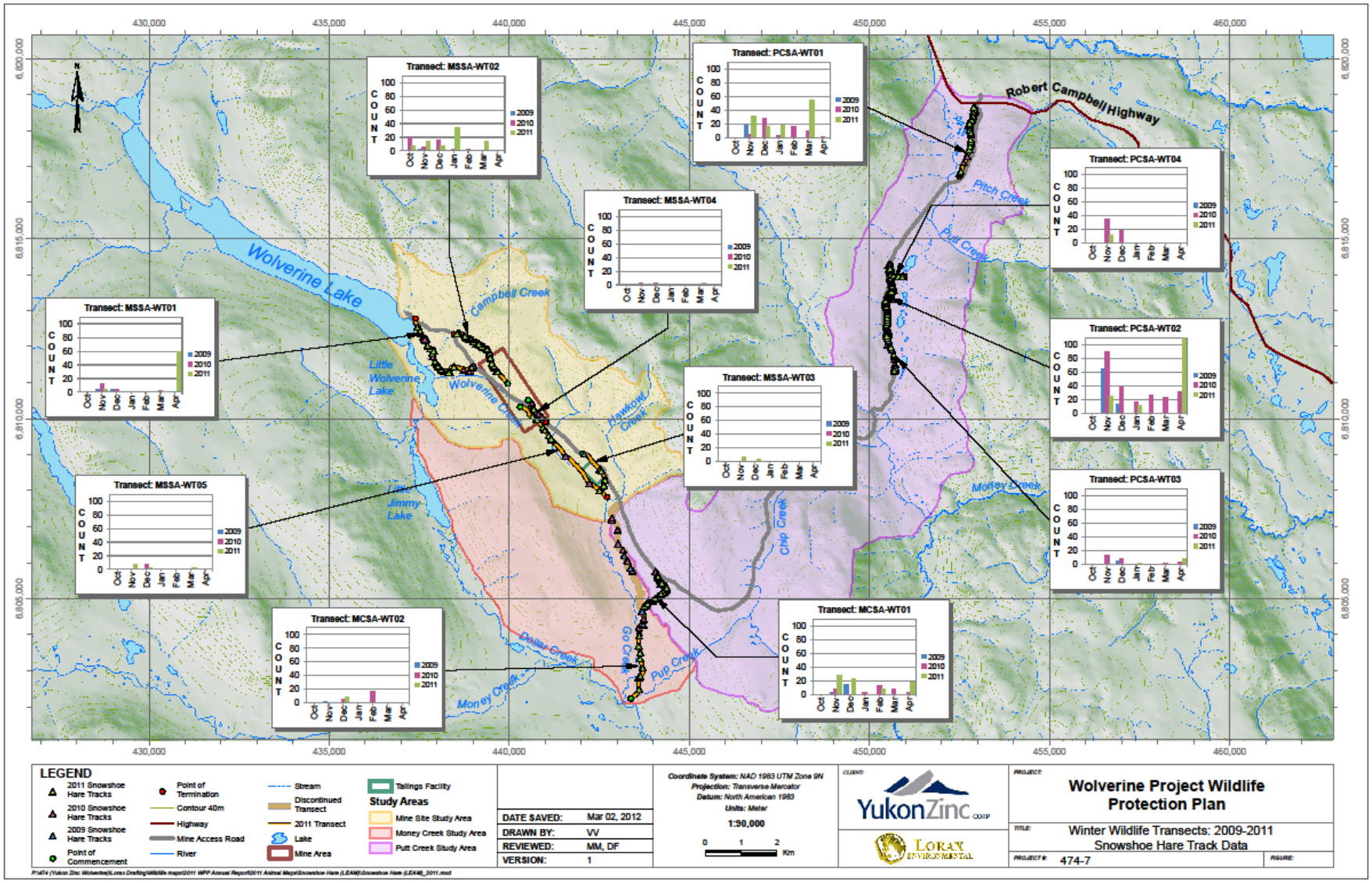

Figure 3-6: Snowshoe Hare: 2011 summary of location and count along established Winter Wildlife Transects

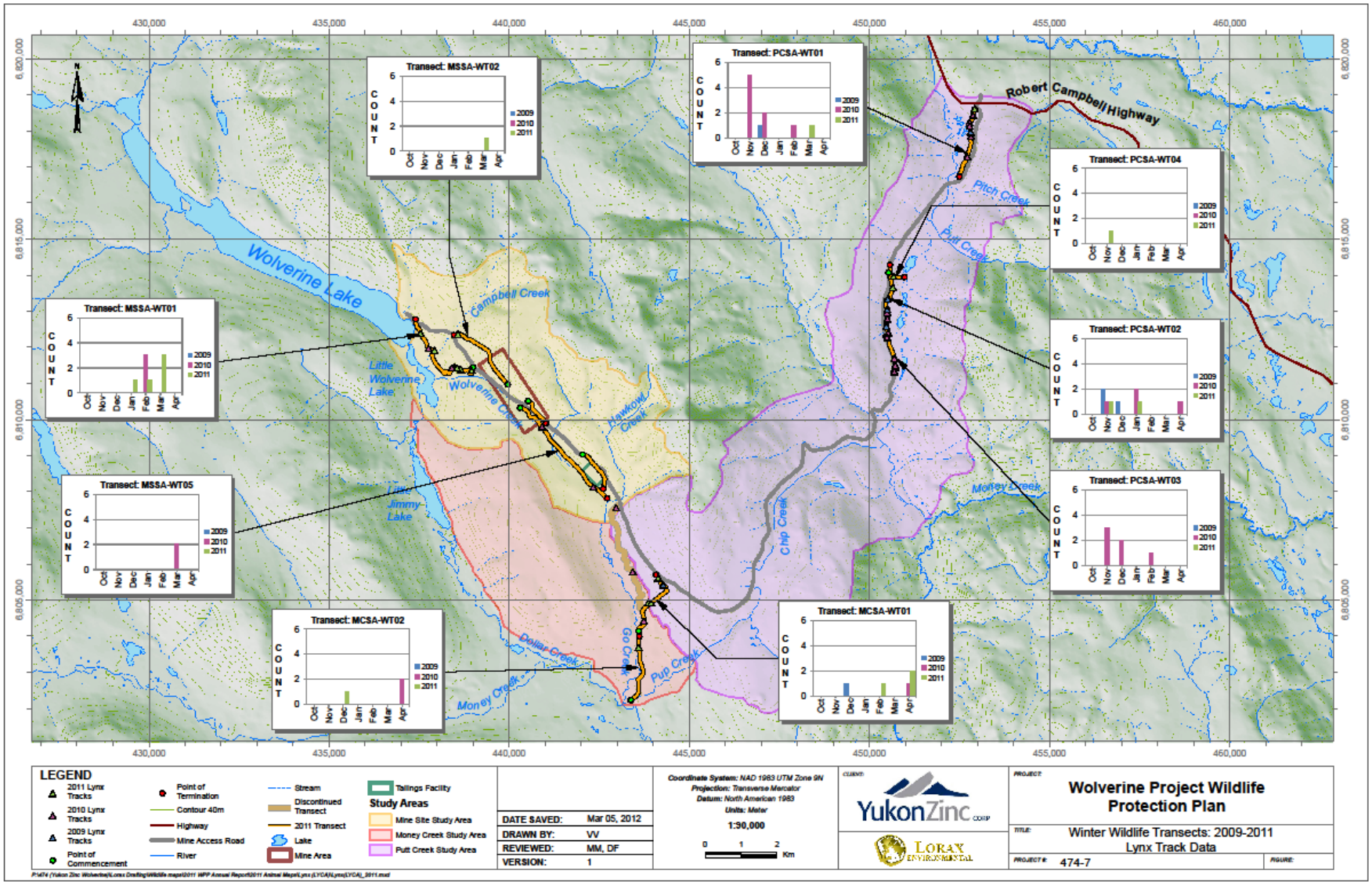

Figure 3-7: Lynx: 2011 summary of location and count along established Winter Wildlife Transects

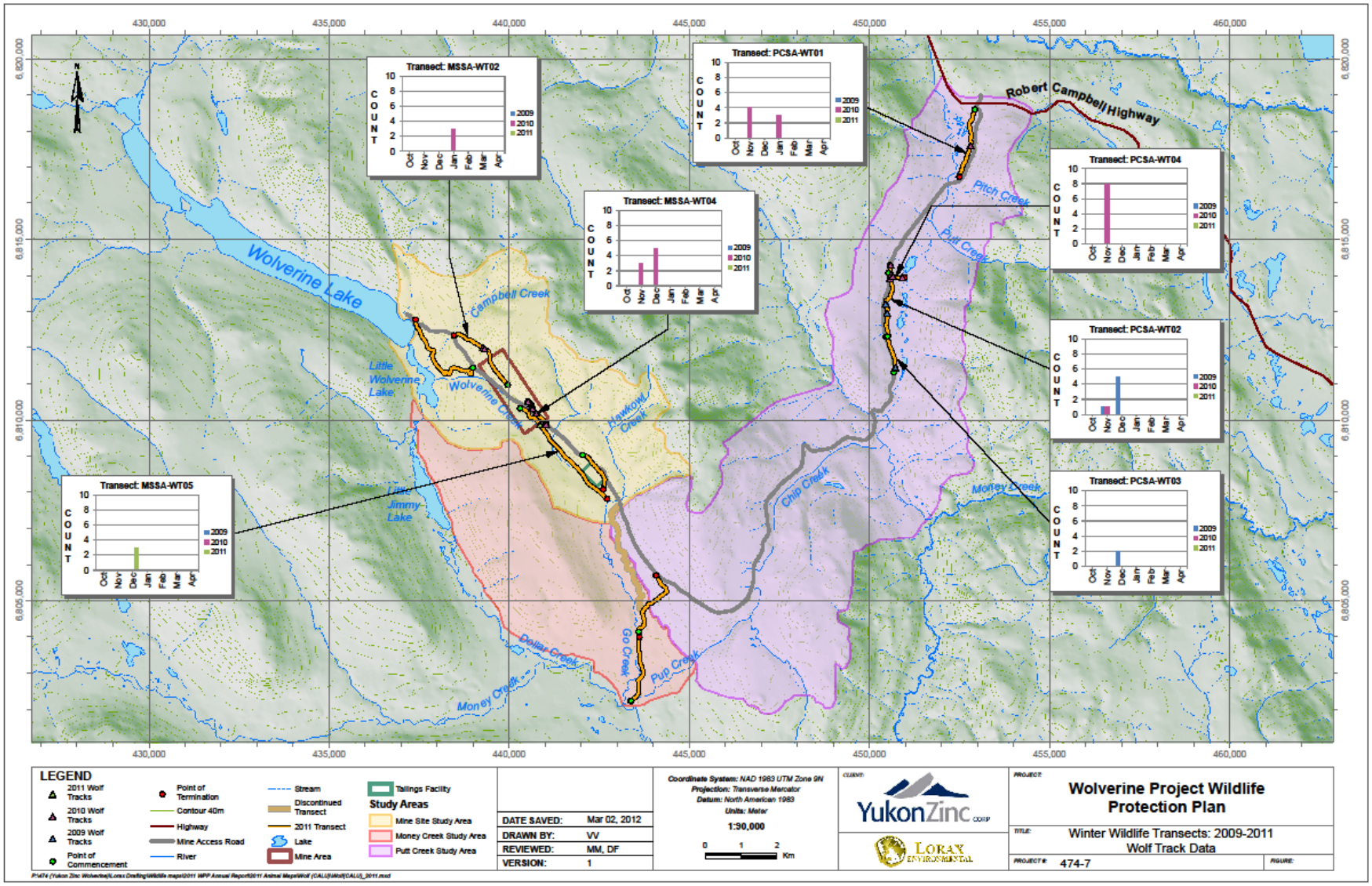

Figure 3-8: Wolf: 2011 summary of location and count along established Winter Wildlife Transects

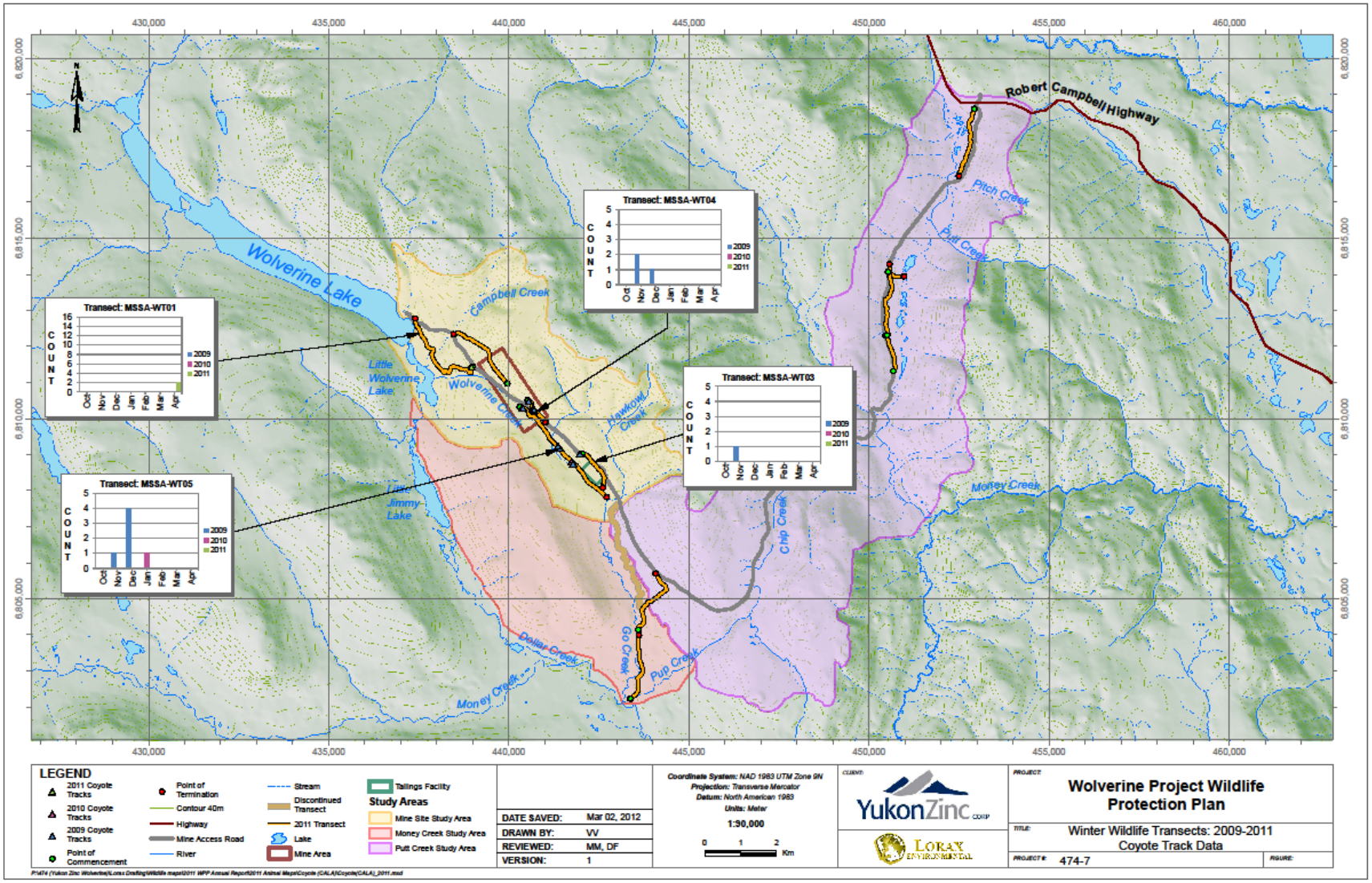

Figure 3-9: Coyote: 2011 summary of location and count along established Winter Wildlife Transects

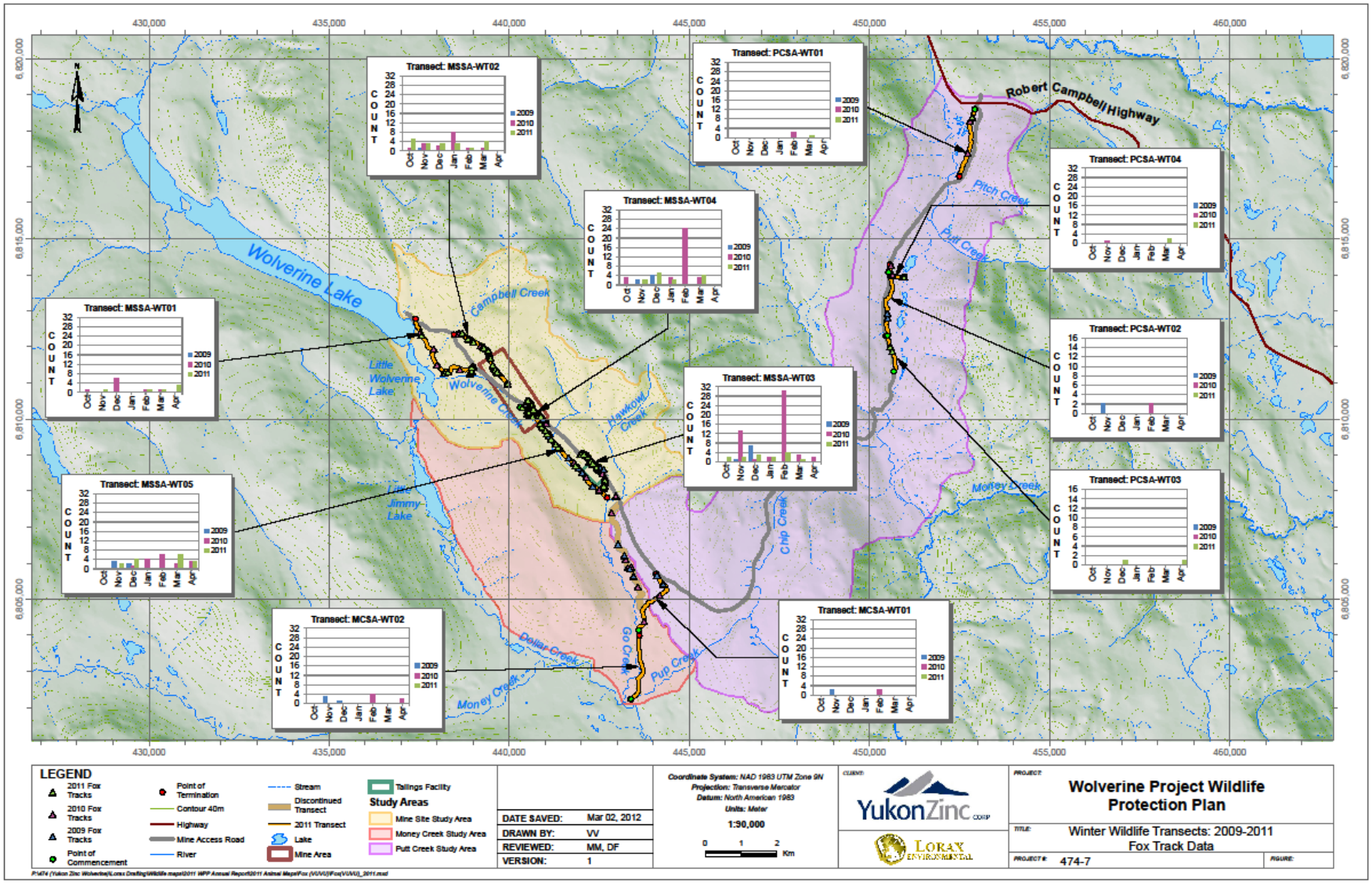

Figure 3-10: Red Fox: 2011 summary of location and count along established Winter Wildlife Transects

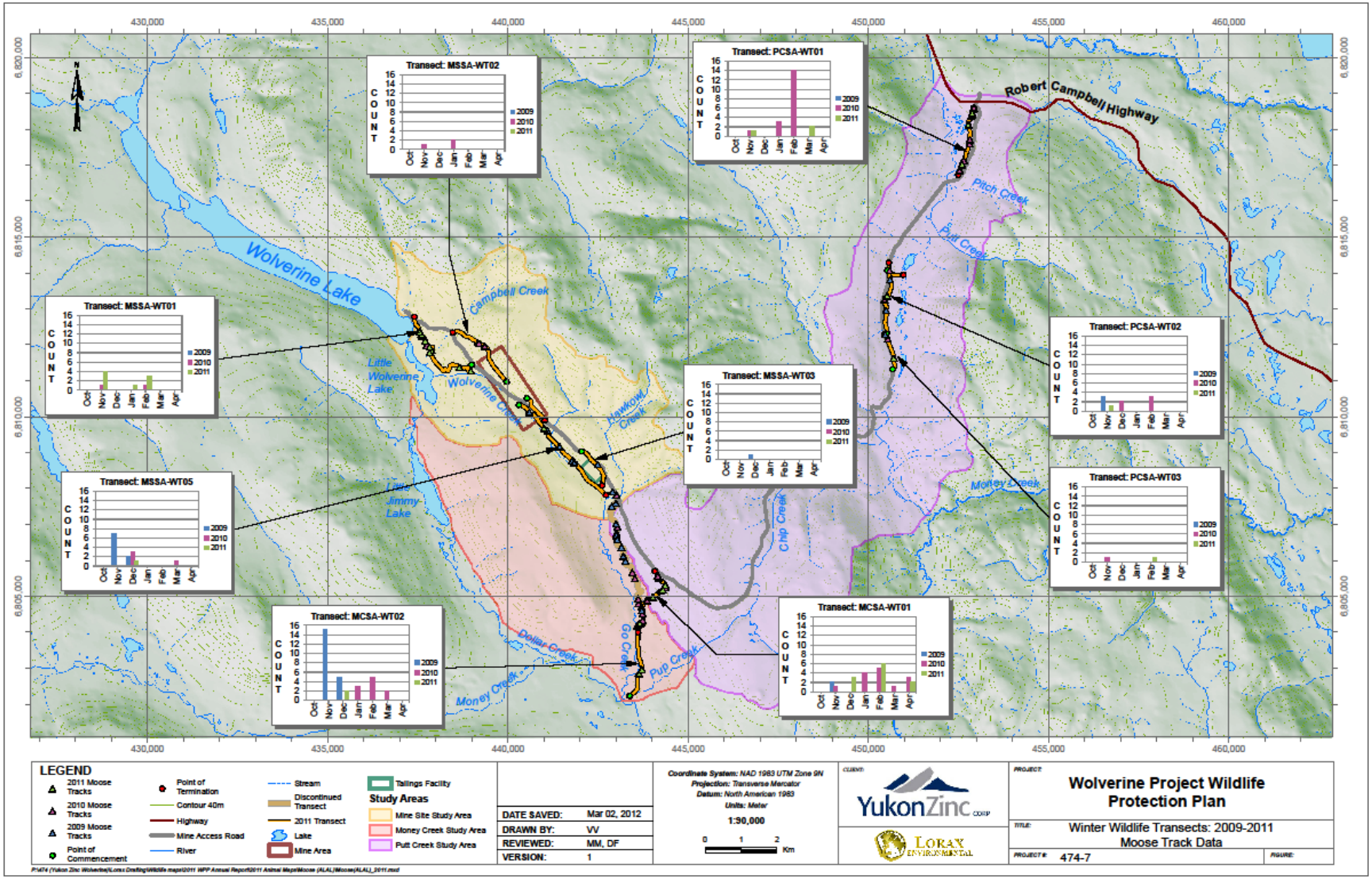

Figure 3-11: Moose: 2011 summary of location and count along established Winter Wildlife Transects

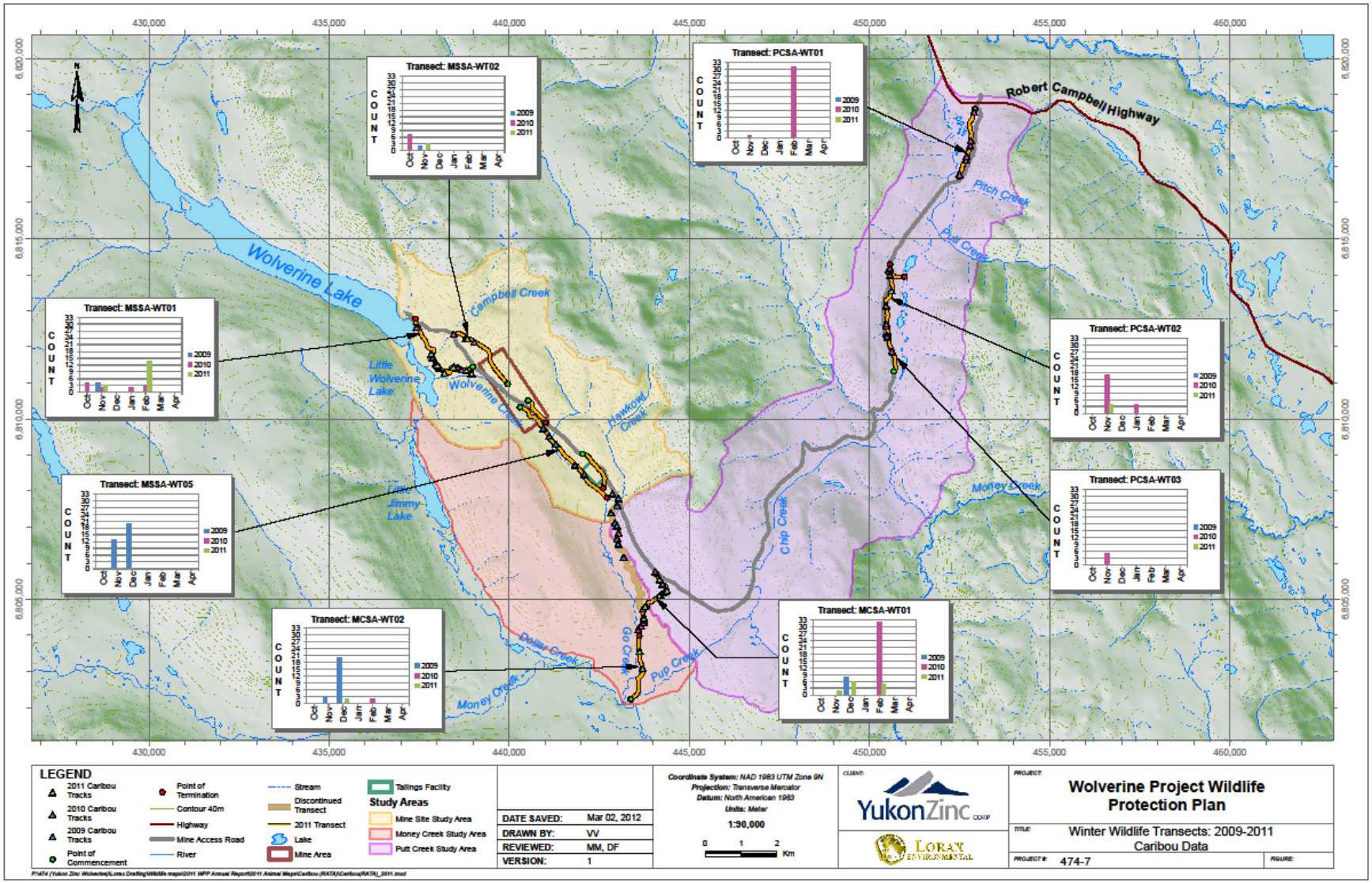

Figure 3-12: Woodland Caribou: 2011 summary of location and count along established Winter Wildlife Transects

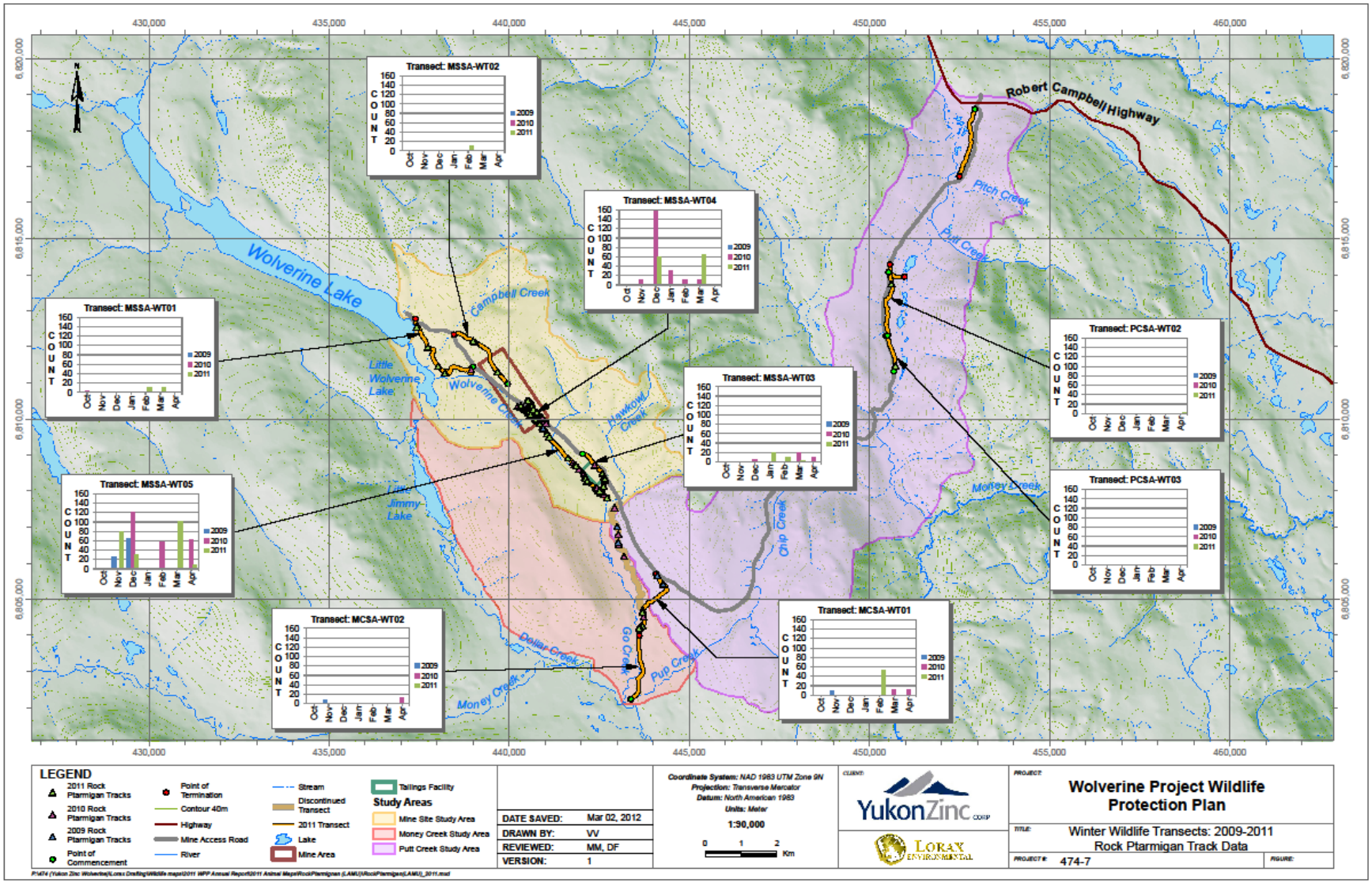

Figure 3-13: Rock Ptarmigan: 2011 summary of location and count along established Winter Wildlife Transects

3.4 Metals Levels in Vegetation

As prescribed in the *WPP*, vegetation sample collection for the metals levels monitoring program was continued in August 2011. Vegetation samples were collected according to the methods outlined in *WPP Appendix F*. The species collected included lichen (*Cladina stellaris*), horsetail (*Equisetum arvense*), and willow (*Salix planifolia*) from the MSSA, PCSA and the MCRA as shown on Figure 3-14.

Laboratory procedures were detailed by Maxxam Analytics Inc, an accredited laboratory based in Burnaby, BC. Procedures included dissection of samples, compositing of samples (as required), digestion and metals analysis. Vegetation samples were digested with a nitric-hydrochloric acid mixture to solubilize the solid matter and remove the organic material by oxidation and volatilization. The sample was then analyzed for total metals by inductively coupled plasma mass spectrometry (ICP-MS). Vegetation samples were measured for 30 elements at specified laboratory Reportable Detection Limits (RDLs) as outlined in Table 3-5.

Table 3-5: Total metal analysis parameters with Reportable Detection Limits (RDL's)

Element	Symbol	RDL (mg/kg)	Element	Symbol	RDL (mg/kg)	Element	Symbol	RDL (mg/kg)
Aluminum	Al	1	**Copper**	Cu	0.5	**Silver**	Ag	0.05
Antimony	Sb	0.1	**Iron**	Fe	10	**Sodium**	Na	10
Arsenic	As	0.01	**Lead**	Pb	0.01	**Strontium**	Sr	0.1
Barium	Ba	0.1	**Magnesium**	Mg	10	**Thallium**	Tl	0.05
Beryillium	Be	0.1	**Manganese**	Mn	0.1	**Tin**	Sn	0.1
Bismuth	Bi	0.1	**Mercury**	Hg	0.01	**Titanium**	Ti	1
Boron	B	5	**Molybdenum**	Mo	0.1	**Uranium**	U	0.05
Cadmium	Cd	0.01	**Nickel**	Ni	0.1	**Vanadium**	V	2
Calcium	Ca	10	**Phosphorus**	P	10	**Zinc**	Zn	0.1
Chromium	Cr	0.5	**Potassium**	K	10			
Cobalt	Co	0.1	**Selenium**	Se	0.01			

3.4.1 2011 Sampling Distribution and Locations

A total of 101 vegetation samples were collected during the 2011 sampling program. Table 3-6 outlines the sampling distribution of the three species collected within the two survey areas (Mine Site Survey Area and Putt Creek Survey Area) and the reference area (Money Creek Reference Area – formerly denoted as MCSA in the *2010 Wildlife Protection Plan Annual Report*). The sampling locations for each species within the 3 study areas are provided in Figure 3-14.

Table 3-6: Distribution of vegetation samples taken in 2011.

Species	MSSA	PCSA	MCRA (or MCSA)
Lichen	10	10	10
Horsetail	11	12	12
Willow	12	12	12

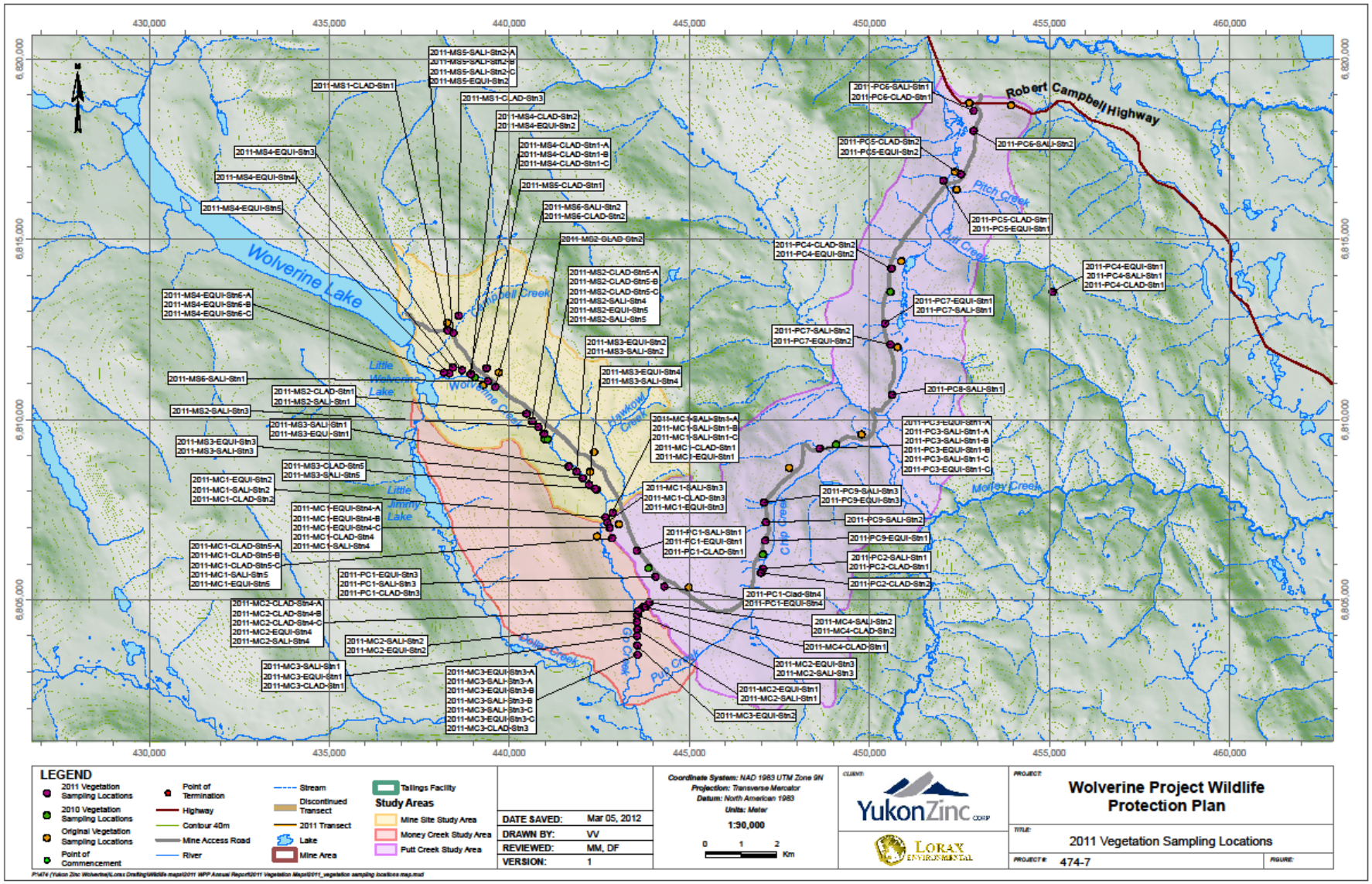

Figure 3-14: 2011 vegetation sampling distribution

3.4.2 2011 Sampling Analysis and Results

Parameters of concern are identified as being arsenic, copper, lead, nickel, selenium, cadmium, and zinc and have been examined in detail in Sections 3.4.2.1 to 3.4.2.7, respectively (a summary of all the data is provided in Appendix C). Statistical comparisons using Analysis of Variance (ANOVA) were used to determine if significant differences exist between the mean total metals from each vegetation species of the active operating study areas (PCSA and MSSA) and the reference study area (MCRA).

Statistical comparisons were also used to determine if a significant difference exists between the data collected during baseline conditions (i.e., 2009 and 2010) and that collected during 2011 (i.e., during initial stages of operations). A difference being deemed significant simply means that it is reliable, or that it did not happen by chance. When making comparisons, a 95% confidence value ($\alpha = 0.05$) was used. Hence, if a statistic is found to be significantly greater than another, one can be 95% confident that the difference is reliable/true, and did not happen by chance. The results of these comparisons are summarized in a table for each parameter in Appendix D to support the graphs generated for each metal examined. For statistical and graphing purposes, parameters that were below the detection limit were taken as equal to the detection limit. Also note that due to an insufficient number of samples collected during 2009, samples were also taken during 2010 to support the baseline data. For instance, no samples were taken from the MCRA in 2009, so all the samples representing the MCRA were taken in 2010.

Overall, the metals examined resulted in naturally high baseline concentrations, where the MSSA generally resulted in the highest metal concentrations among all three of the vegetation species. Certain metals were found to be significantly higher when compared between study areas for given vegetation species (see following sections).

3.4.2.1 Arsenic Results

The mean total arsenic concentrations (mg/L) for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-15. Statistical comparisons revealed that the mean total arsenic concentration for Lichen were significantly lower in the MCRA than in both the MSSA and PCSA, a result that was also observed in baseline sampling period (2010), further confirming the reliability of the result. When the three study areas were compared between sampling periods, it was found that both MCRA and PCSA had significantly higher mean arsenic concentrations in 2011 than the baseline sampling period (2009/10). Despite the large difference in means between sampling periods for MSSA, a significant difference was not detected, due to a large variability among the data sets.

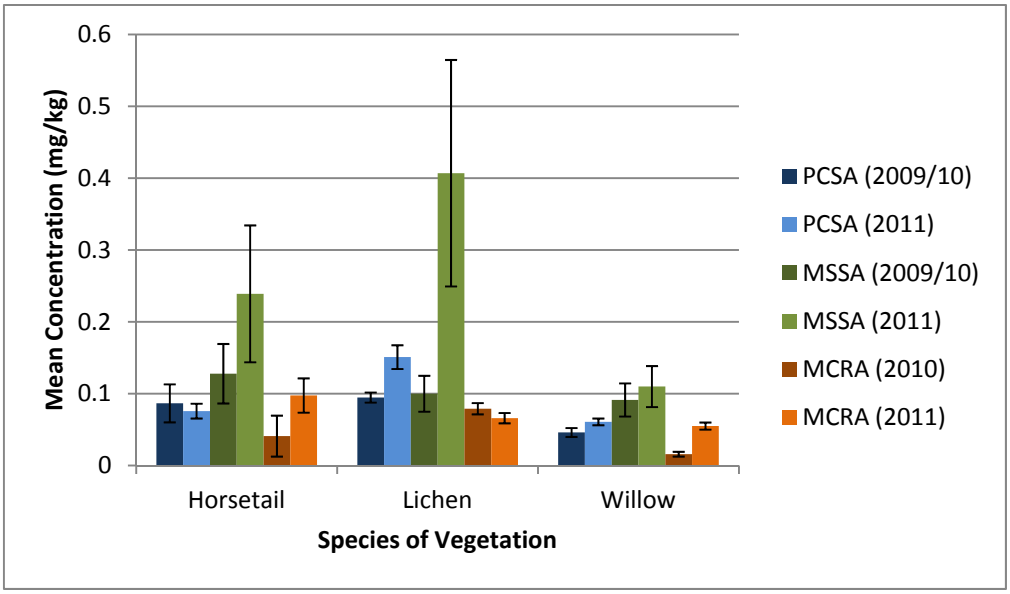

Figure 3-15: Comparison of mean total arsenic concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.2 Cadmium Results

The mean total cadmium concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-16. Statistical comparisons for mean total cadmium concentration revealed no significant differences between the study areas for any of the three vegetation species in 2011. There were also no significant differences found between sampling periods for a given vegetation species, despite MSSA concentrations being considerably higher in 2011 than 2009/10. This was due to a high variability among the MSSA (2011) data set; based on the statistical comparison made, the large difference could be by chance.

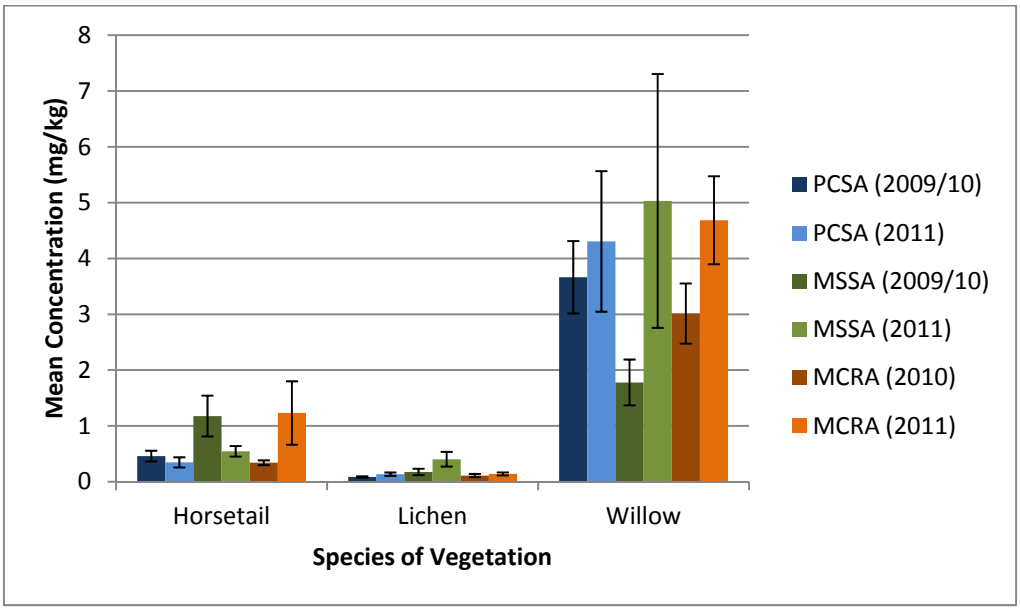

Figure 3-16: Comparison of mean total cadmium concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.3 Copper Results

The mean total copper concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-17. Statistical comparisons for mean total copper concentration revealed no significant differences between the study areas for any of the three vegetation species in 2011. Again, while the MSSA mean Lichen copper concentration was considerably higher than in the other two study areas, the variability of the data set was too large to be reliable, based on the statistical comparisons made. In 2010, however, Lichen comparisons revealed that the MSSA had significantly greater mean concentrations of copper than the two study areas, due to a lower variability among the data. Furthermore, when the three study areas were compared for each species, it was found that the MSSA and MCRA Lichen copper concentrations were significantly greater in 2011 than 2009/10.

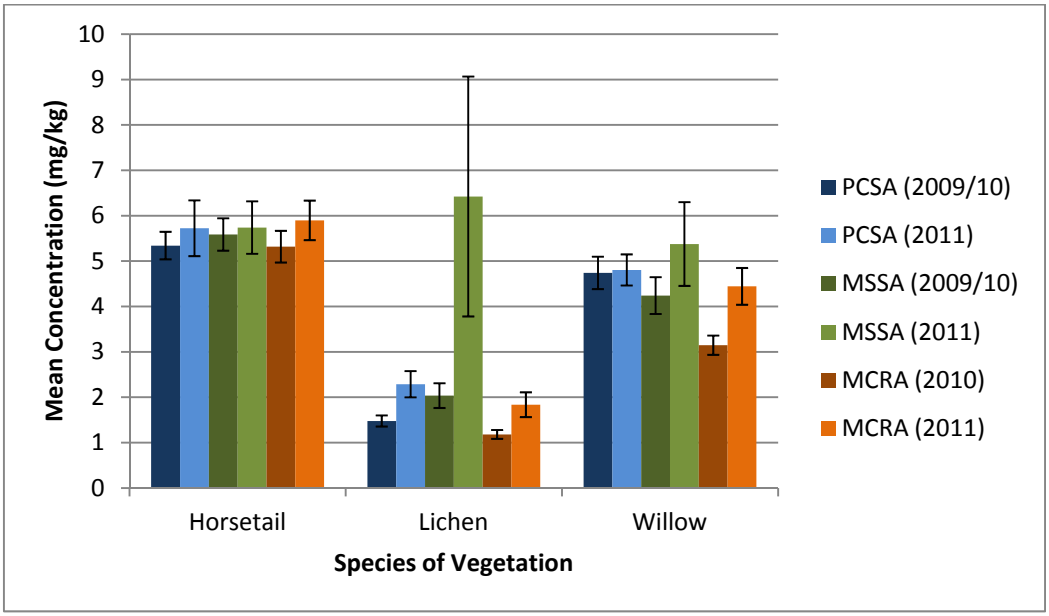

Figure 3-17: Comparison of mean total copper concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.4 Lead Results

The mean total lead concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-18. Statistical comparisons revealed that in 2011, the mean total lead concentration was significantly greater in the MSSA than the PCSA for both Horsetail and Willow. MSSA Willow mean lead concentrations were significantly higher than MCRA mean concentration, similar to the baseline sampling period (2009/10). When the three study areas were compared between sampling periods, it was found that the PCSA mean lead concentration was significantly greater for all three vegetation species examined. Although the graphical presentation (in Figure 3-18) does not seem to illustrate such a difference, the variability among the data is very small, meaning that the concentration found in a given species is very stable/consistent between sampling sites. The mean lead concentrations in the MSSA were significantly higher in 2011, but only for Horsetail and Lichen. Finally, while mean lead concentrations were higher for all species in the 2011 sampling period, statistical comparisons revealed that only in Willow was it significantly higher.

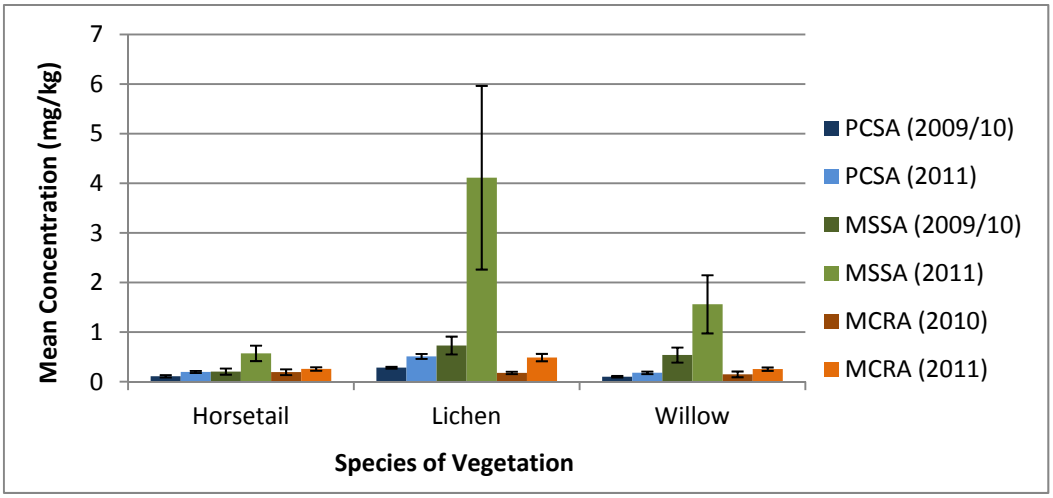

Figure 3-18: Comparison of mean total lead concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.5 Nickel Results

The mean total nickel concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-19. Statistical comparisons showed that the Lichen mean total nickel concentration was significantly lower in the MCRA than the PCSA, a result that was also observed in 2009/10. Also, the MCRA Horsetail mean nickel concentration was significantly greater 2010 than in 2011, which likely indicates natural variability from year to year.

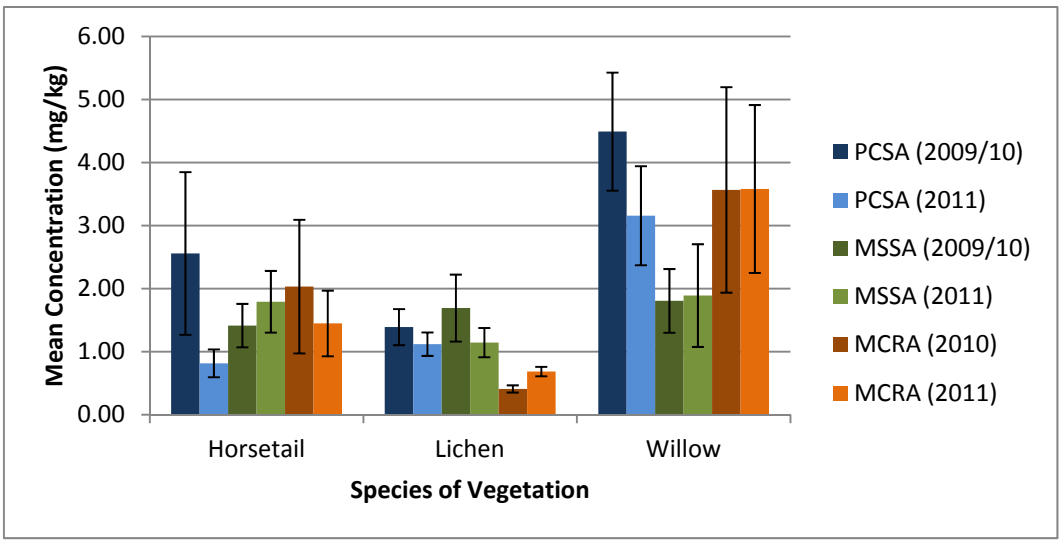

Figure 3-19: Comparison of mean total nickel concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.6 Selenium Results

The mean total selenium concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-20. Statistical comparisons for mean total selenium concentrations revealed no significant differences between the study areas for any of the three vegetation species. However, as found in 2010, the

MSSA Horsetail mean total selenium concentrations were much higher than the mean concentrations in the PCSA (16.3x higher), and the MCRA (8.3x higher). This higher mean was due to three sample stations in the MSSA having much higher concentrations (i.e., one order of magnitude) than the other 8 stations sampled within the MSSA, causing a high variance among the data. A statistical difference, therefore, could not be found between MSSA and the other two study areas because of such a high variance. When the three study areas were compared between sampling periods, it was found that MSSA Lichen selenium concentrations were significantly greater in the 2011 than baseline (2009/10) concentrations.

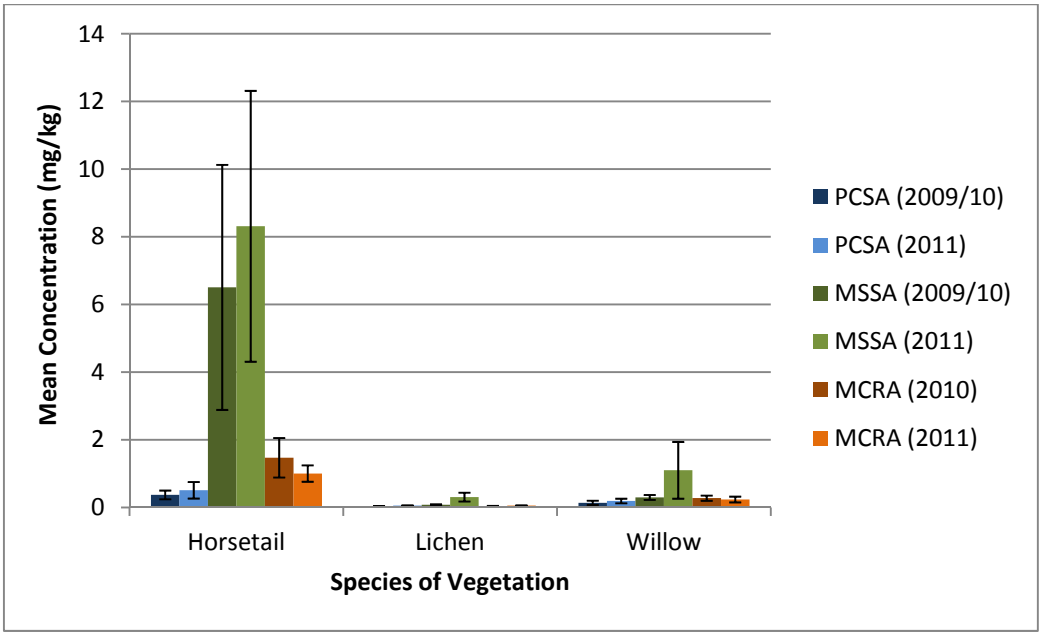

Figure 3-20: Comparison of mean total selenium concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.2.7 Zinc Results

The mean total zinc concentrations for Lichen, Horsetail and Willow within each area (MSSA, PCSA, and MCRA) for each sampling period (2009/10 and 2011) are presented in Figure 3-21. Statistical comparisons revealed that the Lichen mean total zinc concentration was significantly lower in the PCSA than MCRA, a finding that differed from the baseline results. When the three study areas were compared between sampling periods, it was found that PCSA Lichen zinc concentrations were significantly greater in 2011 than baseline samples concentrations.

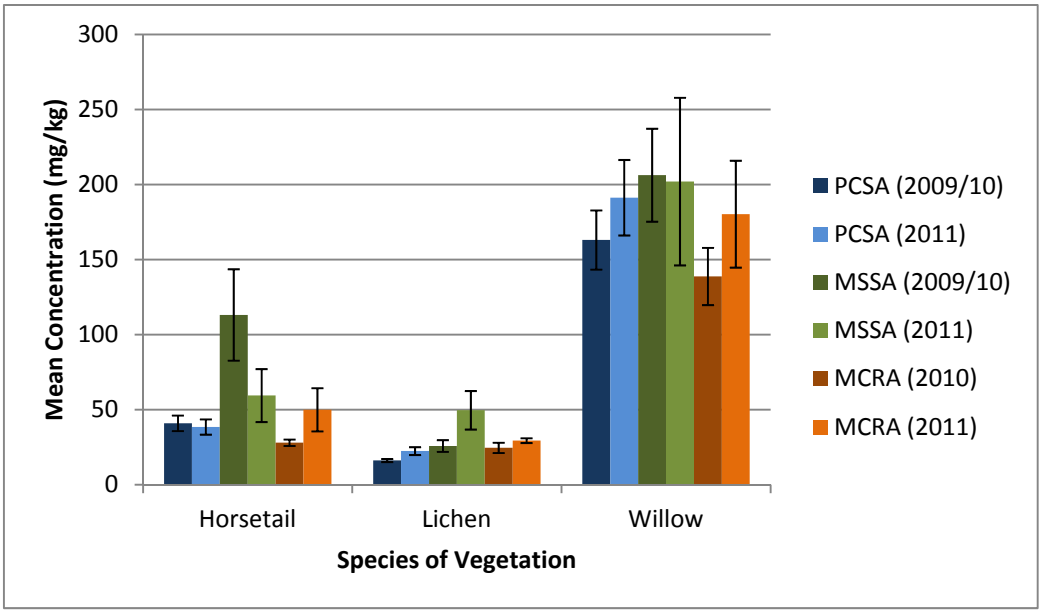

Figure 3-21: Comparison of mean total zinc concentrations (with standard error bars) for Horsetail, Lichen and Willow species among the three study areas.

3.4.3 Quality Assurance / Quality Control Results

Triplicate samples were collected for 12 of the 101 (>10%) vegetation samples during the 2011 sampling program for Quality Assurance/Quality Control (QA/QC) purposes. A stratified-random sampling approach was employed, where a triplicate was collected within each study area for a given vegetation type (except for Lichen in the PCSA) but was also randomly selected within each strata grouping (see Table 3-7 for sample distribution in 2011). This ensured an even distribution of triplicates across the various study areas and vegetation types, while avoiding bias toward sampling at a more desirable/convenient sampling location within a given study area.

Table 3-7: QA/QC sample distribution 2011

	QA/QC samples per monitoring samples taken (#QA/QC samples/# monitoring samples)		
Study Area	**MSSA**	**PCSA**	**MCSA**
Lichen	2/10	0/10	2/10
Horsetail	1/11	1/12	2/12
Willow	1/12	1/12	2/12

A summary of standard deviations calculated from triplicate samples for Willow, Horsetail and Lichen collected in 2011 is provided in Table 3-8, Table 3-9, and Table 3-10, respectively. Values less than detection were taken to be the detection limit when calculating the standard deviation.

(i.e., values are less than one and a half, and close to the mean). The one exception was zinc, which resulted in a standard deviation as high as 44.67. The results for six out of seven parameters of concern (i.e., arsenic, cadmium, copper, lead, nickel and selenium) had low standard deviations. Zinc had much higher standard deviations, indicating high variability between the samples. However, overall, the results indication a high consistency for the sampling technique and analysis replicability.

Table 3-8: QA/QC results for Willow (*Salix planifolia*) for the potential parameters of concern 2011

Sample ID's	Sample Date	Arsenic	Cadmium	Copper	Lead	Nickel	Selenium	Zinc
		Standard Deviation						
2011-PC3-SALI-STN1-A, -B, & -C	19/08/2011	0	0.84	0.10	0.01	0.16	0.00	27.51
2011-MS5-SALI-STN2-A, -B, & -C	15/08/2011	0	0.14	0.06	0.03	0.07	0.02	13.05
2011-MC1-SALI-STN1-A, -B, & -C	21/08/2011	0	0.36	0.63	0.03	0.73	0.01	12.53
2011-MC3-SALI-STN3-A, -B, & -C	22/08/2011	0	1.07	0.59	0.04	0.07	0.05	12.56
Ave. Stan. Dev.		**0***	**0.60**	**0.34**	**0.03**	**0.26**	**0.02**	**16.41**
No. of Samples		**4**	**4**	**4**	**4**	**4**	**4**	**4**

*All values for arsenic were below the detection limit, accounting for a zero standard deviation

Table 3-9: QA/QC results for Horsetail (*Equisetum arvense*) for the potential parameters of concern

Sample ID's	Sample Date	Arsenic	Cadmium	Copper	Lead	Nickel	Selenium	Zinc
		Standard Deviation						
2011-PC3-EQUI-STN1-A, -B, & -C	19/08/2011	0.02	5.03	2.01	0.03	1.52	0.01	160.68
2011-MS4-EQUI-STN6-A, -B, & -C	15/08/2011	0.45	0.28	1.55	0.64	1.76	3.15	12.01
2011-MC1-EQUI-STN4-A, -B, & -C	21/08/2011	0.00	0.03	0.41	0.02	0.17	0.16	1.79
2011-MC3-EQUI-STN3-A, -B, & -C	22/08/2011	0.00	0.14	0.36	0.02	0.04	0.13	4.22
Ave. Stan. Dev.		**0.12**	**1.37**	**1.09**	**0.18**	**0.87**	**0.86**	**44.67**
No. of Samples		**4**	**4**	**4**	**4**	**4**	**4**	**4**

Table 3-10: QA/QC results for Lichen (*Cladina stellaris*) for the potential parameters of concern 2011

Sample ID's	Sample Date	Arsenic	Cadmium	Copper	Lead	Nickel	Selenium	Zinc
		Standard Deviation						
2011-MS2-CLAD-STN5-A, -B, & -C	15/08/2011	0.09	0.02	0.60	0.34	0.24	0.03	1.85
2011-MC1-CLAD-STN5-A, -B, & -C	21/08/2011	0.03	0.02	0.19	0.25	0.06	0.00	6.10
Ave. Stan. Dev.		**0.06**	**0.02**	**0.40**	**0.29**	**0.15**	**0.02**	**3.98**
No. of Samples		**2**	**2**	**2**	**2**	**2**	**2**	**2**

3.4.4 2011 Summary of Metals in Vegetation Results

In general, the 2011 data identified various significant differences between metal concentrations in vegetation species. For example, willow and horsetail lead concentrations were greater in the MSSA than the PCSA, and willow lead concentrations were greater in the MSSA than the MCRA. Lichen arsenic concentrations were greater in the PCSA and MSSA than the MCRA, whereas lichen zinc concentrations were greater in the MCRA than in the PCSA. Overall, in 2011 the MSSA had higher mean metal concentrations than the other two study areas, which is comparable to baseline results which indicate the same. Also, 2011 data indicated fewer significant differences between vegetation types than the baseline data.

When comparing between sampling periods directly, many of the Lichen mean metal concentrations were found to be significantly greater in 2011 than baseline concentrations (specifically for As, Cu, Pb, Se, and Zn). However, these higher concentrations were consistent for all three study areas (including the reference study area MCRA) meaning that such differences are occurring naturally with time, and not due to an impact from mining operations. In contrast, the mean lichen nickel concentrations were significantly higher in the baseline samples than in 2011 samples.

In contrast to Lichen, Horsetail and Willow 2011 metal concentrations were comparable to baseline concentration, with only lead concentrations significantly greater in the 2011 samples than the baseline samples.

3.5 Small Mammals Metals Program

As prescribed in the Wildlife Protection Plan, data collection for the small mammal metals levels monitoring program was continued in July 2011. Small mammal samples were trapped and collected according to the methods outlined in WPP Appendix G.

The dissections consisted of placing the organism on a clean cutting board and making a lateral incision to open the chest and abdomen. The liver and kidneys were then removed and placed in separate, pre-weighed containers. After removing the liver and kidneys the skin was removed from the lower part of the organism and muscle tissue was taken from the rear legs and back. If more sample was required, additional muscle was taken from the forelimbs. On some of the smaller animals the limbs were removed entirely to facilitate muscle tissue removal. Following tissue removal, containers were re-weighed to determine weight of tissue.

To minimize contamination risks at the lab, the use of metal tools was avoided whenever possible, and alternatives such as plastic forceps and plastic scalpels with stainless steel blades were used. Blades were changed as needed, especially during dissection of different species and sampling sites. Organisms were dissected on clean polymer cutting boards and a clean cutting board surface was used for each organism. Forceps and scalpels were washed with deioionized water between each organism and cutting boards were washed with Extran soap and deionized water after every organism.

The samples were digested in a nitric acid/hydrogen peroxide/hydrochloric bath which eradicates the organic matrix and dissolves the metals in the sample. The remaining solution was analyzed by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) and Inductively Coupled Plasma Mass Spectroscopy (ICP-MS). Small mammal samples were analyzed for 30 elements at the specified laboratory Reportable Detection Limits (RDLs) outlined in Table 3-11. The identified metals of concern selected for statistical analysis are arsenic, copper, lead, nickel, selenium, cadmium, and zinc.

Table 3-11: Total metal analysis parameters with reportable detection limits

Element	Symbol	RDL (mg/kg)	Element	Symbol	RDL (mg/kg)	Element	Symbol	RDL (mg/kg)
Aluminum	Al	0.2	**Copper**	Cu	0.01	**Silver**	Ag	0.004
Antimony	Sb	0.001	**Iron**	Fe	2	**Sodium**	Na	2
Arsenic	As	0.01	**Lead**	Pb	0.002	**Strontium**	Sr	0.02
Barium	Ba	0.02	**Magnesium**	Mg	2	**Thallium**	Tl	0.0004
Beryillium	Be	0.02	**Manganese**	Mn	0.02	**Tin**	Sn	0.02
Bismuth	Bi	0.02	**Mercury**	Hg	0.01	**Titanium**	Ti	0.2
Boron	B	0.4	**Molybdenum**	Mo	0.002	**Uranium**	U	0.0004
Cadmium	Cd	0.002	**Nickel**	Ni	0.01	**Vanadium**	V	0.04
Calcium	Ca	2	**Phosphorus**	P	2	**Zinc**	Zn	0.04
Chromium	Cr	0.04	**Potassium**	K	2			
Cobalt	Co	0.004	**Selenium**	Se	0.01			

3.5.1 2011 Sampling Schedule, Distribution and Analysis

The same transect locations that were used in 2009 were used in 2011; except for PCSA-02, PCSA-04, and PCSA-05, which had a trap success of 5% or lower in 2009 (see Table 3-10), and were hence taken out of the 2011 sampling program. Table 3-12 summarizes the coordinates for the Points of Commencement (POC) and Points of Termination (POT) for each transect, as well as the transect lengths and sampling dates. A map of all the sites can be found in the *2009 WPP Annual Report*.

Table 3-12: Small mammal transect summary and sampling schedule

Study Area	Transect ID	POC		POT		Transect Length	2011 Sampling Schedule		
		Easting	Northing	Easting	Northing	(m)	Start Date	End Date	Trap Nights
MCRA	MCRA-04	443220	6805681	443394	6805169	600	10-Jul-12	13-Jul-12	4
	MCRA-05	443120	6805307	442996	6805543	300	10-Jul-12	13-Jul-12	4
MSSA	MSSA-01	442583	6808559	442658	6808682	150	15-Jul-12	18-Jul-12	4
	MSSA-02	441552	6808807	441645	6808694	150	15-Jul-12	18-Jul-12	4
	MSSA-03	438238	6812491	438290	6812641	150	15-Jul-12	18-Jul-12	4
	MSSA-04	438967	6811245	439045	6811168	150	15-Jul-12	18-Jul-12	4
	MSSA-05	440576	6810049	440476	6810162	150	15-Jul-12	18-Jul-12	4
	MSSA-06	439318	6811289	439372	6811427	150	15-Jul-12	18-Jul-12	4
PCSA	PCSA-01	443561	6806334	443654	6806219	150	21-Jul-12	24-Jul-12	4
	PCSA-02	446850	6806192	446752	6806226	150	*	*	0
	PCSA-03	448680	6809207	448616	6809323	150	21-Jul-12	24-Jul-12	4
	PCSA-04	450523	6813470	450610	6813593	150	*	*	0
	PCSA-05	452075	6816515	452048	6816664	150	*	*	0
	PCSA-06	452848	6818635	452799	6818491	150	21-Jul-12	24-Jul-12	4

*Trapping not conducted at these locations due to poor trap success (≤5%) during 2009

The trapping program yielded seven different small mammal species, which are listed in Table 3-13. Whole body analyses were performed on the Redback Vole, Masked Shrew, and the Arctic Shrew specimens. An organ specific analysis of kidney, liver and muscle tissues were performed on the Redback Vole, Meadow Vole, Siberian Lemming, and Jumping Mouse specimens.

Table 3-13: Summary of small mammal species collected in the three study areas (MCRA, MSSA and PCSA) and the laboratory analysis performed

Species Code	Species	Analysis	MCRA	MSSA	PCSA
CLRU	Redback Vole (*Clethrionomys rutilus*)	Whole Body	15	15	15
		Kidney/Liver/Muscle	10	38	39
MIPE	Meadow Vole (*Microtus pennsylvanicus*)	Whole Body	0	0	0
		Kidney/Liver/Muscle	13	3	11
LESI	Siberian Lemming (*Lemmus sibiricus*)	Whole Body	0	0	0
		Kidney/Liver/Muscle	12	0	0
ZAHA	Jumping Mouse (*Zapus hudsonius)*	Whole Body	0	0	0
		Kidney/Liver/Muscle	3	1	0
SOCI	Masked Shrew (*Sorex cinereus*)	Whole Body	27	4	8
		Kidney/Liver/Muscle	0	0	0
SOMO	Dusky Shrew (*Sorex obscurus*)	Whole Body	3	2	0
		Kidney/Liver/Muscle	0	0	0
SOAR	Arctic Shrew (*Sorex articus*)	Whole Body	2	0	0
		Kidney/Liver/Muscle	0	0	0

Statistical comparisons using Analysis of Variance (ANOVA) were made to determine if significant differences in the mean metal concentrations exist between study areas within each species. When making comparisons, a 95% confidence value ($\alpha = 0.05$) was used. The results of the ANOVA tests are summarized in Appendix D, to support the graphs generated for each metal type examined. For statistical and graphing purposes, parameters that were below the detection limit were taken as equal to the detection limit.

3.5.2 2011 Methodology for Metals Analysis and Determining Sample Size for the Redback Vole

The relative abundance of the Redback Vole (compared to other vole/shrew species previously captured in 2009) across all three study areas, coupled with the species' importance in the region as a first level consumer, demonstrates a good bio-marker for the purposes of this and future studies. This species was therefore selected as the focal point of the Small Mammals Metals Program, and the sampling effort was adjusted accordingly to ensure robust statistical comparisons could be made, whilst minimizing unnecessary environmental impact.

As expected, Redback Vole specimens were obtained in the highest abundance throughout each of the study areas. In total there were eighty-eight specimens collected, with a relatively even distribution among the study areas (see Table 3-10). In 2009, a similar abundance (142 in total) and distribution (25, 87, and 35 in MCRA, MSSA, and PCSA respectively) were collected; however, because the organ metal concentration analysis at the lab required compositing up to 8 individual organs, due to the low amount of tissue in the liver and kidney, the resulting sample size for making robust statistical comparisons between study areas was insufficient (e.g., in some instances only two kidney samples for a given study area). It was therefore decided that in

conjunction with organ specific analysis, 'whole body' analysis would also be conducted, to ensure a sufficient sample size to achieve robust statistical comparisons (between study areas and time periods). It was also determined with the lab that by diluting the organ samples from each specimen, they would not have to be composited to run the metals analysis. At the cost of slightly higher RDL values for certain metals (which did not compromise the results), this method effectively increased the sample size (for organs) to achieve suitable statistical comparisons. Also, as the 2009 results were not conducive to robust statistical analysis, the 2011 data cannot be compared to the 2009 data, and hence the 2011 data is presented in isolation in the figures and discussion below.

To determine a sufficient sample size for organ specific (i.e., liver, kidney and muscle) analysis, a power analysis was run prior to the 2011 small mammal trapping program using the 2009 small mammal organ data and an alpha value of 0.05 (i.e., 95% confidence). The result was that at least 9 samples (for organs) from each study area would provide a robust statistical comparison, but a sample size of 10 was selected to be conservative. Because whole body analysis was not conducted on the Redback Voles in 2009, a power analysis could not be run, so a conservative sample size of 15 was used for 2011. In total, the pre-determined minimum number of Redback Voles collected in each study area was set at 25, even if it took more than the recommended four trap nights to reach this number.

3.5.3 Total Metals in the Redback Vole: Whole Body

The mean total metal concentrations for whole body analysis on the Redback Vole within each study area are presented in Figure 3-22 for arsenic, cadmium, lead, nickel and selenium and Figure 3-23 for copper and zinc. The results of the statistical analysis revealed that arsenic, copper, lead and nickel mean concentrations were significantly greater in the MSSA than the MCRA. Statistical comparisons also indicated that mean cadmium and lead were significantly higher in the MSSA than the PCSA. Mean copper and nickel concentrations were significantly greater in the PCSA compared to the MCRA. Only zinc was shown to have the highest mean concentration in the MCRA, but the difference was not significant.

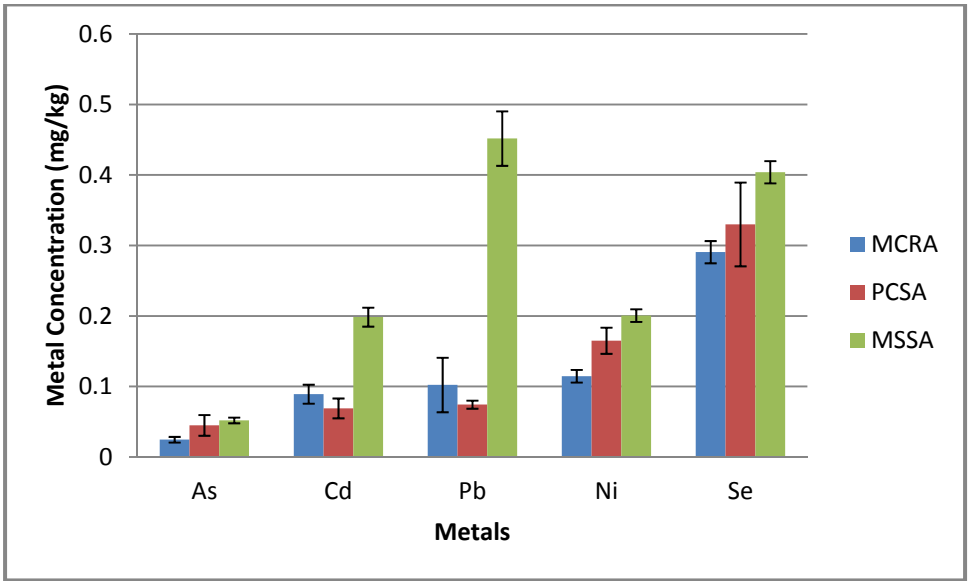

Figure 3-22: Comparison of mean metal concentrations for arsenic, cadmium, lead, nickel and selenium found in the whole body analysis of Redback Voles within the three study areas.

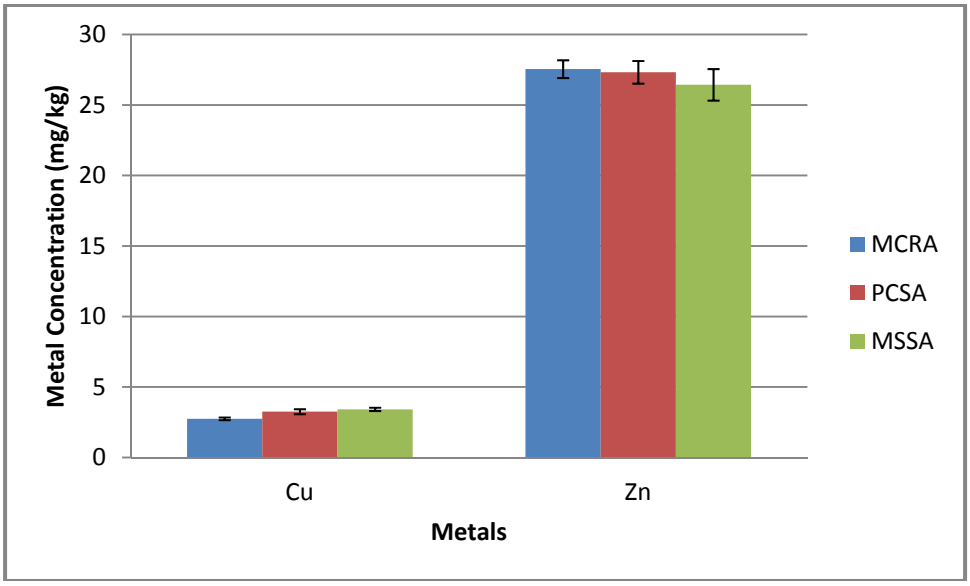

Figure 3-23: Comparison of mean metal concentrations for copper and zinc found in the whole body analysis of Redback Voles within the three study areas.

3.5.4 Total Metals in the Redback Vole: Kidney

The mean total metal concentrations for kidney analysis on the Redback Vole within each study area (are presented in Figure 3-24 for arsenic, cadmium, lead, nickel and selenium and Figure 3-25 for copper and zinc. The results of the statistical analysis revealed that lead and nickel mean concentrations were significantly greater in the MSSA than the MCRA. Also, the MSSA mean selenium concentration was significantly greater than in the PCSA.

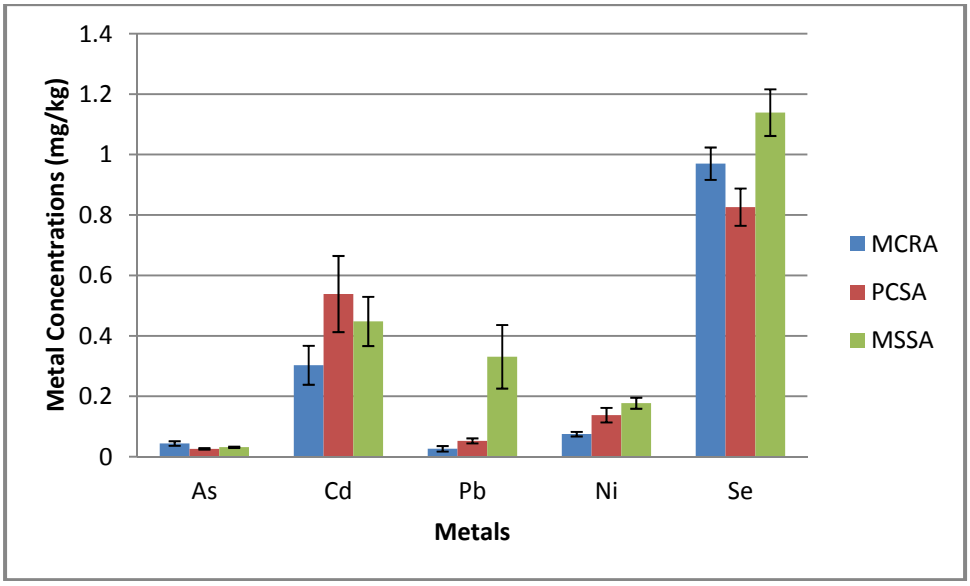

Figure 3-24: Comparisons of mean metal concentrations for arsenic, cadmium, lead, nickel, and selenium found in the kidney of Redback Voles

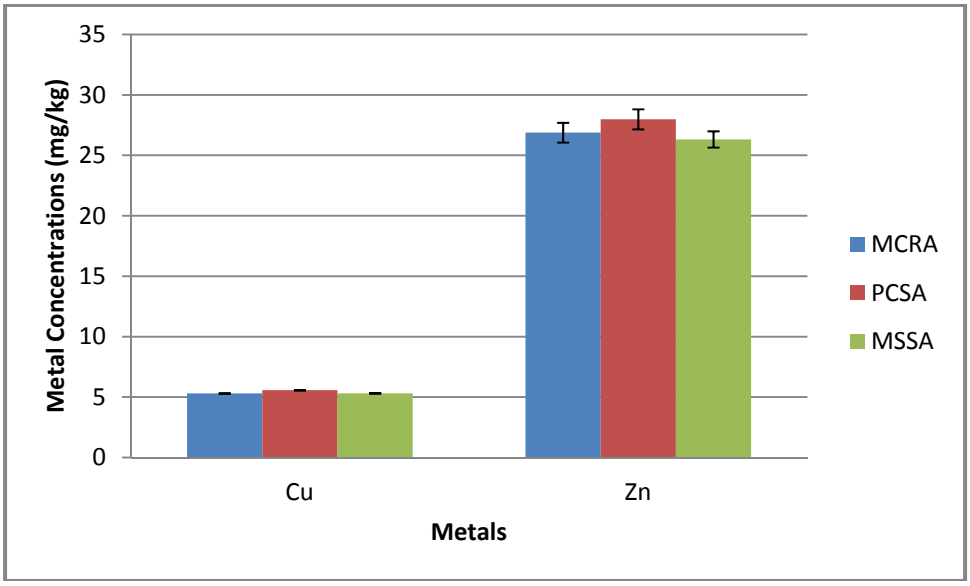

Figure 3-25: Comparisons of mean metal concentrations for copper and zinc found in the whole body of Redback Voles.

3.5.5 Total Metals in the Redback Vole: Liver

The mean total metal concentrations for liver analysis on the Redback Vole within each study area are presented in Figure 3-26 for arsenic, cadmium, lead, nickel and selenium and Figure 3-27 for copper and zinc. The results of the statistical analysis revealed that mean copper and selenium concentrations were significantly greater in the MSSA than the MCRA. Statistical comparisons also indicated that the mean lead and selenium concentrations were significantly greater in the MSSA than the PCSA. The mean copper concentration was also significantly greater in the PCSA than the MCRA. None of the metals showed mean concentrations higher in the MCRA when compared to the two survey areas.

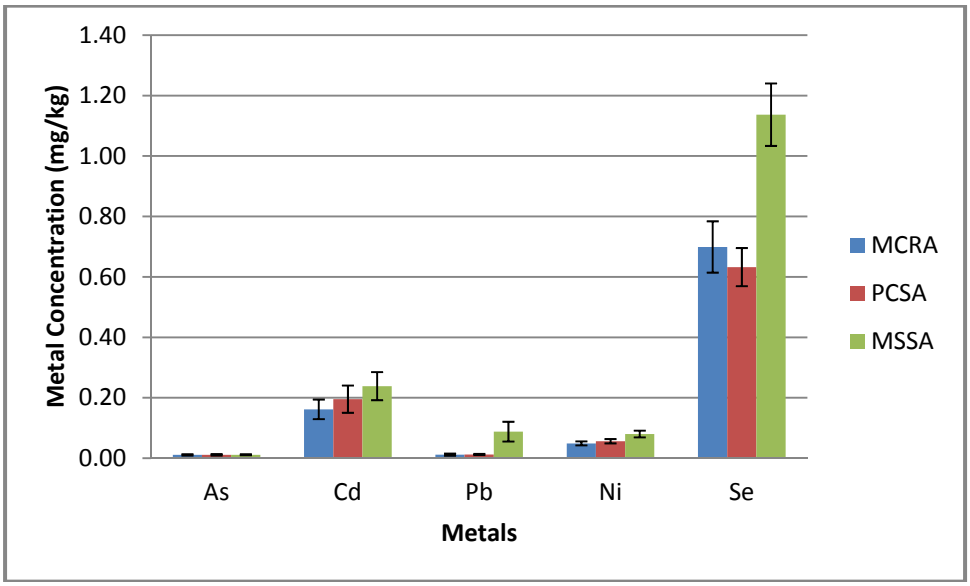

Figure 3-26: Comparisons of mean metal concentrations for arsenic, cadmium, lead, nickel, and selenium found in the liver of Redback Voles.

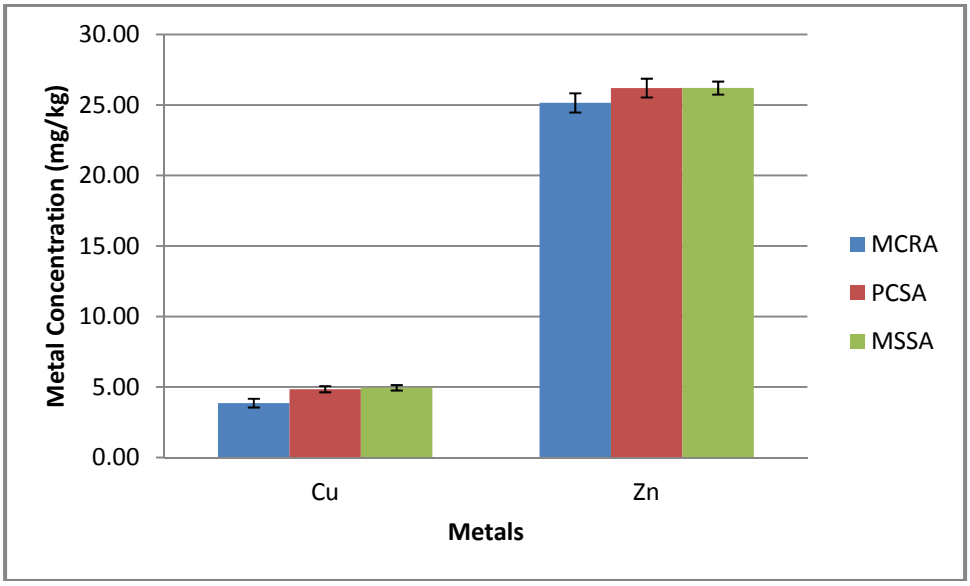

Figure 3-27: Comparisons of mean metal concentrations for copper and zinc found in the liver of Redback Voles.

3.5.6 Total Metals in the Redback Vole: Muscle Tissue

The mean total metal concentrations for muscle tissue analysis on the Redback Vole within each study area are presented in Figure 3-28 for arsenic, cadmium, lead, nickel and selenium and Figure 3-29 for copper and zinc. The results of the statistical analysis revealed that mean copper, nickel and selenium concentrations were significantly greater in the MSSA than the MCRA. The mean lead and selenium concentrations were significantly greater in the MSSA than the PCSA. The mean copper and nickel concentrations were also shown to be significantly greater in the PCSA than the MCRA. While both arsenic and zinc mean concentrations were higher MCRA than the two survey areas, the differences were not significant.

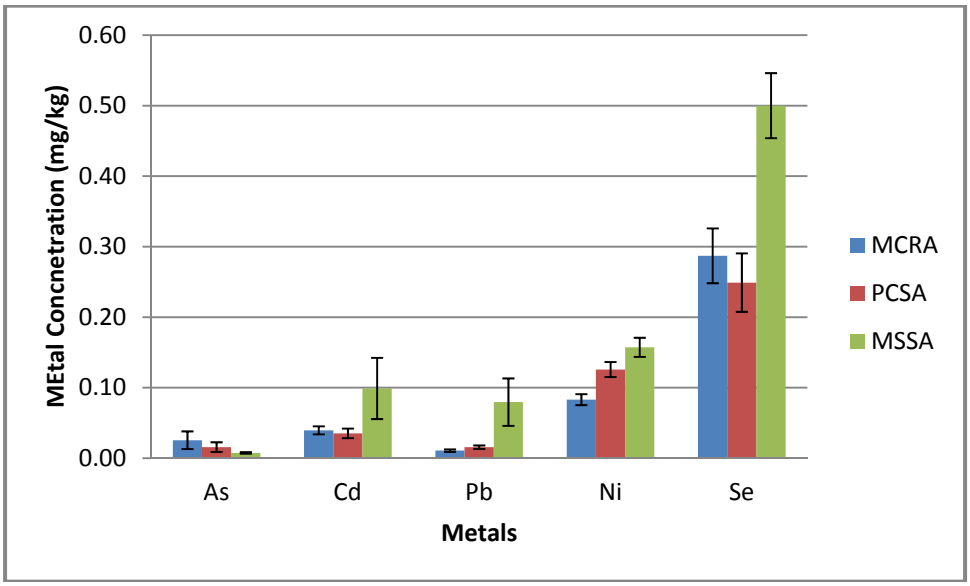

Figure 3-28: Comparisons of mean metal concentrations for arsenic, cadmium, lead, nickel, and selenium found in the muscle tissue of Redback Voles.

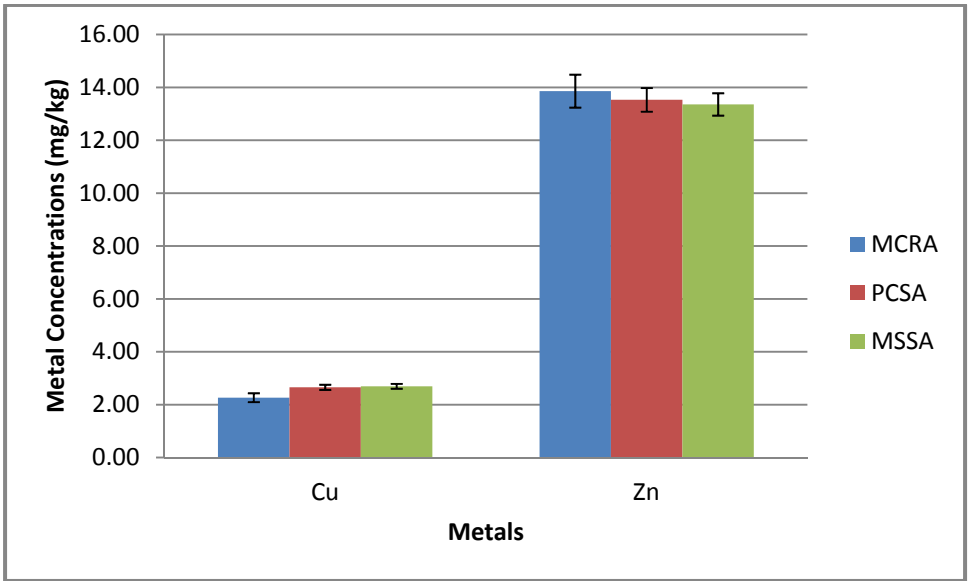

Figure 3-29: Comparisons of mean metal concentrations for copper and zinc found in the muscle tissue of Redback Voles.

3.5.7 Whole Body Analysis for the Shrew Species

Three species of shrew were obtained during the trapping program; the Arctic Shrew, Masked Shrew, and Dusky Shrew. The Masked Shrew was the only species obtained in all three study areas. Observations for the Masked Shrew presented in Table 3-14 show that in general, whole body mean metal concentrations were typically highest in the MCRA. Otherwise, the concentrations for the two other species were comparable between study areas.

Table 3-14: Summary of whole body mean metal concentrations (mg/kg) of three Shrew species among the three study areas.

	MCRA	MSSA	PCSA		MCRA	MSSA	PCSA
Arsenic				**Lead**			
Arctic	0.05	*	*	**Arctic**	0.05	*	*
Masked	0.04	0.05	0.05	**Masked**	0.05	0.04	0.04
Dusky	0.04	0.06	*	**Dusky**	0.12	0.07	*
Cadmium				**Selenium**			
Arctic	0.06	*	*	**Arctic**	6.36	*	*
Masked	0.12	0.06	0.08	**Masked**	1.57	1.31	0.78
Dusky	0.11	0.24	n/a	**Dusky**	1.31	1.16	*
Copper				**Zinc**			
Arctic	3.33	*	*	**Arctic**	31.85	*	*
Masked	3.45	3.29	3.39	**Masked**	29.48	30.55	25.78
Dusky	3.54	3.86	*	**Dusky**	30.67	15.28	*
Nickel							
Arctic	0.05	*	*				
Masked	0.05	0.04	0.04				
Dusky	0.12	0.07	*				

*No specimens collected

3.5.8 Organ Specific Analysis for the Jumping Mouse, Meadow Vole, and Siberian Lemming

Kidney, liver, and muscle tissue analysis were conducted on the Jumping Mouse, Meadow Vole, and Siberian Lemming species collected from the study areas, and a summary is presented in Table 3-15. The Meadow Vole was the only species which was obtained in all three study areas. Due to insufficient data (i.e., low sample size), statistical analysis could not be performed, and hence no significant information could be derived from Table 3-15.

Table 3-15: Summary of organ specific mean metal concentrations (mg/kg) in the Jumping Mouse, Meadow Vole and Siberian Lemming among the three study areas.

	Kidney			Liver			Muscle Tissue		
	MCRA	PCSA	MSSA	MCRA	PCSA	MSSA	MCRA	PCSA	MSSA
	Arsenic			Arsenic			Arsenic		
Jumping Mouse	0.08	*	0.04	0.06	*	0.02	0.03	*	0.01
Meadow Vole	0.06	0.05	0.03	0.03	0.03	0.01	0.03	0.04	0.01
Siberian Lemming	0.07	*	*	0.02	*	*	0.01	*	*
	Cadmium			Cadmium			Cadmium		
Jumping Mouse	0.10	*	0.26	0.05	*	0.15	0.01	*	0.08
Meadow Vole	0.38	0.62	1.18	0.07	0.28	0.22	0.02	0.05	0.06
Siberian Lemming	1.45	*	*	0.31	*	*	0.09	*	*
	Copper			Copper			Copper		
Jumping Mouse	4.3	*	4.3	4.45	*	4.21	2.54	*	2.38
Meadow Vole	5.04	5.02	5.68	3.97	4.47	4.86	2.13	2.06	2.29
Siberian Lemming	4.04	*	*	2.86	*	*	1.74	*	*
	Lead			Lead			Lead		
Jumping Mouse	0.21	*	0.26	0.11	*	0.02	0.04	*	0.01
Meadow Vole	0.01	0.03	0.04	0.01	0.01	0.01	0.01	0.01	0.03
Siberian Lemming	0.01	*	*	0.01	*	*	0.01	*	*
	Nickel			Nickel			Nickel		
Jumping Mouse	0.15	*	0.21	0.17	*	0.18	0.12	*	0.23
Meadow Vole	0.12	0.09	0.13	0.06	0.04	0.05	0.12	0.12	0.19
Siberian Lemming	0.07	*	*	*	*	*	0.06	*	*
	Selenium			Selenium			Selenium		
Jumping Mouse	0.98	*	1.18	0.72	*	1.08	0.33	*	0.53
Meadow Vole	1.01	0.66	0.87	0.87	0.43	0.48	0.34	0.13	0.18
Siberian Lemming	1.12	*	*	0.69	*	*	0.31	*	*
	Zinc			Zinc			Zinc		
Jumping Mouse	23.5	*	28.2	28.43	*	28.5	14.13	*	12.9
Meadow Vole	24.56	23.93	25.87	25.79	25.90	27.6	12.57	13.08	13.33
Siberian Lemming	23.23	*	*	23.40	*	*	11.83	*	*

*No specimens collected

3.6 Tailings Facility Monitoring

Bird surveys were conducted during the spring and fall 2011 at the Tailings Facility monitoring station and the three reference stations (Piper Lake, Little Wolverine Lake, and Johnson Jules Lake), as prescribed in the *Wildlife Protection Plan*. Johnson Jules Lake is a newly added reference station that was proposed in the *2010 WPP Annual Report*. This Lake was selected based on the same criteria that were used to select the other two reference stations with the Wildlife Technical Committee:

- Size and shape of wetland area;
- Vegetation characteristics;
- Accessibility to the site (i.e., within ~500 m from the Access Road); and,
- Availability of an adequate observation vantage point.

Johnson Jules Lake closely resembles the size and shape of the Tailings Facility, and has been known to host migratory bird species, and was thought to add value to the monitoring program. Table 3-16 describes the vegetation characteristics of the Tailings Facility Monitoring Station and the three Reference Stations, and Figure 3-30 provides a map of their respective locations.

Table 3-16: Location description and vegetation characteristics of the Tailings Facility Monitoring Station and the 3 Reference Stations

Station	Stn. No.	Station Vegetation Characteristics											Comments
		Location Coordinates		Total Vegetation % Cover	Tree Layer		Shrub Layer		Forb Layer		Ground % Cover	Water % Cover	
		Easting	Northing		% Cover	Species	% Cover	Species	% Cover	Species			
Tailings Facility	TRP-1	442737	6808318	**5**	35	Spruce dominated	35	Willow dominated	30	Horsetail dominated	**15**	**80**	TRP-1 = Tailings Reference Point, where a photo will be taken every season moving forward
	BSS-1	442565	6808482	**5**	35	Spruce dominated	35	Willow dominated	30	Horsetail dominated	**15**	**80**	BSS-1 = Bird Survey Station #1
Piper Lake	BRS-1	450595	6810685	**30**	20	Spruce dominated	40	Willow dominated	40	Lichen dominated on slopes, Horsetail dominated near waters edge	**0**	**70**	BRS-1 = Bird Reference Station #1
Little Wolverine Lake	BRS-2	437422	6812159	**20**	30	Spruce dominated with some stands of Poplar	40	Buckbrush and Willow dominated	30	Even distribution of Hudson Bay, Blueberry, Lichen, and horsetail	**5**	**75**	BRS-1 = Bird Reference Station #2
Johnson Jules Lake	BRS-3	450939	6814248	**10**	30	Spruce dominated with some stands of Poplar	50	Buckbrush and Willow dominated	20	mainly grass moss	**5**	**85**	BRS-1 = Bird Reference Station #3

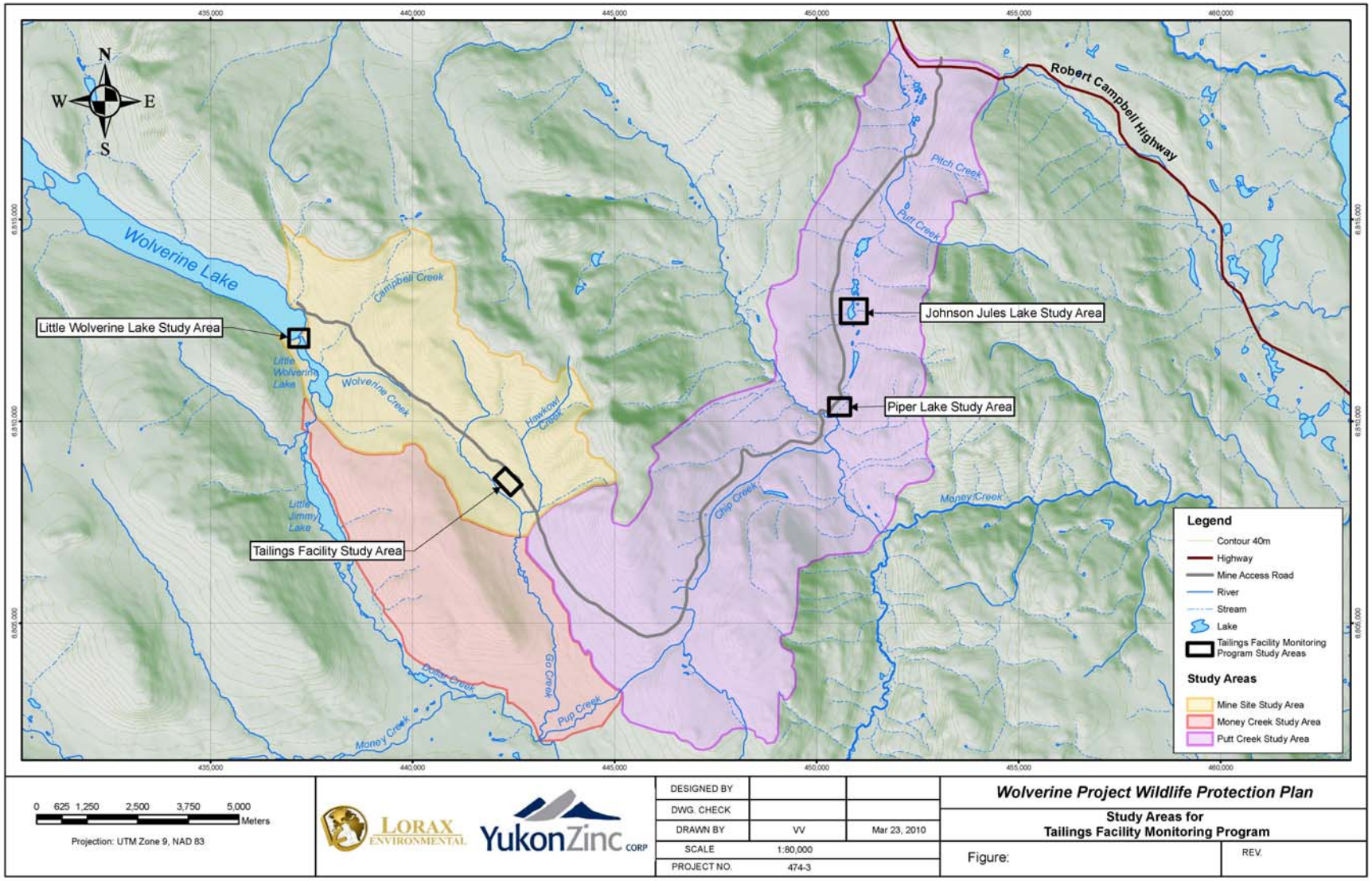

Figure 3-30: Location of Tailings Study Area, Piper Lake Study Area, Little Wolverine Lake Study Area and Johnson Jules Lake Study Area

The results from the bird surveys are summarized in Table 3-17 (Tailings Facility), Table 3-18 (Piper Lake), Table 3-19 (Little Wolverine Lake), and Table 3-20 (Johnson Jules Lake). In contrast to the surveys conducted in 2010, species of migratory waterfowl were observed occupying the area surrounding the Tailings Facility. On separate occasions in the spring, the following species were observed in the water: Mallard, Barrow's Golden Eye, and Greater Scaup. Fortunately, the birds were easily deterred by shooting off bear bangers into the air on each occasion. To further prevent birds from occupying the facility, two 'Birds of Prey' were installed: one on the pump barge near the surface of the water, and the other at the top of one of the tall beams located along the upper rim used to anchor the pump barge. These deterrent devices were successful, as no other birds were observed occupying the Tailings Facility area during the rest of the spring, as well as in the fall.

The number of surveys conducted at each station varied considerably due to the accessibility limitations, with the Tailings Facility and Piper Lake receiving the most surveys (9 and 10, respectively), and Johnson Jules Lake and Little Wolverine Lake receiving the least (5 and 6, respectively). The number of species observed at each station also varied: 7, 13, 12, and 9 at the Tailings Facility, Piper Lake, Little Wolverine Lake and Johnson Jules Lake, respectively. Similar waterfowl species were observed occupying the various stations, but only two species were observed at all four: Mallard and Greater Scaup. In general, the total number of birds observed at the four stations did not vary considerably; Piper Lake only had an estimated 2052 birds observed since a number of large Sandhill Crane flocks were recorded during the survey.

Table 3-17: Summary of 2011 results from the bird surveys conducted at the Tailings Facility Monitoring Station

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
May 2 (Dawn)	BSS-1	605	Mallard (*Anas platyrhynchos*)		2			Observed walking on ice
May 7 (Dawn)	BSS-1	530	Mallard (*Anas platyrhynchos*)	4		31		Observed flying above pond and were deterred
	BSS-1	550	Mew Gull (*Larus canus*)			4		Observed in area
	BSS-1	550	Boneparts Gull (*Larus philadelphia*)			2		Observed in area
	BSS-1	604	Mallard (*Anas platyrhynchos*)			9		Attempting to land in pond and were deterred
	BSS-1	631	Barrow's Goldeneye (*Bucephala islandica*)	1	1			Landed in pond and were deterred
	BSS-1	650	Common Raven (*Corvus corax*)			1		Observed in area
May 7 (Dusk)	BSS-1	2141	Mew Gull (*Larus canus*)			3		Observed in area then deterred
	BSS-1	2155	Northern Pinetail (*Anas acuta*)			1		Observed in area then deterred
May 16 (Dawn)	BSS-2	730	Greater Scaup (*Aythya marila*)	7	3			Observed in pond and were deterred
May 24 (Dawn)	BSS-1	730						No birds observed

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
May 25 (Dawn)	BSS-1	730						No birds observed
Sept. 11 (Dawn)	BSS-1	700						No birds observed
Sept. 20 (Dawn)	BSS-1	800						No birds observed
Sept. 26 (Dawn)	BSS-1	930						No birds observed
Total				**12**	**6**	**51**	**0**	**69**

Table 3-18: Summary of 2011 results from the bird surveys conducted at the Piper Lake Reference Station

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
May 3 (Dawn)	BRS-1	820	Savannah Sparrow (*Passerculus sandwichensis*)			1		Observed in area
	BRS-1	847	Gray Jay (*Perisoreus canadensis*)			2		Observed in area
May 3 (Dusk)	BRS-1	2045	Sandhill Crane (*Grus canadensis*)			65		Flying over-head
May 8 (Dawn)	BRS-1	600	Mallard (*Anas platyrhynchos*)	2	2			Wading in pond
	BRS-1	616	Gray Jay (*Perisoreus canadensis*)			1		Observed in area
	BRS-1	638	American Robin (*Turdus migratorius*)			1		Observed in area
May 8 (Dusk)	BRS-1	2005	Green-winged Teal (*Anas crecca*)	2	1			Wading in pond
	BRS-1	2020	Mallard (*Anas platyrhynchos*)	1	1			Wading in pond
	BRS-1	2020	Upland Sandpiper (*Bartramina longicauda*)			1		Observed in area
	BRS-1	2024	American Robin (*Turdus migratorius*)	1	1			Observed in area
	BRS-1	2036	Sandhill Crane (*Grus canadensis*)			500		Flying over-head
	BRS-1	2040	Sandhill Crane (*Grus canadensis*)			600		Flying over-head
	BRS-1	2042	Sandhill Crane (*Grus canadensis*)			400		Flying over-head

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
	BRS-1	2045	Sandhill Crane (*Grus canadensis*)			400		Flying over-head
	BRS-1	2047	Sandhill Crane (*Grus canadensis*)			70		Flying over-head
May 15 (Dawn)	BRS-1	740	Mallard (*Anas platyrhynchos*)	2	2		1	Wading in pond
	BRS-1	740	Sparrow sp.			2		Observed in area
	BRS-1	758	Lesser yellowlegs (*Tringa flavipes*)			1		Observed in area
	BRS-1	800	Woodpecker sp.			1		Heard pecking in area
	BRS-1	810	Lesser yellowlegs (*Tringa flavipes*)			2		Observed foraging
	BRS-1	813	Barrow's Goldeneye (*Bucephala islandica*)	1	1			Wading in pond
	BRS-1	814	Barrow's Goldeneye (*Bucephala islandica*)		2			Wading in pond
	BRS-1	817	Blackbird sp.			2		Observed in area
	BRS-1	840	Boneparts Gull (*Larus philadelphia*)			1		Observed in area
May 22 (Dawn)	BRS-2	900	Boneparts Gull (*Larus philadelphia*)			1		Observed in area
	BRS-2	910	Lesser yellowlegs (*Tringa flavipes*)			1		Observed foraging
Aug. 24 (Dawn)	BRS-1	740	Barrow's Goldeneye (*Bucephala islandica*)		1			Wading in pond
Sept. 11 (Dawn)	BRS-1	740						No birds observed
Sept. 19 (Dawn)	BRS-1	730	Greater Scaup (*Aythya marila*)	7	3			Wading and foraging
Sept. 24 (Dawn)	BRS-1	830						No birds observed
Total				**6**	**5**	**2041**	**0**	**2052**

Table 3-19: Summary of 2011 results from the bird surveys conducted at the Little Wolverine Reference Station

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
June 1 (Dawn)	BSS-1	535	Duck sp.			1		Too distant to identify species
	BSS-1	555	Northern Pinetail (*Anas acuta*)	1				Observed
	BSS-1	607	Mew Gull (*Larus canus*)			1		Observed and heard calling

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
Aug. 18 (Dawn)	BSS-1	800	Bald Eagle (*Haliaeetus leucocephalus*)			1		Observed flying and landing in a tree
	BSS-1	800	Canada Goose (*Branta canadensis*)			4		Observed wading in Lake
	BSS-1	800	Greater Scaup (*Aythya marila*)			23		Observed
	BSS-1	800	Sandhill Crane (*Grus canadensis*)			25		Flying high above Lake
	BSS-1	800	Common Loon (*Gavia immer*)			1		Heard calling
Aug. 28 (Dawn)	BSS-1	736	Common Loon (*Gavia immer*)	1	1			Observed and heard calling
	BSS-1	741	Red-breasted Merganser (*Mergus serrator*)	4				Observed
	BSS-1	752	Common Goldeneye (*Bucephala islandica*)		2			Observed
Sept. 12 (Dawn)	BSS-1	800	Common Loon (*Gavia immer*)			1		Observed and heard calling
	BSS-1	810	Greater Scaup (*Aythya marila*)			6		Observed
	BSS-1	815	Greater Scaup (*Aythya marila*)			25		Observed
	BSS-1	840	Mallard (*Anas platyrhynchos*)			4		Observed
	BSS-1	845	Bald Eagle (*Haliaeetus leucocephalus*)			1		Observed
	BSS-1	845	Sandhill Crane (*Grus canadensis*)			50		Observed flying high above Lake
Sept. 18 (Dawn)	BSS-1	1010	Canada Goose (*Branta canadensis*)			4		Observed flying over lake
	BSS-1	1021	Greater Scaup (*Aythya marila*)			19		Observed
	BSS-1	1030	Greater Scaup (*Aythya marila*)			4		Observed
	BSS-1	1000	Bald Eagle (*Haliaeetus leucocephalus*)			1		Observed perched in tree overlooking Lake
Oct. 2 (Dusk)	BSS-1	1300	Bald Eagle (*Haliaeetus leucocephalus*)	1			1	Observed
	BSS-1	1300	Trumpeter Swan (*Cygnus columbianus*)	2	2			Observed

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
	BSS-1	1300	Greater Scaup (*Aythya marila*)			17		Large Group observed
Total				**9**	**5**	**188**	**1**	**203**

Table 3-20: Summary of 2011 results from the bird surveys conducted at the Johnson Jules Lake Reference Station

				No. of Birds				
Date	**Stn. No.**	**Time (24 hour)**	**Species**	**Adult Female**	**Adult Male**	**Uncl. Adult**	**Juvenile**	**Comments**
May 23 (Dawn)	BRS-1	730	Trumpeter Swan (*Cygnus columbianus*)	1	1			Pair of swans wading in the water
	BRS-1	740	Barrow's Goldeneye (*Bucephala islandica*)	2	2			Wading in water
	BRS-1	745	Greater Scaup (*Aythya marila*)	10	10			Large group wading in water
	BRS-1	800	Duck sp.	2	2	6		Too distant to identify species
	BRS-1	820	Lesser yellowlegs (*Tringa flavipes*)			1		Foraging near bank
	BRS-1	830	Greater Scaup (*Aythya marila*)	1	1			2 more on observed on opposite side of Lake
	BRS-1	840	Greater Scaup (*Aythya marila*)	1	1			2 more observed came off the bank
Aug. 30 (Dawn)	BRS-1	800	Common Loon (*Gavia immer*)	1				Observed wading and calling
	BRS-1	805	Common Goldeneye (*Bucephala islandica*)		4			Observed
Sept. 11 (Dawn)	BRS-1	845	Greater Scaup (*Aythya marila*)		1		5	Observed
	BRS-1	845	Mallard (*Anas platyrhynchos*)	2				Observed
	BRS-1	855	Trumpeter Swan (*Cygnus columbianus*)	1	1			Same two as observed in spring
Sept. 19 (Dawn)	BRS-1	800	Trumpeter Swan (*Cygnus columbianus*)	1	1			Observed on far side of Lake
	BRS-1	800	Greater Scaup (*Aythya marila*)			13		Observed a large group at a distance
	BRS-1	800	Common Loon (*Gavia immer*)			1		Heard calling
Sept. 26 (Dawn)	BRS-1	800						No birds observed - majority of lake frozen over
Total				**22**	**24**	**21**	**5**	**72**

3.7 Regional Wildlife Monitoring Programs

In 2011, YZC contributed $10,000 to the Finlayson Caribou herd fall composition survey in the Ross River region conducted by Yukon Environment; reporting of the survey results are conducted by Yukon Environment and are not contained herein.

3.8 Monitoring Program Recommendations for 2011

Moving forward, it is recommended that the Redback Vole be considered as the bio-marker species for the Small Mammal Metals Program, since no other species was captured in an abundance that provided statistical robustness when comparisons were made. This will not only increase the efficiency of the effort made to carry out the program, but will help reduce the direct impact the research effort has on the environment, and is in line with one of the protection policies stipulated in the Wildlife Protection Plan.

4 Summary

In 2011 Yukon Zinc completed the following activities required by *Wildlife Protection Plan V2009-01* under *QML-0006*:

- Conducted incidental monitoring of wildlife in and around the Mine site;
- Conducted monitoring of winter wildlife transects from January – April, and from October – December;
- Established a new winter wildlife transect within the MCRA, to replace an old one that was deemed unsuitable for tracking and unsafe for traversing;
- Conducted vegetation sampling for willow, horsetail and lichen in the three study areas and subsequent analysis for metal concentrations to supplement the 2009 data set;
- Conducted small mammals sampling in the three study areas and subsequent metal concentration analysis to continue the Small Mammals Metals Program; and,
- Established a new bird survey reference station at Johnson Jules Lake to help enhance the Tailings Facility Monitoring Program, and conducted bird surveys during the spring and fall migration periods.

Appendix A

Wildlife Records Program - YZC 2011 Wildlife Log

Date	Time	Location	Species	# of Animals	Activity
1-Jan-11	1330	km 24.5	moose	2	cow and calf
2-Jan-11	2324	km 29	Fox	2	
13-Jan-11	1530	Km21	moose	1	
14-Jan-11	700	camp	fox	1	saw fox haven't seen in awhile
26-Jan-11	1100	exploration camp	bold eagle	2	went to expl. Camp
8-Feb-11	1400	Fuel Pad	Fox	1	blackish fox
10-Feb-11	430	Camp	Fox	1	tracks throughout camp sight
14-Feb-11	1300	KM 3	Moose	1	bolted into the trees
18-Feb-11		Km22	moose	1	cow moose on side of road
24-Feb-11	1230	Mag road	ptarmigan	10	
2-Mar-11	1000	Mill pad	Raven	1	Raven eating ptarmigan
8-Apr-11	2015	first aid	fox	1	
11-Apr-11	2130	ridge above mill	foxx	2	
12-Apr-11	300	power mag	Porcupine	1	
17-Apr-11	1939	26.2	fox	1	blackish fox
17-Apr-11	1959	burnpit rd	fox	1	red fox
19-Apr-11	300am	Safety office	Porcupine	1	under trailer
19-Apr-11	2048	burnpit rd	fox	1	
20-Apr-11	300	security	Porcupine	1	walking from underneath trailer
25-Apr-11	900	engineer office	chipmunk	1	
30-Apr-11	2320	km25	fox	1	
1-May-11	255	km25	Porcupine	1	
3-May-11	1100	burnpit rd	fox	1	walking around
3-May-11	828	pwr mag	Porcupine	1	tracks
4-May-11	1730	Above lake	cranes	~500	catching draft heading north
5-May-11	815	power mag	birds(geese?)	~250	flying information E>W over lake
5-May-11	900	K23	squirrel	1	ran across road
6-May-11	246am	pwr mag rd	mouse	1	walking road
7-May-11	445am	main camp	main camp	fox	poop at bottom of stairs dorm 5
8-May-11	235	power mag	main camp	fox	running along ridge bye dorm 4
8-May-11	2320	"	pwr mag	porcupine	running across road
8-May-11	2000	Bunker	Porcupine	1	walking on rocks by spill kit
9-May-11	1955	26.2	26.2 burnpit	fox	walking along last magB
9-May-11	2125	2125	mill	cranes	running into bush
9-May-11	2337	2337	burnpit	porcupine	running up road way
9-May-11	2339	2339	burnpit	fox	flock flying over NW direction
12-May-11	2153	2135	millpad	fox	walking road
12-May-11	2210	2210	main camp	fox	eatting garbage in burnpit
14-May-11	1400	27.3	Ducks	3	swimming in pond

Date	Time	Location	Species	# of Animals	Activity
14-May-11	1400	m21	caribou	2	side of road
14-May-11	2022	2022	27.2	ptarmagin	wandering
14-May-11	2300	2300	seapge pond	ducks	checking out trucks
14-May-11	2305	2305	ACL camp	ptarmagin	
14-May-11	2318	2318	pond beside	6 small	
15-May-11	1200	24.5	ptarmigan	1	calling
15-May-11	2250	2250	pwr mag rd	duck types	rooting beside road
16-May-11	2000	Camp	Fox	1	walking around
16-May-11	2000	Camp	fox	1	walking through camp
16-May-11	2030	lwr bypass	greziter	2	waddling across road
16-May-11	2030		green winged teal	3	side of road
16-May-11	130	130	power mag road	porcupine	waddling across road
16-May-11	350	350	pwr mag rd		side of road
16-May-11	659	659	talings		on pond
17-May-11	1700	km24.5	ducks	3	swimming in pond
17-May-11	2055	tailings	ducks	8	on water
17-May-11	1615	camp	chipmunk	1	running/sidewalk
17-May-11	1630	north hill side	eagle	1	circling/flying
17-May-11	2055	bypass rd	green winged teal	3	3males 2 females 6s feeding
17-May-11	2105	km29	red bird	1	pine grosbeak
17-May-11	2240	main camp	fox	1	checking out trucks
18-May-11	337	burn pit	Porcupine	1	wacking zelong ridge
18-May-11	353	24.75	Porcupine	1	walking on side of road
18-May-11	410	inside bypass	fox	1	hunting along treeline
18-May-11	2050	ponds lwr bypass	m&f green winged teal	2	
19-May-11	1400	km7	Moose	1	traveling on road
20-May-11	1900	Km22	Moose	1	walking up hill
20-May-11	1800	Km9	Porcupine	1	side of road
20-May-11	1830	Km2	porcupine	1	side of road
20-May-11	6pm	km3.5	caribou	2	on road
20-May-11	1935	S.lwr bypass	Porcupine	1	
21-May-11	1300	tailings	ducks	16	diving in pond
21-May-11	1230	km27.3	ducks	2	swimming in pond
21-May-11	4pm	air strip	caribou	1	running and feeding
21-May-11	57	power mag	Porcupine	1	
21-May-11	935am	incerator	wolverine	1	running in pound
22-May-11	1000	Camp	fox	1	walking around

Date	Time	Location	Species	# of Animals	Activity
23-May-11		Mas	moose	1	
23-May-11		km14	caribou	1	
23-May-11	2318	power mag	Porcupine	1	
24-May-11		10.5	Porcupine	1	
24-May-11	330	power mag	Porcupine	1	missing fur from back end
25-May-11		Airstrip	caribou	1	
25-May-11	1930	power mag	fox	1	looks young
26-May-11		25	Porcupine	1	
26-May-11	2355	power mag	fox	1	
27-May-11	500	25.5	Porcupine	1	
28-May-11	2035	262	rabbit	1	
29-May-11	1500	above sight	cranes	~500	catching draft heading north
29-May-11	410	power mag	wolf	1	
30-May-11	1900	262	wolf	1	
31-May-11	2100	262	bear	1	
2-Jun-11	6pm	26.1	porcupine	1	crossing road
2-Jun-11	1134	tailings	fox	1	walking
3-Jun-11	2018	pwr mag	Porcupine	1	
3-Jun-11	100	kitchen front	Porcupine	1	chewing on sidewalk
4-Jun-11	500	camp	Porcupine	1	chewing weakways
5-Jun-11	1630	fresh water pumps	wolf	1	xing road-go creek by 26.5
5-Jun-11	1941	km10	bear	1	close to grader
5-Jun-11	1630	fresh water pumps	wolf	1	xing road-go creek by 26.5
5-Jun-11	1941	km10	bear	1	close to grader
6-Jun-11	412	burnpit rd	rabbit	1	eating on side of road
6-Jun-11	355	camp	fox	1	coming from under kitchen
6-Jun-11	355	camp	fox	1	coming from under kitchen
6-Jun-11	1700	ACL	moose	1	on hill across camp
7-Jun-11	501	pwr mag rd	Porcupine	1	on road
8-Jun-11	830	btw enviros admin	chipmunk	1	hawing a tantrum
8-Jun-11	1730	km27.3	moose	1	standing on hill
9-Jun-11	1846	airstrip	Porcupine	1	trying to head x airstrip
9-Jun-11	315	2nd pond,burnpit	ducks	2	swimming
9-Jun-11	345	burn pit rd	Porcupine	1	on road
9-Jun-11		km27.4	woodpile	1	has a house in the tree
10-Jun-11	1935	pwr mag rd	Porcupine	1	on road
11-Jun-11	1330	km8.5	moose	1	
11-Jun-11	1430	campbell	goldeneagle	1	flying around
12-Jun-11			caribou	2	cow and calf on road

Date	Time	Location	Species	# of Animals	Activity
12-Jun-11		Road	porcupine	5	
12-Jun-11			Owl	1	
12-Jun-11		money creek	belted king frone	1	
14-Jun-11	443	camp	baby beaver	1	swimming
14-Jun-11	2023	burn pit	fox	1	walking through
14-Jun-11	2227	camp parking lot	fox	1	sitting by burnpile
15-Jun-11	2046	pwr mag rd	squirrel	1	mother of baby foxes
17-Jun-11	435	fox lwr bypass	fox	2	den at airstrip
17-Jun-11	2330	power mags	vowl	1	on road dragging hind legs
18-Jun-11	1830	camp complex	fox	1	
18-Jun-11	2355	power house	Porcupine	1	
18-Jun-11		Road	Porcupine	2	walking on road
19-Jun-11	30	artic camp	deer	2	mama bear
19-Jun-11	33	burn pit	fox	1	
19-Jun-11		camp	Fox	1	in camp
21-Jun-11		KM20	moose	1	calf on road.
25-Jun-11	0	camp	fox pup	1	seen by security, yelping for mother
25-Jun-11	400	camp	fox	2	calling for mother
25-Jun-11	0	camp	fox pup	1	seen by security, yelping for mother
26-Jun-11	9:13am	camp	fox	1	ran underneath dorm five
26-Jun-11	2322	parking lot	Porcupine	1	went under dorm 4
27-Jun-11	53	camp	fox	1	carrying garbage in it's mouth
28-Jun-11	433	camp	fox	2	heading towards kitchen
29-Jun-11	326	camp	yng fox	1	looking for mother
29-Jun-11	100				tracks-2 iron clad reported
30-Jun-11	330pm	wolverine lake	wolf	3	wolf waste @ north end
30-Jun-11		assaylab	fox	1	pee'd on boardwalk
1-Jul-11	2252	27.2	Porcupine	1	walking
2-Jul-11	1300	kitchen	chipmunk	1	on walkway
3-Jul-11	120	pwr mag rd	fox	1	running
3-Jul-11	2306	pwr mag rd	Porcupine	1	waddling across road
4-Jul-11	2243	incenerator	fox	1	running up road way
5-Jul-11	214	burn pit	fox	1	checking out garbage
6-Jul-11	2301	burnpit rd	Porcupine	1	walking along edge of road
7-Jul-11	425	norcope trailer	fox	1	running with something in its mouth
7-Jul-11	1000	airstrip	caribou	1	running on airstrip
7-Jul-11	2210	Fuel Pad	fox	1	watching
8-Jul-11	27	26.2	fox	1	xing road-go creek by 26.5

Date	Time	Location	Species	# of Animals	Activity
10-Jul-11	102	26.5	young fox	3	running up road way
10-Jul-11	106	procon	fox	1	standing on berm
10-Jul-11	345	Laydown	fox	1	running through
10-Jul-11	1200	km16	wolf	2	near access road
10-Jul-11	2306	burnpit rd	fox	2	eating garbage
12-Jul-11	207	26.1	ptarmigan	2	
12-Jul-11	208	26.2	Porcupine	1	waddling down road
12-Jul-11	417	first aid	fox	1	running by
14-Jul-11	2325	burn pit	baby fox	3	
23-Jul-11	2010	burn pt	young fox	2	playing with garbage
23-Jul-11	2010	km18	caribou	3	
24-Jul-11	2323	arctic	fox	1	
25-Jul-11	2350	burn pit	fox	3	
29-Jul-11	315	burn pit	fox	2	
31-Jul-11	2035	burn pit	fox	4	playing
1-Aug-11	2230	pkd lot	fox		
2-Aug-11	2300	km25	Porcupine		waddling on road
3-Aug-11		19.25km	caribou	1	laying on road
5-Aug-11	2214	burnpit rd	fox	1	fighting over scraps
6-Aug-11	133	27.2	mouse	2	xing road
6-Aug-11	2030	dorm 1	fox	1	
6-Aug-11	2330	lwr bypass	fox	1	
7-Aug-11	2000	airstrip	caribou	2	called in
7-Aug-11	2050	25.5	ptarmigan	1	flew up from side of road
7-Aug-11	2319	26.5	fox	several	xing road
7-Aug-11	2322	26.7	Porcupine	1	walking up side road
7-Aug-11	2332	mill area	fox	1	
8-Aug-11	2000	19km	caribou	1	
14-Aug-11	25	26.2	caribou	1	crossedroad
18-Aug-11	1430	land fill	fox	several	eatting garbage
19-Aug-11	808	burn pit	fox	1	eatting garbage
21-Aug-11	1325	incenerator	fox	1	sitting on edge
21-Aug-11	1700	burn pit	fox	2	playing in wood
22-Aug-11	2100	air strip	fox	1	laying on road
23-Aug-11	2300	burn pit	fox	1	had something in mouth
24-Aug-11	2020	lwr bypass	fox	1	
24-Aug-11	2050	km28	fox	2	
24-Aug-11	2052	pwr mag rd	fox	1	had a hot dog with wrapper
8-Sep-11	2055	burn pit	grizzly	1	eatting berries

Date	Time	Location	Species	# of Animals	Activity
9-Sep-11	1413	burn pit	fox	1	eating garbage
29-Sep-11		hwy(southbound)	moose	2	mother and calve crossing the road
29-Sep-11		hwy(southbound)	moose	1	bull moose on road
30-Sep-11		hwy(northbound)	moose	1	bull moose on road ran off
2-Oct-11		26.2 KM	caribou	1	cross road
3-Oct-11	855	26.2	fox	1	burn pit found food
9-Oct-11	854	26.2	fox	2	fighting over incinerator rod
10-Oct-11	1048	26.2	fox	1	walking by swp
13-Oct-11		24.5	moose	1	looking very defeated had a limp
20-Oct-11	1328	Truck shop	wolf	1	walking by the shop
28-Oct-11	1300	Km 24.5	Caribou	6	on road
14-Nov-11	1430	camp Hwy	wolf	1	crossing road outside the gate
15-Nov-11	600	camp	foxes	2	walking around camp
29-Nov-11	1205	wolverine lake	caribou	15	all on wolverine lake
4-Dec-11	1530	camp	fox	1	right by the offices
7-Dec-11	1540	burnpit	fox	3	hanging around the fire
29-Dec-11	1000	21.5km	cow and two calves	3	moose crossing the road
31-Dec-11	1400	airstrip	ptarmigan	50	
			porcupine	1	chewing on sidewalk
	2330	burn pit	fox		eating and digging
	2331	burn pit	fox		

Appendix B

Winter Wildlife Monitoring - Transect Data

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	804	438944	6811254	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	805	438359	6811289	BIRD	TR	3
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	806	438230	6811286	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	807	438106	6811373	MUER	TR	3
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	808	438079	6811393	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	809	437995	6811503	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	810	437967	6811543	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	811	437921	6811598	TAHU	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	812	437818	6811781	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	813	437849	6811818	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	814	437868	6811843	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	815	437913	6811890	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	816	437925	6811916	LYCA	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	817	437852	6811932	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	818	437730	6812013	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	819	437720	6812046	TAHU	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	820	437683	6812159	TAHU	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	821	437677	6812165	TAHU	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	822	437617	6812244	MAAM	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	823	437592	6812279	ALAL	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	824	437529	6812461	MUER	TR	1
MSSA-WT01	25-Jan-11	RM/JS	1230	1520	?	-5	0	0	Nil	nil	28	61	825	437449	6812541	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	896	438966	6811305	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	897	438964	6811275	ALAL	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	898	438819	6811355	RATA	TR	4
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	899	438781	6811351	MAAM	TR	1

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	900	438750	6811363	MUER	TR	2
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	901	438652	6811383	LYCA	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	902	438613	6811402	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	903	438581	6811416	TAHU	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	904	438557	6811424	TAHU	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	905	438485	6811438	MUER	TR	2
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	906	438456	6811445	RATA	TR	2
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	907	438445	6811444	MAAM	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	908	438425	6811438	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	909	438205	6811268	RATA	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	910	438003	6811496	RATA	TR	3
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	911	437836	6811802	RATA	TR	4
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	912	437871	6811839	ALAL	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	913	437887	6811860	MAAM	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	914	437772	6811966	MAAM	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	915	437710	6812088	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	916	437682	6812130	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	917	437685	6812148	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	918	437627	6812233	MUER	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	919	437564	6812323	VUVU	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	920	437541	6812368	ALAL	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	921	437479	6812515	MAAM	TR	1
MSSA-WT01	22-Feb-11	RM/JS	1325	1500	-20	-20	10-15	10-15	4 cm	nil	24	68	922	437433	6812559	LAMU	TR	10
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	980	438956	6811422	LEAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	981	438954	6811358	LYCA	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	982	438900	6811277	MUER	TR	1

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MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	982	438900	6811277	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	984	438759	6811349	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	985	438692	6811361	TAHU	TR	3
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	986	438630	1681380	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	987	438549	6811427	LYCA	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	987	438549	6811427	TAHU	TR	2
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	988	438495	6811439	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	989	438450	6811439	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	990	438398	6811417	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	990	438398	6811417	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	991	438383	6811397	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	992	438326	6811277	TAHU	TL	2
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	993	438228	6811278	LAMU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	994	438211	6811269	LAMU	TR	3
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	994	438211	6811269	VUVU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	995	438027	6811458	LAMU	TR	2
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	996	438005	6811492	MUER	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	997	437981	6811525	TAHU	TR	2
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	998	437940	6811573	TAHU	TR	4
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	999	437883	6811678	TAHU	TR	4
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	1	437842	6811812	MUER	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	2	437900	6811934	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	2	437900	6811934	MUER	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	3	437860	6811937	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	4	437825	6811938	TAHU	TL	3
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	5	437744	6811995	LAMU	TR	4

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	6	437675	6812172	MAAM	TR	2
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	6	437675	6812172	MUER	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	7	437545	6812368	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	7	437545	6812368	MUER	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	8	437537	6812392	LYCA	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	8	437537	6812392	MAAM	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	9	437512	6812477	TAHU	TR	1
MSSA-WT01	26-Mar-11	RM/JS	830	930	-5	-5	0-5	0-5	0	0	36	79	9	437512	6812477	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		56	438976	6811454	VUVU	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		57	438963	6811427	CALA	TR	2
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		58	438950	6811394	MAAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		59	438951	6811364	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		60	438958	6811322	VUVU	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		61	438467	6811442	LEAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		62	438362	6811322	MAPE	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		63	438357	6811282	LEAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		64	438324	6811278	LEAM	TR	5
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		65	438291	6811299	VUVU	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		66	438203	6811274	MAAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		67	438202	6811274	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		68	438176	6811304	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		69	438129	6811352	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		70	438108	6811368	LEAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		71	438112	6811370	MICR	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		72	438100	6811378	MUER	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		73	438059	6811418	MICR	TR	2

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MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		74	438030	6811455	LEAM	TR	5
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		75	437940	6811571	LEAM	TR	25
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		76	437856	6811826	LEAM	TR	10
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		77	437816	6811940	LEAM	TR	10
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		78	437526	6812410	MAAM	TR	1
MSSA-WT01	12-Apr-11	JG/MK	1235	1410	-2	0	0-5	0	0	0	96		79	437445	6812538	LEAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	383	438959	6811437	VUVU	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	384	438953	6811263	RATA	TR	3
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	384	438953	6811263	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	385	438887	6811295	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	386	438786	6811343	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	387	438676	6811367	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	388	438655	6811368	ALAL	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	389	438542	6811437	MUER	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	390	438473	6811444	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	390	438473	6811444	MUER	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	391	438325	6811278	MUER	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	392	438173	6811310	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	393	438128	6811361	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	394	437819	6811773	ALAL	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	395	437871	6811875	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	396	437908	6811875	LEAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	397	437820	6811942	ALAL	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	398	437731	6812023	LEAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	399	437703	6812110	MAAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	399	437703	6812110	ALAL	TR	1

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MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	501	437545	6812376	LEAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	502	437527	6812438	LEAM	TR	1
MSSA-WT01	29-Nov-11	MA/RM	11:45	14:26	-18	-10	15KM/H	0-5KM/H	0	light snow	24	36	503	437383	6812655	MAAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	249	439105	6812113	MICR	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	250	439055	6812120	MICR	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	251	439003	6812137	LEAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	252	438928	6812209	LEAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	253	438856	6812221	MICR	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	253	438856	6812221	VUVU	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	253	438856	6812221	LEAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	255	438771	812275	LEAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	256	438772	6812289	MAAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	256	438772	6812289	TAHU	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	256	438772	6812289	LEAM	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	257	438762	6812296	MUER	TR	1
MSSA-WT02	28-Oct-11	MA/JG	13:30	15:10	-5	-4	NONE	5	0	0	24	17	258	438476	6812349	MAAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	368	439668	6811317	VUVU	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	369	439592	6811404	LEAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	370	439567	6811448	LEAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	371	439514	6811536	LEAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	372	439477	6811677	LEAM	TR	4
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	373	439418	6811908	LEAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	374	439373	6811934	LEAM	TR	5
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	375	439274	6812002	VUVU	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	375	439274	6812002	LEAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	376	439179	6812056	LEAM	TR	1

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MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	377	439126	6812088	MAAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	378	439054	6812124	MAAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	379	439010	6812141	VUVU	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	379	439010	6812141	MAAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	380	438839	6812230	RATA	TR	3
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	381	438635	6812359	MAAM	TR	1
MSSA-WT02	29-Nov-11	MA/RM	11:10	11:40	-18	-10	15	0-5	0	0		51	382	438600	6812367	MAAM	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	504	439479	6811684	MAAM	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	504	439479	6811684	VUVU	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	505	439420	6811891	VUVU	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	506	439405	6811915	LEAM	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	507	439375	6811931	LEAM	TR	3
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	508	439303	6811980	VUVU	TR	1
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	509	439249	6812015	LEAM	TR	2
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	510	439165	6812069	LEAM	TR	2
MSSA-WT02	13-Dec-11	JS/BL	10:15									63	511	443408	6802253	MAAM	TR	1
MSSA-WT03	24-Jan-11	RM/BL	1340	1430	-7	-10	5-10	5-10	0	0	32	78	798	442584	6808495	LAMU	TR	1
MSSA-WT03	24-Jan-11	RM/BL	1340	1430	-7	-10	5-10	5-10	0	0	32	78	799	442657	6808314	VUVU	TR	1
MSSA-WT03	24-Jan-11	RM/BL	1340	1430	-7	-10	5-10	5-10	0	0	32	78	800	442656	6808304	LAMU	TR	20
MSSA-WT03	24-Jan-11	RM/BL	1340	1430	-7	-10	5-10	5-10	0	0	32	78	801	442628	6808180	VUVU	TR	1
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	856	442061	6809027	VUVU	TR	1
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	857	442172	6808968	VUVU	TR	1
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	858	442275	6808830	VUVU	TR	1
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70		442433	6808657	TAHU	TR	1
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	859	442640	6808390	LAMU	TR	10
MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	860	442645	6808377	VUVU	TR	1

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MSSA-WT03	7-Feb-11	JG/KZ	1455	1545	-10	-5	0	0	0	0	30	70	861	442621	6808160	MUVI	TR	1
MSSA-WT03	6-Mar-11	JJ/JG	1400	1430	-15		0	0	0	0	48	71	943	442005	6809029	VUVU	TR	1
MSSA-WT03	6-Mar-11	JJ/JG	1400	1430	-15		0	0	0	0	48	71	945	442510	6808580	MAAM	TR	1
MSSA-WT03	6-Mar-11	JJ/JG	1400	1430	-15		0	0	0	0	48	71	946	442657	6808332	LAMU	TR	2
MSSA-WT03	6-Mar-11	JJ/JG	1400	1430	-15		0	0	0	0	48	71	947	442617	6808134	LAMU	TR	1
MSSA-WT03	23-Oct-11	JS/JG	1330	1405	-5	-5	5-10	0-5	3	0	24	14	233	442619	6808157	VUVU	TR	1
MSSA-WT03	23-Oct-11	JS/JG	1330	1405	-5	-5	5-10	0-5	3	0	24	14	234	442427	6808656	VUVU	TR	1
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	262	442072	6809026	VUVU	TR	1
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	263	442651	6808309	LEAM	TR	3
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	264	442651	6808294	VUVU	TR	1
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	264	442651	6808294	LEAM	TR	3
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	265	442627	6808175	MICR	TR	1
MSSA-WT03	7-Nov-11	MA/RM	15:20	16:30	-15	-5	5-10	0	0	0	28	23	266	442623	6808160	LEAM	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	563	442319	6808776	VUVU	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	564	442509	6808591	LEAM	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	564	442509	6808591	MAAM	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	564	442509	6808591	MUER	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	565	442533	6808567	MUER	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	568	442556	6808548	LEAM	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	569	442652	6808287	MAAM	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	570	442653	6808136	VUVU	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	571	442619	6808136	VUVU	TR	1
MSSA-WT03	24-Dec-11	MA/DH	9:50	12:00	-9	-7	15	0-10	4	0		51	571	442619	6808136	LEAM	TR	1
MSSA-WT04	24-Jan-11	RM/BL	1500	1545	-7	-10	5-10	5-10	0	0	33	76.2	802	440833	6810106	VUVU	TR	1
MSSA-WT04	24-Jan-11	RM/BL	1500	1545	-7	-10	5-10	5-10	0	0	33	76.2	803	440611	6810444	VUVU	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	33	440518	6810508	VUVU	TR	2

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	33	440518	6810508	LAMU	TR	20
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	34	440632	6810401	VUVU	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	34	440632	6810401	LAMU	TR	30
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	35	440651	6810288	LEAM	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	35	440651	6810288	LAMU	TR	10
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	36	440675	6810262	LEAM	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	36	440675	6810262	LAMU	TR	5
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	36	440675	6810262	VUVU	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	37	440815	6810129	MAAM	TR	1
MSSA-WT04	26-Mar-11	JS	1420	1440	-5	0	0-5	0-5	0	0	44	80.4	38	440897	6810049	TAHU	TR	1
MSSA-WT04	6-Nov-11	MA/RM	10:26	10:39	-18	-15	10	10	0	Flurries	24	25.2	259	440589	6810470	VUVU	TR	1
MSSA-WT04	6-Nov-11	MA/RM	10:26	10:39	-18	-15	10	10	0	Flurries	24	25.2	260	440873	6810071	VUVU	TR	1
MSSA-WT04	6-Nov-11	MA/RM	10:26	10:39	-18	-15	10	10	0	Flurries	24	25.2	261	440977	6809950	MAAM	TR	1
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	545	440522	6810505	LAMU	TR	30
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	545	440522	6810505	VUVU	TR	1
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	546	440632	6810400	VUVU	TR	2
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	547	440632	6810373	LAMU	TR	10
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	548	440669	6810268	VUVU	TR	2
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	548	440669	6810268	LAMU	TR	10
MSSA-WT04	17-Dec-11	JS	14:30	14:50	-15	-5	0-5	0	0	0	48	54.0	549	440764	6810176	LAMU	TR	10
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	39	440359	6810315	VUVU	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	40	440388	6810307	LAMU	TR	20
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	41	440498	6810226	LAMU	TR	30
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	42	440556	6810121	VUVU	TR	2
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	43	440756	6809991	LEAM	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	44	440774	6809964	LEAM	TR	1

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	45	440843	6809867	LAMU	TR	20
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	46	440906	6809785	VUVU	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	47	441051	6809596	VUVU	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	47	441051	6809596	LAMU	TR	10
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	48	441296	6809283	MICR	TR	2
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	49	441346	6809222	VUVU	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	50	442093	6808388	LAMU	TR	5
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	51	442168	6808273	LAMU	TR	10
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	52	442450	6808052	MICR	TR	2
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	53	442508	6808007	LEAM	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	54	442548	6807966	MICR	TR	1
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	54	442548	6807966	LAMU	TR	5
MSSA-WT05	29-Mar-11	RM/JS	930	1000	10	-3	0-5	0-5	0	0	72	88.0	55	442655	6807878	MAAM	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	125	440541	6810180	LAMU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	125	440541	6810180	VUVU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	126	440570	6810083	LAMU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	127	440626	6810074	VUVU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	128	441629	6808914	LAMU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	129	441846	6808710	VUVU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	130	442120	6808352	LAMU	TR	1
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	131	442507	6808014	LAMU	TR	3
MSSA-WT05	18-Apr-11	JS/RM	810	840	-5	-10	40673	0-5	0	0	24	80.7	132	442713	6807818	LAMU	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	352	440327	6810373	LAMU	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	353	440537	6810192	LAMU	TR	8
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	354	440969	6809710	LEAM	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	355	440995	6809673	VUVU	TR	1

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	356	441106	6809542	LEAM	TR	5
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	357	441167	6809442	LEAM	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	357	441167	6809442	VUVU	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	358	441408	6809169	MUER	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	359	441627	6808932	MUER	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	360	441792	6808757	MUER	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	361	441850	6808707	LAMU	TR	0.5
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	362	441850	6808704	LAMU	TR	20
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	363	441987	6808569	MUER	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	364	442118	6808391	MUER	TR	1
MSSA-WT05	25-Nov-11	MA/RM	13:30	15:15	-18	-18	5KM/H	0	0	0	48	41.0	365	442166	6808274	LAMU	TR	50
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	550	440539	6810187	LAMU	TR	5
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	551	440585	6810120	LAMU	TR	10
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	552	440647	6810063	LEAM	TR	1
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	552	440647	6810063	VUVU	TR	1
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	553	440736	6809985	LAMU	TR	10
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	554	440853	6809865	VUVU	TR	2
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	554	440853	6809865	CALU	TR	3
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	555	440940	6809753	LEAM	TR	1
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	556	440993	6809676	LEAM	TR	1
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	556	440993	6809676	ALAL	TR	1
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	557	441114	6809512	LAMU	TR	5
MSSA-WT05	18-Dec-11	JS/DH			-10	-15	10-15	0-5	5	0	12	48.9	558	441292	6809300	VUVU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	862	444098	6805668	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	863	444107	6805656	LEAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	864	444130	6805608	LYCA	TR	1

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MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	865	444166	6805547	RATA	TR	3
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	866	444175	6805532	TAHU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	867	444185	6805510	MAAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	870	444194	6805470	MAAM	TR	4
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	871	444228	6805438	TAHU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	871	444228	6805438	LEAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	872	444276	6805408	MAAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	874	444348	6805356	MAAM	TR	4
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	875	444361	6805320	ALAL	TR	4
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	875	444361	6805320	LEAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	876	444287	6805178	ALAL	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	877	444262	6805161	MUER	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	878	444225	6805136	MAAM	TR	3
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	879	444160	6805085	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	880	444142	6805076	TAHU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	880	444142	6805076	LEAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	881	444114	6805039	MAAM	TR	3
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	881	444114	6805039	TAHU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	882	444064	6805011	TAHU	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	883	443928	6804921	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	884	443878	6804931	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	885	443823	6804837	MAAM	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	887	443769	6804798	RATA	TR	2
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	887	443769	6804798	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	889	443688	6804669	MUER	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	890	443693	6804640	LAMU	TR	6

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	891	443747	6804375	MAAM	TR	1
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	892	443694	6804261	LAMU	TR	12
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	893	443622	6804231	LAMU	TR	20
MCSA-WT01	13-Feb-11	RM/BL	1145	1310	-8	-10	0	0-5	26	2	0	66	894	443597	6804188	LAMU	TR	15
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	133	443580	6804162	ALAL	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	134	443782	6804805	TAHU	TR	3
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	135	443867	6804931	LYCA	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	135	443867	6804931	MAAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	135	443867	6804931	LEAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	136	443940	6804921	LYCA	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	136	443940	6804921	LEAM	TR	5
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	137	443961	6804937	MAAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	138	444013	6804975	ALAL	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	139	444166	6805081	LEAM	TR	5
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	140	444232	6805138	MAAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	140	444232	6805138	TAHU	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	141	444372	6805242	MAAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	141	444372	6805242	LEAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	142	444367	6805280	TAHU	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	142	444367	6805280	LEAM	TR	3
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	142	444367	6805280	MAAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	143	444339	6805361	TAHU	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	145	444258	6805420	LEAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	146	444228	6805436	TAHU	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	147	444201	6805453	TAHU	TR	5
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	148	444190	6805501	TAHU	TR	5

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MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	148	444190	6805501	LEAM	TR	1
MCSA-WT01	19-Apr-11	JS/RM	945	1105						0	0	60	148	444190	6805501	MAAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	269	443742	6804350	MAAM	TR	2
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	270	443742	6804465	RATA	TR	2
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	271	443791	6804815	LEAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	272	443819	6804837	MAAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	273	443873	6804935	LEAM	TR	2
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	274	443994	6804963	LEAM	TL	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	275	444046	6805005	MAAM	TR	3
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	275	444046	6805005	LEAM	TR	3
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	276	444094	6805040	MAAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	277	444144	6805068	LEAM	TR	2
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	277	444144	6805068	TAHU	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	278	444163	6805085	MAAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	279	444184	6805107	LEAM	TR	5
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	281	444276	6805170	LEAM	TR	4
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	282	444318	6805205	MAAM	TR	3
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	283	444332	6805260	MAAM	TR	5
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	284	444357	6805339	MUER	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	285	444316	6805378	MUER	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	287	444193	6805455	MAAM	TR	2
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	288	444175	6805527	LEAM	TR	7
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	288	444175	6805527	MAAM	TR	1
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	289	444154	6805574	MAAM	TR	4
MCSA-WT01	09-Nov-11	JA/RM	13:05	14:15	-10	-12	0	5	56	0	0	27	290	444123	6805601	LEAM	TR	3
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		525	443590	6804192	ALAL	TR	2

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MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		526	443652	6804244	ALAL	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		527	443747	6804383	MAAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		528	443750	6804800	LEAM	TR	3
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		528	443750	6804800	MAAM	TR	2
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		529	443840	6804852	LEAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		529	443840	6804852	MAAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		530	444054	6805008	LEAM	TR	2
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		530	444054	6805008	TAHU	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		530	444054	6805008	MAAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		531	444107	6805044	MUER	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		532	444147	6805074	LEAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		533	444170	6805094	RATA	TR	4
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		534	444217	6805132	LEAM	TR	2
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		535	444270	6805169	MUER	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		536	444373	6805245	RATA	TR	2
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		536	444373	6805245	MAAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		537	444367	6805295	LEAM	TR	3
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		538	444357	6805338	MAAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		539	444234	6805443	LEAM	TR	1
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		540	444174	6805554	LEAM	TR	4
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		540	444174	6805554	MAAM	TR	2
MCSA-WT01	14-Dec-11	JS/MK			-8	-15	0	5-10		5	0		541	444135	6805607	LEAM	TR	5
MCSA-WT02	14-Dec-11	JS/MK											511	443408	6802253	MUER	TR	1
MCSA-WT02	14-Dec-11	JS/MK											512	443572	6802410	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											513	443586	6802458	MUER	TR	1
MCSA-WT02	14-Dec-11	JS/MK											514	443601	6802486	LEAM	TR	1

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MCSA-WT02	14-Dec-11	JS/MK											515	443580	6802766	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											516	443586	6802814	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											517	443639	6802848	ALAL	TR	1
MCSA-WT02	14-Dec-11	JS/MK											517	443639	6802848	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											517	443639	6802848	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											518	443711	6802961	ALAL	TR	1
MCSA-WT02	14-Dec-11	JS/MK											519	443705	6803079	RATA	TR	1
MCSA-WT02	14-Dec-11	JS/MK											519	443705	6803079	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											519	443705	6803079	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											520	443628	6803347	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											520	443628	6803347	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											521	443637	6803495	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											521	443637	6803495	MUER	TR	1
MCSA-WT02	14-Dec-11	JS/MK											522	443618	6803547	RATA	TR	1
MCSA-WT02	14-Dec-11	JS/MK											523	443591	6803688	LYCA	TR	1
MCSA-WT02	14-Dec-11	JS/MK											523	443591	6803688	LEAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											524	443608	6803958	MAAM	TR	1
MCSA-WT02	14-Dec-11	JS/MK											524	443608	6803958	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	761	452544	6816899	MICR	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	762	747	7401	MICR	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	763	767	7469	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	764	800	7586	MICR	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	765	814	7935	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	766	809	7951	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	767	788	8045	MUER	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	768	767	8145	LEAM	TR	1

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PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	769	785	8246	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	770	835	8298	LEAM	TL	5
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	770	835	8298	MUER	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	771	843	8304	MICR	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	772	851	8350	LEAM	TR	4
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	773	879	8441	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	774	877	8450	MUER	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	775	893	8482	LEAM	TR	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	776	901	8500	MUER	TR	3
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	777	903	8523	LEAM	TL	1
PCSA-WT01	31-Jan-11	RM/JS	1345	1503	-15	-10	0	0	0	0	72	40	778	912	8541	LEAM	TL	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	926	452491	6816763	MUER	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	927	452539	6816857	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	928	452779	6818095	MAAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	929	452773	6818118	ALAL	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	930	452764	6818162	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	931	452775	6818212	MAAM	TR	2
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	932	452785	6818259	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	933	452841	6818302	MAAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	934	452848	6818338	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	935	452879	6818436	ALAL	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	936	452872	6818449	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	937	452874	6818465	MAAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	938	452881	6818470	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	939	452901	6818513	LEAM	TR	1
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	940	452912	6818586	LEAM	TR	4

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PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	941	452915	6818604	LEAM	TR	3
PCSA-WT01	1-Mar-11	RM/JS	1330	1500	-30	-25	20-25	0	0	0	48	56	942	452907	6818650	LEAM	TR	7
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	948	452909	6818653	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	949	452909	6818650	LEAM	TR	2
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	950	452912	6818629	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	951	452920	6818612	LYCA	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	952	452917	6818593	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	953	452911	6818593	LEAM	TR	3
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	954	452915	6818580	LEAM	TR	4
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	955	452923	6818565	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	956	452914	6818540	LEAM	TR	3
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	957	452905	6818528	MUVI	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	958	452903	6818519	LEAM	TR	2
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	959	452895	6818488	LEAM	TR	3
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	960	452885	6818471	LEAM	TR	2
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	961	452873	6818458	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	962	452858	6818369	VUVU	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	963	452843	6818300	LEAM	TR	3
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	964	452791	6818263	LEAM	TR	3
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	965	452774	6818213	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	966	452765	6818175	LEAM	TR	2
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	967	452765	6818151	LEAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	968	452809	6817960	MAAM	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	969	452814	6817839	MICR	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	970	452788	6817555	MUER	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	971	452770	6817473	TAHU	TR	1

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	972	452758	6817437	MICR	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	973	452749	6817409	MICR	TR	1
PCSA-WT01	20-Mar-11	JG/MK	1415	1535	-10	0	0	0	0	0	72	56	974	452744	6817396	MICR	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	328	452493	6816793	MUER	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	329	452525	6816838	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	330	452593	6817028	ALAL	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	331	452691	6817268	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	332	452733	6817387	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	333	452793	6817560	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	334	452813	6817632	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	335	452814	6817698	LEAM	TR	2
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	336	452813	6817751	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	337	452813	6817867	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	338	452815	6817939	TAHU	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	339	452809	6817952	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	340	452797	6818004	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	341	452767	6818143	LEAM	TR	2
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	342	452768	6818184	TAHU	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	342	452768	6818184	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	343	452775	6818229	LEAM	TR	3
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	344	452782	6818237	LEAM	TR	4
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	344	452782	6818237	TAHU	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	345	452795	6818258	LEAM	TR	2
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	346	452845	6818323	LEAM	TR	3
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	347	452851	6818362	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	348	452873	6818463	LEAM	TR	3

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	349	452905	6818525	LEAM	TR	5
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	350	452926	6818571	MAAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	350	452926	6818571	LEAM	TR	1
PCSA-WT01	19-Nov-11	JS/RM	1120		-25	-25	40-5	0-5	0	0	48	26	584	452896	6818644	LEAM	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	584	452896	6818644	TAHU	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	586	452886	6818478	LEAM	TR	8
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	587	452870	6818382	LEAM	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	588	452830	6818289	LEAM	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	589	452788	6818259	MUER	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	589	452788	6818259	MAAM	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	590	452769	6818195	MUER	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	590	452769	6818195	LEAM	TR	2
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	591	452785	6818010	LEAM	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	592	452816	6817926	LEAM	TR	3
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	593	452538	6816890	MICR	TR	1
PCSA-WT01	31-Dec-11	MM/KZ	10:45	12:30	-16	-15	0	0	0	0	48	39	594	452525	6816798	MICR	TR	1
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	785	450495	6812523	MUER	TR	2
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	786	486	2546	MAAM	TR	1
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	787	474	2564	MUER	TR	1
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	788	469	2644	MAAM	TR	3
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	789	500	2484	MAAM	TR	1
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	790	558	3416	LYCR	TR	1
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	791	633	3615	LEAM	TL	2
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	792	612	3735	LEAM	TL	2
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	793	613	3737	LEAM	TL	2
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	794	599	3820	TAHU	TR	1

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PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	795	497	2309	LEAM	TL	3
PCSA-WT02	5-Jan-11	RM/MP	1440	1600	-7	-10	0-5	0-5	0	0	31	47	797	573	3913	LEAM	TL	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	92	450500	6812310	LEAM	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	93	450529	6812356	LEAM	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	94	450512	6812391	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	95	450510	6812448	LEAM	TR	10
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	96	450497	6812478	LEAM	TR	10
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	97	450489	6812528	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	98	450468	6812575	MAAM	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	99	450467	6812584	LEAM	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	100	450459	6812610	LEAM	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	101	450445	6812626	MAAM	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	102	450484	6812664	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	103	450494	6812724	LEAM	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	104	450491	6812743	LEAM	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	105	450489	6812804	LEAM	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	106	450504	6812886	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	107	450486	6812973	LEAM	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	108	450489	6813019	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	109	450508	6813055	LEAM	TR	15
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	109	450508	6813055	TAHU	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	110	450479	6813091	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	111	450458	6813131	TAHU	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	111	450458	6813131	LEAM	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	112	450499	6813325	TAHU	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	113	450510	6813347	TAHU	TR	3

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PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	114	450561	6813389	TAHU	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	115	450570	6813430	TAHU	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	116	450582	6813449	TAHU	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	117	450609	6813551	TAHU	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	118	450637	6813679	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	119	450631	6813708	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	120	450608	6813746	LEAM	TR	2
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	120	450608	6813746	TAHU	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	120	450608	6813746	LAMU	TR	1
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	121	450605	6813813	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	122	450601	6813844	LEAM	TR	5
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	123	450586	6814065	LEAM	TR	3
PCSA-WT02	17-Apr-11	JS/RM	945	1100	3	-7	5-10	5-10	0	0	48	50	124	450571	6814166	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	299	450504	6812321	MUER	TR	2
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	300	450508	6812461	MUER	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	301	450453	6812643	MUER	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	302	450489	6813021	LEAM	TR	3
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	303	450493	6813043	LEAM	TR	3
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	304	450487	6813075	LEAM	TR	4
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	305	450471	6813105	LEAM	TR	2
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	306	450446	6813196	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	307	450441	6813241	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	308	450451	6813275	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	309	450515	6813361	ALAL	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	310	450578	6813448	MUER	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	311	450604	6813531	LEAM	TR	1

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PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	312	450609	6813553	RATA	TR	4
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	314	450632	6813628	LEAM	TL	2
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	315	450642	6813658	LYCA	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35		450642	6813658	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	316	450632	6813703	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	317	450617	6813759	LEAM	TR	2
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	318	450618	6813785	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	319	450596	6813832	LEAM	TR	1
PCSA-WT02	18-Nov-11	JS/RM	1125		-25	-20	10-15	0	0	0	24	35	320	450578	6813900	LEAM	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	576	450522	6812414	MUER	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	577	450487	6812679	MICR	TR	2
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	578	450511	6812829	MUER	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	302	450489	6813021	TAHU	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	579	450443	6813216	MUER	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	580	45446	6813265	MICR	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	581	450449	6813277	MUER	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	582	4504621	6813297	MICR	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	583	450544	6813378	MICR	TR	1
PCSA-WT02	30-Dec-11	MM/MA	12:45	14:26	-19	-29	5-10KM/H	0	3	0	12	47	583	450544	6813378	MUER	TR	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	779	450725	6811446	MAAM	TR	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	780	705	1601	MAAM	TR	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	781	689	1668	MAAM	TR	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	782	677	1763	LEAM	TL	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	783	687	1847	MUER	TR	1
PCSA-WT03	5-Jan-11	RM/MP	1400	1440	-7	-10	0-5	0-5	30	0	0	44	784	576	2008	MAAM	TR	2
PCSA-WT03	25-Feb-11	JS/BL	1345	1500	-7	-10	20-25	0-5	20	10	0	49	925	450699	6811625	ALAL	TR	1

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	80	450688	6811322	LEAM	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	80	450688	6811322	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	81	450716	6811344	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	82	450720	6811415	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	83	450716	6811477	LAMU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	84	450712	6811487	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	85	450704	6811588	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	86	450597	6811962	LEAM	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	87	450592	6811976	LEAM	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	88	450577	6812007	VUVU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	89	450505	6812229	LEAM	TR	3
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	90	450499	6812249	TAHU	TR	1
PCSA-WT03	17-Apr-11	JS/RM	900	945	3	-7	5-10	5-10	48	0	0	58	91	450477	6812299	LEAM	TR	3
PCSA-WT03	18-Nov-11	JS/RM	1045	1115	-25	-25	10-15	0-5	24	0	0	26	294	450709	6811495	MAAM	TR	1
PCSA-WT03	18-Nov-11	JS/RM	1045	1115	-25	-25	10-15	0-5	24	0	0	26	295	450697	6811598	MAAM	TR	1
PCSA-WT03	18-Nov-11	JS/RM	1045	1115	-25	-25	10-15	0-5	24	0	0	26	296	450686	6811644	MAAM	TR	1
PCSA-WT03	18-Nov-11	JS/RM	1045	1115	-25	-25	10-15	0-5	24	0	0	26	297	450683	6811705	MAAM	TR	1
PCSA-WT03	18-Nov-11	JS/RM	1045	1115	-25	-25	10-15	0-5	24	0	0	26	298	450476	6812292	MUER	TR	1
PCSA-WT03	30-Dec-11	MA/MM	11:00	12:45	-19	-29	5-10KM/H	0	12	3	0	46	574	450634	6811873	VUVU	TR	1
PCSA-WT03	30-Dec-11	MA/MM	11:00	12:45	-19	-29	5-10KM/H	0	12	3	0	46	575	450552	6812123	TAHU	TR	1
PCSA-WT04	20-Mar-11	JG/MK	1600	1620	-10	0	nil	nil	0	0	72	44	975	450821	6813941	TAHU	TR	1
PCSA-WT04	20-Mar-11	JG/MK	1600	1620	-10	0	nil	nil	0	0	72	44	976	450829	6813940	MUER		1
PCSA-WT04	20-Mar-11	JG/MK	1600	1620	-10	0	nil	nil	0	0	72	44	977	450910	6813944	MUER	TR	1
PCSA-WT04	20-Mar-11	JG/MK	1600	1620	-10	0	nil	nil	0	0	72	44	978	450915	6813943	VUVU	TR	1
PCSA-WT04	20-Mar-11	JG/MK	1600	1620	-10	0	nil	nil	0	0	72	44	979	450955	6813938	VUVU	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	321	450611	6814008	LEAM	TR	2

Transect ID	Date d/m/y	Samplers	Start time	End Time	Weather Day b/f count (°C)	Weather day of count (°C)	Wind b/f count (km/hr)	Wind day of count (km/hr)	Precip b/f count (cm)	Precip day of count (cm)	Time since last snowfall (hrs)	Average Transect Snow Depth (cm)	Waypoint	Easting	Northing	Species Code	Sign Type	# of Sign
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	322	450667	6813969	LEAM	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	322	450667	6813969	LYCA	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	323	450705	6813933	TAHU	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	324	450763	6813937	LEAM	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	325	450801	6813955	LEAM	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	326	450801	6813953	MUER	TR	1
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	326	450801	6813953	LEAM	TR	4
PCSA-WT04	18-Nov-11	JS/RM	1300	0	-25	-20	15-Oct	0	0	0	24	39	327	450912	6813939	LEAM	TR	3

Appendix C

Total Metals Levels in Vegetation – Summary Data

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RDL	1	0.005	0.05	0.1	0.1	0.1	2	0.01	10	0.2	0.02	0.05	10	0.01	10	0.1	0.05	0.05	10	10	0.05	0.02	10	0.1	0.002	0.1	1	0.002	0.2	0.2
Horsetail																														
2011-PC1-EQUI-STN1	48	0.015	0.05	50.3	<0.1	<0.1	22	0.5	32100	0.3	0.06	6.84	106	0.31	5750	22.9	0.47	0.59	1610	28400	0.18	0.03	42	110	0.036	<0.1	4	<0.002	<0.2	46.4
2011-PC1-EQUI-STN3	36	0.006	0.07	22.6	<0.1	<0.1	15	0.13	27100	0.6	1.26	3.46	90	0.15	3720	129	1.84	0.53	1140	30800	2.59	<0.02	43	26.6	<0.002	<0.1	4	<0.002	<0.2	14.7
2011-PC1-EQUI-STN4	12	0.012	0.05	15.8	<0.1	<0.1	16	0.07	26100	0.3	0.39	4.43	49	0.12	1630	46.8	0.38	0.29	989	29900	0.5	0.02	14	12	<0.002	0.2	1	<0.002	<0.2	14
2011-PC3-EQUI-STN1-A	30	0.012	0.05	75.3	<0.1	<0.1	15	0.43	14200	0.2	0.26	5.11	82	0.11	5300	52.8	0.25	1.62	1460	19600	0.08	0.02	13	21.1	<0.002	0.2	4	<0.002	<0.2	47.6
2011-PC4-EQUI-STN1	20	0.02	0.07	72.8	<0.1	<0.1	21	0.56	17600	<0.2	0.16	5.85	89	0.22	5520	83	0.66	0.43	1610	15700	0.1	<0.02	22	59.8	0.007	<0.1	1	0.003	<0.2	57.1
2011-PC4-EQUI-STN2	42	0.022	0.05	70.8	<0.1	<0.1	19	0.22	23200	0.7	0.1	4.24	103	0.25	4390	38.3	0.29	0.66	1200	21300	1.98	<0.02	40	102	<0.002	0.2	3	0.003	<0.2	33.3
2011-PC5-EQUI-STN1	19	0.054	0.06	126	<0.1	<0.1	11	0.19	14500	1	0.14	3.67	98	0.12	6140	199	0.87	0.4	1170	14500	0.07	<0.02	62	86.2	<0.002	<0.1	1	0.008	<0.2	27.7
2011-PC5-EQUI-STN2	14	0.04	0.06	64.1	<0.1	<0.1	17	1.21	18600	<0.2	0.4	5.02	76	0.13	8940	376	1.05	0.68	1490	22200	0.07	<0.02	18	63.6	0.009	<0.1	1	0.002	<0.2	74.2
2011-PC7-EQUI-STN1	50	0.024	0.12	90.5	<0.1	<0.1	10	0.38	14000	<0.2	0.32	5.53	141	0.19	6780	162	1.13	0.62	1380	27200	0.05	<0.02	11	77	0.003	<0.1	4	0.004	<0.2	45.8
2011-PC7-EQUI-STN2	34	0.017	0.14	87.2	<0.1	<0.1	14	0.22	31500	<0.2	0.13	5.12	116	0.2	5330	160	0.96	0.39	1390	19000	0.11	0.02	18	102	<0.002	<0.1	2	0.004	<0.2	28.1
2011-PC9-EQUI-STN1	54	0.019	0.05	35.7	<0.1	<0.1	17	0.13	17200	0.3	0.09	8.6	114	0.28	4120	29.5	0.18	0.59	2160	32600	0.13	<0.02	78	15	<0.002	<0.1	6	0.002	<0.2	45.4
2011-PC9-EQUI-STN3	1240	0.018	0.14	36.6	<0.1	<0.1	13	0.13	29800	5.3	1.67	10.8	1610	0.29	7110	102	0.36	2.99	1980	38600	0.26	<0.02	48	22.7	0.011	<0.1	184	0.017	3.5	27.2
2011-MS2-EQUI-STN5	38	0.013	0.05	49.3	<0.1	<0.1	14	0.42	20000	<0.2	0.34	5.22	67	0.29	4450	73.1	0.29	2.17	1780	24900	2.22	0.21	31	67.5	0.003	0.1	3	<0.002	<0.2	32.7
2011-MS3-EQUI-STN1	18	0.017	0.05	34.4	<0.1	<0.1	14	0.15	23600	<0.2	0.15	4.26	65	0.25	4630	80.3	0.86	0.31	1660	29500	1.65	0.71	24	76.4	<0.002	<0.1	2	<0.002	<0.2	25.9
2011-MS3-EQUI-STN2	21	0.021	0.05	26.2	<0.1	<0.1	9	0.03	24100	<0.2	0.03	2.1	91	0.3	5110	109	0.39	0.32	1690	21100	0.56	0.1	23	69.8	<0.002	<0.1	2	<0.002	<0.2	22.2
2011-MS3-EQUI-STN3	19	0.015	0.05	31	<0.1	<0.1	9	0.47	22500	<0.2	0.1	4.13	73	0.24	8030	120	0.36	0.15	1920	19900	0.33	0.09	26	48.3	<0.002	<0.1	3	<0.002	<0.2	26.1
2011-MS3-EQUI-STN4	653	0.024	0.13	72.6	<0.1	<0.1	7	0.95	24200	2.7	1.03	8.69	1040	0.33	6190	87.6	0.49	2.28	1960	13700	0.63	0.1	31	49.6	0.003	<0.1	100	0.08	2.1	36.8
2011-MS4-EQUI-STN2	676	0.133	0.84	172	<0.1	<0.1	12	0.53	13400	2.2	1.14	5.68	1460	1.59	3540	178	1	5.11	1670	23400	1.44	0.49	26	84.2	0.038	<0.1	61	0.144	3	91.8
2011-MS4-EQUI-STN3	314	0.158	0.39	82.9	<0.1	<0.1	12	0.33	22100	1.1	0.55	5.22	720	1.16	6510	171	2.3	1.38	1570	16300	2.15	0.05	33	77.2	0.063	0.4	27	0.291	1	53.8
2011-MS4-EQUI-STN4	21	0.03	0.05	46.3	<0.1	<0.1	12	0.83	31300	0.3	0.06	6.55	85	0.28	9330	45.2	1.88	3	1290	14300	16.7	0.07	26	96.7	0.107	<0.1	2	0.005	<0.2	226
2011-MS4-EQUI-STN5	176	0.025	0.12	61.5	<0.1	<0.1	12	0.97	19100	0.8	0.3	5.62	427	0.3	5500	29.7	0.92	0.92	1070	33700	40.4	0.03	13	69.4	0.007	0.1	17	0.071	0.6	39.8
2011-MS4-EQUI-STN6-A	856	0.103	0.85	96.8	<0.1	<0.1	12	0.79	14400	2.7	0.99	7.58	1710	1.33	4380	73.9	10.2	3.68	968	26000	24.4	0.07	13	55.7	0.036	1.5	92	0.45	5.1	48
2011-MS5-EQUI-STN2	34	0.014	0.05	22.9	<0.1	<0.1	17	0.53	24400	<0.2	0.1	8.07	95	0.23	3410	26.3	0.79	0.4	1260	34300	0.95	<0.02	31	48.5	<0.002	<0.1	3	0.008	<0.2	50.6
2011-MC1-EQUI-STN1	23	0.022	0.05	48.5	<0.1	<0.1	16	0.09	28900	<0.2	0.17	3.54	61	0.21	3440	38.3	0.69	0.22	1290	25900	1.03	0.02	41	70.7	<0.002	<0.1	2	<0.002	<0.2	19.3
2011-MC1-EQUI-STN2	128	0.018	0.23	50.6	<0.1	<0.1	15	0.24	32900	1.1	0.47	5.37	262	0.31	3680	218	0.79	0.55	1350	27100	0.29	<0.02	32	57.2	0.007	<0.1	12	0.012	0.3	30.1
2011-MC1-EQUI-STN3	106	0.036	0.21	62.5	<0.1	<0.1	13	0.29	40400	0.5	0.33	7.09	214	0.49	5440	89	0.82	0.53	1930	36400	0.56	0.03	60	68.4	0.003	<0.1	9	0.008	<0.2	32.2
2011-MC1-EQUI-STN4-A	34	0.029	0.05	76.4	<0.1	<0.1	23	0.42	30600	<0.2	0.09	7.23	91	0.3	5480	31.4	0.52	0.54	1370	43900	0.95	0.03	40	68.3	0.004	<0.1	4	<0.002	<0.2	29.9
2011-MC1-EQUI-STN5	31	0.044	0.06	190	<0.1	<0.1	7	1.39	15300	<0.2	1.59	9.12	98	0.21	3540	204	0.28	0.76	1210	17400	1.64	0.11	11	47.4	0.007	<0.1	2	0.002	<0.2	32.6
2011-MC2-EQUI-STN1	373	0.016	0.26	257	<0.1	<0.1	18	1.52	15400	1	0.69	7.19	628	0.39	5110	269	0.79	4.5	2090	19700	1.8	0.1	<10	66.2	0.004	<0.1	26	0.06	0.8	58.1
2011-MC2-EQUI-STN2	58	0.02	0.05	109	<0.1	<0.1	6	7.26	18600	<0.2	4	5.21	109	0.41	2190	1970	0.41	2.2	6330	9200	0.12	<0.02	<10	53.1	0.002	<0.1	3	0.002	<0.2	205
2011-MC2-EQUI-STN3	14	0.014	0.06	120	<0.1	<0.1	15	0.29	29800	<0.2	0.06	5.19	85	0.22	5260	214	2.65	0.26	1670	21100	0.09	<0.02	83	54.8	0.002	0.1	1	<0.002	<0.2	37.9
2011-MC2-EQUI-STN4	14	0.01	0.05	269	<0.1	<0.1	13	1.33	13200	<0.2	0.33	5.22	92	0.08	4950	271	0.9	1.21	1520	16200	0.43	<0.02	13	65.6	0.003	<0.1	<1	<0.002	<0.2	45.3
2011-MC3-EQUI-STN1	155	0.008	0.05	79.5	<0.1	<0.1	18	0.33	22200	<0.2	0.22	4.92	135	0.17	5440	138	0.47	5.69	1480	24800	1.38	0.07	28	91.9	0.008	<0.1	4	0.011	<0.2	44
2011-MC3-EQUI-STN2	15	0.01	0.05	75.1	<0.1	<0.1	11	0.44	22300	<0.2	0.11	4.66	64	0.14	2520	59	0.4	0.27	1200	23900	0.77	<0.02	20	44.2	<0.002	<0.1	<1	0.005	<0.2	27.1
2011-MC3-EQUI-STN3-A	11	0.008	0.05	122	<0.1	<0.1	16	1.18	16200	0.4	0.19	6.02	57	0.17	5390	155	0.34	0.65	1640	21500	2.98	<0.02	<10	40.2	0.002	<0.1	<1	<0.002	<0.2	37.9

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RDL	1	0.005	0.05	0.1	0.1	0.1	2	0.01	10	0.2	0.02	0.05	10	0.01	10	0.1	0.05	0.05	10	10	0.05	0.02	10	0.1	0.002	0.1	1	0.002	0.2	0.2
Lichen																														
2011-PC1-CLAD-STN1	505	0.038	0.19	63.9	<0.1	<0.1	<2	0.08	462	1.9	0.56	3.16	876	0.85	392	57.2	0.07	1.36	296	610	0.06	0.03	50	2.1	0.008	0.1	65	0.021	1.8	17.9
2011-PC1-CLAD-STN3	894	0.053	0.21	15.3	<0.1	<0.1	<2	0.07	1050	4	0.87	4.06	1200	0.64	786	104	0.05	2.3	456	1010	0.06	0.09	12	2.3	0.008	<0.1	97	0.016	2.4	18.5
2011-PC1-CLAD-STN4	174	0.016	0.07	28.1	<0.1	<0.1	<2	0.06	4260	0.8	0.18	1.98	257	0.42	379	60.8	<0.05	0.53	416	759	0.05	<0.02	<10	3.5	0.002	<0.1	18	0.004	0.5	23
2011-PC2-CLAD-STN1	463	0.027	0.11	15.3	<0.1	<0.1	<2	0.23	1150	1.7	0.69	3.2	553	0.47	656	328	0.08	1.8	777	1940	0.05	0.03	13	3.4	0.003	<0.1	48	0.009	1.1	35.5
2011-PC2-CLAD-STN2	797	0.014	0.1	27.2	<0.1	<0.1	<2	0.1	1480	1.5	0.47	2.33	480	0.39	508	245	0.1	1.27	598	1210	0.05	0.02	13	7.5	0.003	<0.1	36	0.008	0.9	14.7
2011-PC4-CLAD-STN1	133	0.027	0.13	21.9	<0.1	<0.1	<2	0.11	2030	0.3	0.14	1.56	263	0.37	533	84.9	<0.05	0.53	472	1550	0.05	0.02	49	5.6	0.004	0.1	3	0.012	0.4	23.3
2011-PC4-CLAD-STN2	195	0.025	0.16	24.5	<0.1	<0.1	<2	0.09	2700	0.4	0.15	1.72	330	0.46	379	46.8	0.06	0.71	420	989	0.06	<0.02	<10	8.6	0.004	<0.1	6	0.012	0.5	21.6
2011-PC5-CLAD-STN1	228	0.033	0.2	21.9	<0.1	<0.1	<2	0.13	1240	0.5	0.23	1.87	465	0.42	548	80.2	0.07	1.11	458	1620	0.05	<0.02	21	4.9	0.005	0.3	7	0.018	0.8	15.3
2011-PC5-CLAD-STN2	255	0.038	0.22	22.7	<0.1	<0.1	<2	0.37	2880	0.7	0.23	1.95	440	0.68	820	51.8	0.09	1.04	445	1100	0.08	0.03	23	8.5	0.007	<0.1	10	0.026	0.9	38.4
2011-PC6-CLAD-STN1	128	0.016	0.12	26.8	<0.1	<0.1	<2	0.11	1270	0.2	0.12	1.04	222	0.41	272	150	<0.05	0.55	408	1060	0.05	0.03	15	5.1	0.004	<0.1	4	0.01	0.3	16.1
2011-MS1-CLAD-STN1	701	0.102	0.38	68.8	<0.1	<0.1	<2	0.17	2310	2.2	0.58	4.29	1190	1.76	641	332	0.14	2.65	411	739	0.13	0.05	11	6.4	0.033	<0.1	87	0.058	2.4	28.9
2011-MS1-CLAD-STN3	83	0.076	0.13	12.9	<0.1	<0.1	<2	0.15	564	0.2	0.08	2.08	143	1.11	238	92	<0.05	0.5	453	903	0.09	0.06	10	1.5	0.004	<0.1	7	0.005	0.2	27.8
2011-MS2-CLAD-STN1	166	0.061	0.12	24.2	<0.1	<0.1	<2	0.08	482	0.4	0.16	2.06	238	1.17	203	53.8	0.08	0.71	278	733	0.07	0.14	13	3.9	0.006	<0.1	13	0.008	0.4	10.7
2011-MS2-CLAD-STN2	222	0.138	0.25	26.2	<0.1	<0.1	<2	0.37	1260	0.6	0.25	4.28	370	2.15	610	243	0.07	1.47	766	1700	0.17	0.09	14	2.9	0.008	<0.1	16	0.012	0.5	51.8
2011-MS2-CLAD-STN5-A	164	0.029	0.06	20.2	<0.1	<0.1	<2	0.09	824	0.4	0.29	1.67	221	0.38	314	131	<0.05	1.03	477	848	0.05	0.04	<10	3.1	<0.002	<0.1	24	0.005	0.4	21.4
2011-MS3-CLAD-STN5	219	0.028	0.09	9.1	<0.1	<0.1	<2	0.22	935	0.7	0.2	1.65	300	0.75	351	111	0.06	0.56	532	1230	0.06	0.03	16	2.3	0.003	<0.1	25	0.006	0.6	24.5
2011-MS4-CLAD-STN1-A	170	0.21	0.31	20.1	<0.1	<0.1	<2	0.39	857	0.4	0.14	4.83	328	3.12	457	201	0.1	0.57	796	1460	0.28	0.1	<10	2	0.012	<0.1	12	0.014	0.4	53.7
2011-MS4-CLAD-STN2	157	0.144	0.23	14.4	<0.1	<0.1	<2	0.24	512	0.4	0.12	3.77	270	2.57	218	75.5	0.07	0.51	348	649	0.17	0.08	<10	1.6	0.008	<0.1	10	0.023	0.4	44.6
2011-MS5-CLAD-STN1	646	1.12	1.68	63.2	<0.1	0.3	<2	1.29	669	1.5	0.47	29	1230	19.3	605	91.2	0.18	1.5	548	1150	1.32	0.7	28	2.3	0.043	0.3	41	0.052	1.2	148
2011-MS6-CLAD-STN2	452	0.385	0.82	46.9	<0.1	0.1	<2	1.03	737	1.1	0.35	10.6	792	8.83	415	36.7	0.48	1.95	388	937	0.73	0.22	14	4.8	0.021	0.1	31	0.077	0.9	84.9
2011-MC1-CLAD-STN1	191	0.05	0.08	11.9	<0.1	<0.1	<2	0.18	1320	0.9	0.17	1.92	289	0.96	492	25.1	<0.05	0.57	574	1130	0.08	0.04	22	3	0.004	0.2	20	0.007	0.5	22.8
2011-MC1-CLAD-STN2	246	0.05	0.1	8.9	<0.1	<0.1	<2	0.07	541	1.1	0.16	1.98	241	0.58	343	228	<0.05	0.71	699	1120	0.05	0.07	11	1.6	0.003	0.1	14	0.007	0.4	28.1
2011-MC1-CLAD-STN3	99	0.024	0.06	20.6	<0.1	<0.1	<2	0.08	804	1.1	0.15	2.19	157	0.48	560	310	<0.05	1.12	792	1190	0.05	<0.02	<10	1.9	0.002	0.1	8	0.005	0.2	31.9
2011-MC1-CLAD-STN4	139	0.05	0.11	31.2	<0.1	<0.1	<2	0.34	1700	2.1	0.15	2.47	230	0.73	576	59.8	0.07	0.99	570	1080	0.06	0.03	<10	4.4	0.003	<0.1	12	0.007	0.4	35.7
2011-MC1-CLAD-STN5-A	52	0.01	0.05	9.5	<0.1	<0.1	<2	0.05	489	0.3	0.05	1.24	75	0.17	212	126	<0.05	0.3	307	377	0.05	0.02	<10	1	<0.002	<0.1	3	0.003	<0.2	22.7
2011-MC2-CLAD-STN4-A	52	0.02	0.05	10	<0.1	<0.1	<2	0.15	741	0.3	0.08	1.23	80	0.31	472	189	<0.05	0.73	677	1000	0.05	0.04	14	2.2	<0.002	<0.1	4	0.003	<0.2	25.8
2011-MC3-CLAD-STN2	77	0.027	0.05	9.4	<0.1	<0.1	<2	0.14	1440	0.6	0.08	1.86	89	0.5	460	216	0.07	0.73	739	1850	0.05	0.05	35	3.4	0.002	0.5	3	0.004	<0.2	33
2011-MC3-CLAD-STN3	52	0.022	0.05	24	<0.1	<0.1	<2	0.2	1510	<0.2	0.07	1.5	83	0.28	406	77.4	<0.05	0.49	645	1520	0.06	0.03	17	4	0.002	0.2	4	0.003	<0.2	30.4
2011-MC4-CLAD-STN1	48	0.02	0.05	5.1	<0.1	<0.1	<2	0.06	622	<0.2	0.05	1.5	76	0.33	386	137	<0.05	0.57	849	2020	0.05	0.03	41	1	<0.002	0.2	3	0.003	<0.2	26.8
2011-MC4-CLAD-STN2	85	0.074	0.06	16	<0.1	<0.1	<2	0.13	950	0.2	0.08	2.46	117	0.55	481	420	0.05	0.64	1060	1970	0.05	0.05	46	2.4	0.003	0.2	5	0.005	<0.2	36.9
Willow																														
2011-PC1-SALI-STN1	150	0.017	0.07	161	<0.1	<0.1	5	2.59	14600	0.7	0.45	4.58	331	0.43	2620	71.2	0.38	1.56	1620	14400	0.06	<0.02	<10	46.3	0.01	<0.1	20	0.005	0.5	117
2011-PC1-SALI-STN3	109	0.019	0.05	11.3	<0.1	<0.1	13	2.48	16200	0.6	0.74	5.14	188	0.24	1880	89.8	0.48	6.5	1060	11000	0.69	<0.02	<10	14.3	0.003	<0.1	19	<0.002	0.3	176
2011-PC2-SALI-STN1	89	0.009	0.05	44.4	<0.1	<0.1	3	2.15	5690	0.2	1.52	5.66	95	0.12	2420	1520	0.12	2.14	4040	7160	0.05	<0.02	25	23.3	0.002	<0.1	5	<0.002	<0.2	107
2011-PC3-SALI-STN1-A	131	0.007	0.05	13.3	<0.1	<0.1	8	6.91	7520	0.6	0.53	4.73	236	0.14	2120	359	0.07	2.3	1710	9770	0.05	<0.02	<10	9.3	<0.002	<0.1	16	0.002	0.4	237
2011-PC4-SALI-STN1	20	0.009	0.05	21.7	<0.1	<0.1	10	2.27	12500	<0.2	0.2	3.69	75	0.12	4950	153	0.16	0.81	916	4960	0.05	<0.02	<10	37.4	<0.002	0.2	1	<0.002	<0.2	194
2011-PC6-SALI-STN1	20	0.007	0.05	367	<0.1	<0.1	7	2.79	25800	<0.2	0.35	5.61	68	0.1	3740	62.3	<0.05	8.66	2120	4870	0.39	<0.02	<10	160	<0.002	<0.1	1	<0.002	<0.2	163

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RDL	1	0.005	0.05	0.1	0.1	0.1	2	0.01	10	0.2	0.02	0.05	10	0.01	10	0.1	0.05	0.05	10	10	0.05	0.02	10	0.1	0.002	0.1	1	0.002	0.2	0.2
2011-PC6-SALI-STN2	27	0.007	0.05	22.7	<0.1	<0.1	8	16.7	16100	<0.2	0.3	2.68	86	0.11	7080	132	0.52	0.46	843	3040	0.6	<0.02	<10	80.3	<0.002	<0.1	2	0.003	<0.2	362
2011-PC7-SALI-STN1	43	0.022	0.07	27.2	<0.1	<0.1	5	3.37	13200	<0.2	0.23	3.79	134	0.17	5560	369	0.35	2.26	1840	6800	0.05	<0.02	<10	68.1	<0.002	<0.1	2	0.004	<0.2	282
2011-PC7-SALI-STN2	40	0.034	0.08	33	<0.1	<0.1	7	7.15	14700	<0.2	0.32	3.98	138	0.18	3730	231	0.26	0.49	1050	7110	0.05	<0.02	<10	40.5	<0.002	<0.1	3	0.004	<0.2	236
2011-PC8-SALI-STN1	84	0.025	0.1	45.7	<0.1	<0.1	10	3.14	12400	0.5	0.19	4.6	220	0.22	3390	65.8	0.43	1.91	1050	7500	0.22	<0.02	<10	36.3	<0.002	<0.1	7	0.006	0.3	252
2011-PC9-SALI-STN2	344	0.012	0.06	6.2	<0.1	<0.1	6	1.32	8020	1.7	0.69	6.71	546	0.17	2780	236	<0.05	4.12	1730	6910	0.05	<0.02	<10	6.8	<0.002	<0.1	68	0.005	1.1	116
2011-PC9-SALI-STN3	243	0.011	0.05	6.5	<0.1	<0.1	8	0.79	12600	1.2	0.78	6.48	358	0.16	5010	133	0.07	6.68	1560	9850	0.05	<0.02	<10	7.4	<0.002	<0.1	40	0.003	0.7	53.3
2011-MS2-SALI-STN1	76	0.124	0.16	56.3	<0.1	<0.1	14	0.29	9950	0.3	0.09	5.44	164	1.83	1470	38.4	0.12	0.43	1630	7320	0.22	0.06	<10	33.4	0.005	<0.1	9	0.005	<0.2	103
2011-MS2-SALI-STN3	40	0.058	0.06	57	<0.1	<0.1	10	0.23	12800	<0.2	0.06	3.85	108	0.95	1740	48.2	0.27	0.58	2360	7440	0.2	0.07	<10	31.8	<0.002	<0.1	4	<0.002	<0.2	122
2011-MS2-SALI-STN4	79	0.064	0.09	30.2	<0.1	<0.1	3	0.13	11000	0.3	0.13	1.87	173	1.15	2970	46.4	0.46	0.27	1950	6850	0.09	0.04	<10	40.3	0.003	<0.1	10	0.004	0.2	104
2011-MS2-SALI-STN5	49	0.04	0.07	41.4	<0.1	<0.1	4	1.32	10600	0.2	1.03	6.32	112	0.66	3520	88	0.36	7.35	3370	10100	0.43	0.03	<10	36	<0.002	<0.1	5	<0.002	<0.2	111
2011-MS3-SALI-STN1	24	0.02	0.05	8.5	<0.1	<0.1	4	0.1	11400	<0.2	0.18	2.62	58	0.27	2780	25.8	0.12	0.21	2260	7590	0.25	0.05	<10	37.9	<0.002	<0.1	3	0.002	<0.2	116
2011-MS3-SALI-STN2	103	0.035	0.06	9.5	<0.1	<0.1	7	0.04	11600	0.4	0.11	2.15	208	0.56	2940	60.2	0.12	0.36	1460	6380	0.48	<0.02	<10	33.4	<0.002	<0.1	17	0.005	0.3	162
2011-MS3-SALI-STN3	20	0.012	0.05	10	<0.1	<0.1	11	9.81	10300	<0.2	0.13	3.52	56	0.25	1630	328	0.09	0.22	3060	10300	0.15	<0.02	<10	20.9	<0.002	<0.1	2	<0.002	<0.2	140
2011-MS3-SALI-STN4	75	0.018	0.05	31.2	<0.1	<0.1	6	2.6	13300	0.3	0.32	5.6	137	0.35	1850	45.5	0.21	1.2	1710	5700	0.08	<0.02	<10	25.3	<0.002	<0.1	6	0.002	0.2	172
2011-MS3-SALI-STN5	152	0.059	0.07	45.4	<0.1	<0.1	3	3.48	12800	0.7	0.32	6.03	270	0.8	3200	85.9	0.13	1.22	2010	6040	0.07	0.06	<10	39.9	0.003	<0.1	18	0.003	0.4	152
2011-MS5-SALI-STN2-A	30	0.036	0.05	19.4	<0.1	<0.1	15	1.06	14700	<0.2	0.38	4.21	93	0.35	2060	118	0.41	0.64	1180	9500	0.17	<0.02	<10	26.4	<0.002	<0.1	4	0.003	<0.2	157
2011-MS6-SALI-STN1	65	0.301	0.25	41.8	<0.1	<0.1	5	23.4	8010	0.4	0.36	11.4	165	6.18	1840	344	0.33	1.92	2540	6080	0.75	0.13	<10	27.3	0.011	<0.1	4	0.007	<0.2	795
2011-MS6-SALI-STN2	65	0.282	0.36	50.9	<0.1	<0.1	<2	17.9	15900	0.3	0.31	11.5	190	5.39	3640	88	3.02	8.29	5040	4480	10.3	0.13	<10	47.8	0.012	<0.1	4	0.006	<0.2	290
2011-MC1-SALI-STN1-A	38	0.019	0.05	83.3	<0.1	<0.1	5	3.38	16600	0.2	0.26	3.79	82	0.42	2010	66.7	0.35	0.47	1130	6950	0.07	<0.02	<10	41	0.002	<0.1	6	<0.002	<0.2	144
2011-MC1-SALI-STN2	39	0.023	0.05	28	<0.1	<0.1	6	5.83	17500	0.5	1	5.18	97	0.41	3220	218	0.33	2.08	1780	9460	0.19	<0.02	<10	28.8	<0.002	<0.1	5	<0.002	<0.2	184
2011-MC1-SALI-STN3	25	0.015	0.05	37.4	<0.1	<0.1	12	9.39	21700	0.3	0.9	9.92	82	0.31	2250	748	0.18	2.23	2150	11600	0.24	<0.02	<10	33.8	<0.002	<0.1	3	<0.002	<0.2	490
2011-MC1-SALI-STN4	52	0.032	0.05	59.6	<0.1	<0.1	<2	0.63	7590	0.8	1	4.42	96	0.46	3520	40.7	0.13	1.43	1340	7170	0.06	<0.02	<10	24.1	<0.002	<0.1	6	0.002	<0.2	59.4
2011-MC1-SALI-STN5	42	0.016	0.05	225	<0.1	<0.1	2	6.67	15300	<0.2	0.8	3.69	49	0.19	4790	313	0.19	17.3	4510	7790	0.11	<0.02	<10	61.5	<0.002	<0.1	1	<0.002	<0.2	215
2011-MC2-SALI-STN1	110	0.01	0.11	152	<0.1	<0.1	10	0.84	9330	0.3	0.33	4.16	223	0.16	3100	162	0.47	2.31	1300	12700	1	0.06	<10	38.8	0.003	<0.1	6	0.021	0.2	35.4
2011-MC2-SALI-STN2	15	0.015	0.05	83.3	<0.1	<0.1	8	6.04	19600	0.2	0.5	4.56	59	0.22	5290	212	0.7	4.23	5150	11300	0.24	<0.02	<10	43	0.007	<0.1	1	<0.002	<0.2	256
2011-MC2-SALI-STN3	13	0.01	0.05	36	<0.1	<0.1	4	2.42	13100	<0.2	0.3	2.64	78	0.17	2690	811	1.03	0.5	2260	5130	0.07	<0.02	<10	21.7	<0.002	<0.1	1	<0.002	<0.2	106
2011-MC2-SALI-STN4	25	0.014	0.05	192	<0.1	<0.1	7	6.81	9710	<0.2	2.89	2.87	88	0.21	2820	1430	0.48	6.37	3160	5250	0.06	<0.02	13	62.4	<0.002	<0.1	1	<0.002	<0.2	272
2011-MC3-SALI-STN1	11	0.009	0.05	28.8	<0.1	<0.1	4	4.06	10500	0.2	0.46	3.55	40	0.15	1350	373	0.22	2.59	5540	9820	0.07	<0.02	<10	23.1	<0.002	<0.1	<1	<0.002	<0.2	155
2011-MC3-SALI-STN3-A	7	0.009	0.05	68	<0.1	<0.1	12	7.24	17500	<0.2	0.32	2.92	45	0.11	4700	266	0.31	1.24	1700	5620	0.67	<0.02	<10	42.3	0.002	<0.1	<1	<0.002	<0.2	66.5
2011-MC4-SALI-STN2	34	0.015	0.05	176	<0.1	<0.1	2	2.9	12300	0.4	0.69	5.61	63	0.25	885	945	0.23	2.23	4900	11700	0.05	<0.02	<10	50.5	<0.002	<0.1	2	<0.002	<0.2	180

Appendix D

Summary of Statistical Comparisons for Metals Levels in Vegetation

Statistical summary of the comparisons made for mean total metal concentrations found in Horsetail (*Equisetum arvense*) between study areas, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA vs PCSA	0.05	0.089	3.175	4.325	Accepted
	MSSA vs MCRA	0.05	0.148	2.252	4.325	Accepted
	PCSA vs MCRA	0.05	0.414	0.694	4.301	Accepted
Cd	MSSA vs PCSA	0.05	0.146	2.280	4.325	Accepted
	MSSA vs MCRA	0.05	0.267	1.302	4.325	Accepted
	PCSA vs MCRA	0.05	0.139	2.360	4.301	Accepted
Cu	MSSA vs PCSA	0.05	0.985	0.0003	4.325	Accepted
	MSSA vs MCRA	0.05	0.827	0.0490	4.325	Accepted
	PCSA vs MCRA	0.05	0.819	0.0535	4.301	Accepted
Pb	MSSA vs PCSA	0.05	0.021	6.2463	4.325	**Rejected**
	MSSA vs MCRA	0.05	0.053	4.2172	4.325	Accepted
	PCSA vs MCRA	0.05	0.154	2.1828	4.301	Accepted
Ni	MSSA vs PCSA	0.05	0.075	3.511	4.325	Accepted
	MSSA vs MCRA	0.05	0.637	0.230	4.325	Accepted
	PCSA vs MCRA	0.05	0.276	1.250	4.301	Accepted
Se	MSSA vs PCSA	0.05	0.055	4.144	4.325	Accepted
	MSSA vs MCRA	0.05	0.070	3.636	4.325	Accepted
	PCSA vs MCRA	0.05	0.167	2.045	4.301	Accepted
Zn	MSSA vs PCSA	0.05	0.249	1.406	4.325	Accepted
	MSSA vs MCRA	0.05	0.679	0.176	4.325	Accepted
	PCSA vs MCRA	0.05	0.459	0.567	4.301	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in Lichen (*Cladina stellaris*) between study areas, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA vs PCSA	0.05	0.124	2.608	4.414	Accepted
	MSSA vs MCRA	0.05	0.044	4.668	4.414	**Rejected**
	PCSA vs MCRA	0.05	0.000	22.322	4.414	**Rejected**
Cd	MSSA vs PCSA	0.05	0.063	3.933	4.414	Accepted
	MSSA vs MCRA	0.05	0.066	3.819	4.414	Accepted
	PCSA vs MCRA	0.05	0.904	0.015	4.414	Accepted
Cu	MSSA vs PCSA	0.05	0.137	2.4181	4.414	Accepted
	MSSA vs MCRA	0.05	0.100	3.0021	4.414	Accepted
	PCSA vs MCRA	0.05	0.179	1.9517	4.414	Accepted
Pb	MSSA vs PCSA	0.05	0.068	3.7835	4.414	Accepted
	MSSA vs MCRA	0.05	0.066	3.8265	4.414	Accepted

	PCSA vs MCRA	0.05	0.809	0.0605	4.414	Accepted
	MSSA vs PCSA	0.05	0.934	0.007	4.414	Accepted
	MSSA vs MCRA	0.05	0.075	3.566	4.414	Accepted
Ni	PCSA vs MCRA	0.05	0.044	4.689	4.414	**Rejected**
	MSSA vs PCSA	0.05	0.068	3.765	4.414	Accepted
	MSSA vs MCRA	0.05	0.067	3.795	4.414	Accepted
Se	PCSA vs MCRA	0.05	0.820	0.053	4.414	Accepted
	MSSA vs PCSA	0.05	0.052	4.315	4.414	Accepted
	MSSA vs MCRA	0.05	0.135	2.446	4.414	Accepted
Zn	PCSA vs MCRA	0.05	0.035	5.218	4.414	**Rejected**

Statistical summary of the comparisons made for mean total metal concentrations found in Willow (*Salix planifolia*) between study areas, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
	MSSA vs PCSA	0.05	0.103	2.888	4.301	Accepted
As	MSSA vs MCRA	0.05	0.071	3.601	4.301	Accepted
	PCSA vs MCRA	0.05	0.404	0.725	4.301	Accepted
	MSSA vs PCSA	0.05	0.783	0.078	4.301	Accepted
Cd	MSSA vs MCRA	0.05	0.887	0.021	4.301	Accepted
	PCSA vs MCRA	0.05	0.801	0.065	4.301	Accepted
	MSSA vs PCSA	0.05	0.568	0.3368	4.301	Accepted
Cu	MSSA vs MCRA	0.05	0.397	0.7446	4.301	Accepted
	PCSA vs MCRA	0.05	0.589	0.3012	4.301	Accepted
	MSSA vs PCSA	0.05	0.028	5.5491	4.301	**Rejected**
	MSSA vs MCRA	0.05	0.037	4.9561	4.301	**Rejected**
Pb	PCSA vs MCRA	0.05	0.093	3.0873	4.301	Accepted
	MSSA vs PCSA	0.05	0.275	1.253	4.301	Accepted
	MSSA vs MCRA	0.05	0.291	1.172	4.301	Accepted
Ni	PCSA vs MCRA	0.05	0.786	0.075	4.301	Accepted
	MSSA vs PCSA	0.05	0.285	1.199	4.301	Accepted
	MSSA vs MCRA	0.05	0.316	1.054	4.301	Accepted
Se	PCSA vs MCRA	0.05	0.622	0.250	4.301	Accepted
	MSSA vs PCSA	0.05	0.863	0.031	4.301	Accepted
	MSSA vs MCRA	0.05	0.746	0.108	4.301	Accepted
Zn	PCSA vs MCRA	0.05	0.803	0.064	4.301	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in Horsetail (*Equisetum arvense*) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA (2009/10 vs 2011)	0.05	0.162	2.092	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.570	0.331	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.627	0.243	4.301	Accepted
Cd	MSSA (2009/10 vs 2011)	0.05	0.149	2.225	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.422	0.664	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.132	2.444	4.301	Accepted
Cu	MSSA (2009/10 vs 2011)	0.05	0.817	0.0550	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.548	0.3695	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.310	1.0788	4.301	Accepted
Pb	MSSA (2009/10 vs 2011)	0.05	0.026	5.6898	4.279	**Rejected**
	PCSA (2009/10 vs 2011)	0.05	0.016	6.6384	4.210	**Rejected**
	MCRA (2010 vs 2011)	0.05	0.351	0.9091	4.301	Accepted
Ni	MSSA (2009/10 vs 2011)	0.05	0.522	0.423	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.272	1.256	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.625	0.246	4.301	Accepted
Se	MSSA (2009/10 vs 2011)	0.05	0.742	0.111	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.595	0.290	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.468	0.546	4.301	Accepted
Zn	MSSA (2009/10 vs 2011)	0.05	0.170	2.010	4.279	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.744	0.109	4.210	Accepted
	MCRA (2010 vs 2011)	0.05	0.145	2.279	4.301	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in Lichen (Cladina stellaris) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA (2009/10 vs 2011)	0.05	0.051	4.254	4.301	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.0002	18.086	4.183	**Rejected**
	MCRA (2010 vs 2011)	0.05	0.030	5.553	4.414	**Rejected**
Cd	MSSA (2009/10 vs 2011)	0.05	0.094	3.069	4.301	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.091	3.064	4.183	Accepted
	MCRA (2010 vs 2011)	0.05	0.464	0.559	4.414	Accepted
Cu	MSSA (2009/10 vs 2011)	0.05	0.063	3.8435	4.301	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.005	9.3276	4.183	**Rejected**
	MCRA (2010 vs 2011)	0.05	0.001	14.0446	4.414	**Rejected**
Pb	MSSA (2009/10 vs 2011)	0.05	0.042	4.6710	4.301	**Rejected**
	PCSA (2009/10 vs 2011)	0.05	0.000	27.1714	4.183	**Rejected**

	MCRA (2010 vs 2011)	0.05	0.001	15.8181	4.414	**Rejected**
	MSSA (2009/10 vs 2011)	0.05	0.416	0.686	4.301	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.541	0.383	4.183	Accepted
Ni	MCRA (2010 vs 2011)	0.05	0.009	8.608	4.414	**Rejected**
	MSSA (2009/10 vs 2011)	0.05	0.049	4.340	4.301	**Rejected**
	PCSA (2009/10 vs 2011)	0.05	*	*	*	*
Se	MCRA (2010 vs 2011)	0.05	0.105	2.906	4.414	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.054	4.126	4.301	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.011	7.436	4.183	**Rejected**
Zn	MCRA (2010 vs 2011)	0.05	0.215	1.649	4.414	Accepted

*The Reportable Detection Limit (RDL) differed slightly between years. Since the majority of values were at the detection limit, the "rejected' result was based on this difference, rather than an actual difference between mean metal concentration.

Statistical summary of the comparisons made for mean total metal concentrations found in Willow (Salix planifolia) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
	MSSA (2009/10 vs 2011)	0.05	0.611	0.265	4.242	Accepted
As	PCSA (2009/10 vs 2011)	0.05	0.120	2.544	4.139	Accepted
	MCRA (2010 vs 2011)	0.05	*	*	*	*
	MSSA (2009/10 vs 2011)	0.05	0.130	2.454	4.242	Accepted
Cd	PCSA (2009/10 vs 2011)	0.05	0.618	0.254	4.139	Accepted
	MCRA (2010 vs 2011)	0.05	0.094	3.066	4.301	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.238	1.4622	4.242	Accepted
Cu	PCSA (2009/10 vs 2011)	0.05	0.907	0.0137	4.139	Accepted
	MCRA (2010 vs 2011)	0.05	0.539	0.3899	4.301	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.074	3.4846	4.242	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.011	7.3519	4.139	**Rejected**
Pb	MCRA (2010 vs 2011)	0.05	0.128	2.4983	4.301	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.928	0.008	4.242	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.355	0.881	4.139	Accepted
Ni	MCRA (2010 vs 2011)	0.05	0.994	0.00005	4.301	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.296	1.139	4.242	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.585	0.303	4.139	Accepted
Se	MCRA (2010 vs 2011)	0.05	0.731	0.121	4.301	Accepted
	MSSA (2009/10 vs 2011)	0.05	0.945	0.005	4.242	Accepted
	PCSA (2009/10 vs 2011)	0.05	0.397	0.737	4.139	Accepted
Zn	MCRA (2010 vs 2011)	0.05	0.315	1.056	4.301	Accepted

*The Reportable Detection Limit (RDL) differed slightly between years. Since the majority of values were at the detection limit, the "rejected' result was based on this difference, rather than an actual difference between mean metal concentration.

Appendix E

Total Metals Levels in Small Mammals – Summary Data

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Redback Vole (Whole Body)																														
2011-CLRU-MCRA04-05	10.5	<0.001	0.01	11.2	<0.02	<0.02	0.4	0.155	7630	0.05	0.035	2.67	79	0.029	400	12.1	0.14	0.1	6880	2930	0.3	<0.004	1220	4.34	0.0006	<0.02	0.8	0.0021	<0.04	25.2
2011-CLRU-MCRA04-07	2.6	0.002	0.02	6.77	<0.02	<0.02	0.5	0.112	6880	0.04	0.034	2.74	59	0.064	388	7.5	0.17	0.12	5930	2690	0.28	<0.004	1030	3.54	<0.0004	<0.02	0.5	<0.0004	<0.04	25.9
2011-CLRU-MCRA04-08	2.9	<0.001	0.03	14.3	<0.02	<0.02	1	0.104	7640	0.1	0.046	3.1	66	0.624	418	24.3	0.12	0.13	6700	3360	0.3	<0.004	1150	4.62	0.0007	<0.02	0.4	<0.0004	<0.04	27.9
2011-CLRU-MCRA04-10	5.1	0.002	0.02	6.14	<0.02	<0.02	0.6	0.118	4440	0.05	0.039	2.84	73	0.02	447	8.83	0.17	0.12	6620	2990	0.27	<0.004	1060	3.49	<0.0004	<0.02	0.3	0.0005	<0.04	29.7
2011-CLRU-MCRA04-11	3.9	<0.001	0.01	6.99	<0.02	<0.02	0.4	0.045	3530	0.09	0.031	2.62	59	<0.002	464	8.97	0.14	0.09	7340	3230	0.27	<0.004	1030	2.81	<0.0004	0.03	0.3	<0.0004	<0.04	32.8
2011-CLRU-MCRA04-12	23.6	0.002	0.02	24.9	<0.02	<0.02	<0.4	0.06	9500	0.2	0.068	2.14	98	0.047	520	8.59	0.14	0.15	8230	2700	0.2	<0.004	975	8.19	<0.0004	0.05	1.8	0.0043	<0.04	28.5
2011-CLRU-MCRA04-13	10.6	0.002	0.02	10.4	<0.02	<0.02	<0.4	0.02	8510	0.04	0.031	2.23	75	0.1	518	6.24	0.09	0.07	8060	2730	0.24	<0.004	936	2.77	<0.0004	0.03	0.8	0.0014	<0.04	30.1
2011-CLRU-MCRA04-14	4.3	0.002	0.02	14.1	<0.02	<0.02	<0.4	0.025	8640	0.07	0.031	2.34	72	0.011	467	5.48	0.11	0.06	8250	2690	0.29	<0.004	1020	3.29	<0.0004	0.05	0.5	0.0008	<0.04	29.8
2011-CLRU-MCRA04-18	14.1	0.002	0.06	9.44	<0.02	<0.02	0.6	0.075	6140	0.06	0.05	3.2	101	0.123	361	17.3	0.17	0.15	5540	3240	0.35	0.014	991	2.84	0.0006	<0.02	1.1	0.0042	<0.04	25.6
2011-CLRU-MCRA04-20	27.6	0.001	0.06	12.7	<0.02	<0.02	0.5	0.087	6530	0.21	0.069	2.91	106	0.061	426	20.5	0.15	0.18	6360	2980	0.26	<0.004	1080	4.25	0.0004	<0.02	1.6	0.0095	<0.04	28.3
2011-CLRU-MCRA04-23	26.6	0.001	0.03	12.5	<0.02	<0.02	0.8	0.067	4670	0.05	0.041	3.04	83	0.07	358	19.2	0.15	0.15	5310	2780	0.23	0.006	1150	3.86	0.0006	<0.02	1.2	0.0067	<0.04	24
2011-CLRU-MCRA04-24	3.4	0.001	0.02	13.7	<0.02	<0.02	<0.4	0.094	8830	<0.04	0.03	2.43	56	0.118	471	26.6	0.12	0.07	6760	3070	0.25	<0.004	1080	3.32	0.0005	<0.02	0.5	0.0005	<0.04	28
2011-CLRU-MCRA04-25	3.3	<0.001	0.02	8.39	<0.02	<0.02	0.9	0.227	5620	<0.04	0.038	3.01	80	0.065	429	13.1	0.22	0.11	6050	3120	0.3	<0.004	1150	2.91	0.0009	<0.02	0.2	<0.0004	<0.04	27
2011-CLRU-MCRA05-02	2.3	0.001	0.01	3.27	<0.02	<0.02	0.8	0.086	6160	<0.04	0.027	3.35	74	0.13	362	5.13	0.11	0.09	5670	2940	0.44	0.005	1080	2.08	0.0013	0.04	0.3	<0.0004	<0.04	26.1
2011-CLRU-MCRA05-03	3.6	0.001	0.02	3.81	<0.02	<0.02	0.8	0.063	6630	<0.04	0.039	2.58	76	0.07	344	15.2	0.09	0.13	5510	2520	0.38	0.009	1070	2.28	<0.0004	<0.02	0.6	<0.0004	<0.04	24.3
2011-CLRU-PCSA01-01	26.9	0.005	0.05	15	<0.02	<0.02	<0.4	0.024	6070	0.1	0.054	2.09	91	0.106	378	6.15	0.1	0.14	5850	2840	0.27	0.006	1070	3.09	0.004	<0.02	2.4	0.0023	0.05	22.9
2011-CLRU-PCSA01-02	11.6	0.002	0.03	8.76	<0.02	<0.02	<0.4	0.092	6310	<0.04	0.035	2.45	78	0.056	330	5.5	0.12	0.1	5300	2760	0.34	0.019	972	2.13	0.0033	0.03	1.1	0.0111	<0.04	25.1
2011-CLRU-PCSA01-04	18.7	0.001	0.04	8.07	<0.02	<0.02	<0.4	0.134	7340	0.11	0.074	2.89	101	0.054	413	7.36	0.09	0.13	6600	3290	0.34	0.042	1200	1.99	0.0027	0.02	1.6	0.0008	<0.04	28.8
2011-CLRU-PCSA01-08	12.9	0.002	0.05	10.7	<0.02	<0.02	<0.4	0.092	8590	0.07	0.053	3.32	86	0.078	416	5.02	0.15	0.13	6950	3200	0.5	0.111	1140	3.27	0.0172	0.03	1.4	0.002	<0.04	26.6
2011-CLRU-PCSA01-09	16.8	0.003	0.23	15.5	<0.02	<0.02	0.4	0.2	6240	0.06	0.056	2.82	99	0.073	351	8.14	0.15	0.15	5330	2960	0.97	0.026	1160	3.75	0.0136	<0.02	1.5	0.0025	<0.04	26.5
2011-CLRU-PCSA03-02	21.2	0.002	0.03	11.5	<0.02	<0.02	0.9	0.078	9070	0.16	0.066	3.42	99	0.07	472	21.9	0.19	0.24	7250	3220	0.2	0.004	1150	2.12	0.0009	<0.02	1.7	<0.0004	<0.04	30.4
2011-CLRU-PCSA03-04	12.5	0.003	0.05	13.1	<0.02	<0.02	1.4	0.035	6140	0.12	0.066	4.43	100	0.101	513	23.5	0.43	0.27	5610	3160	0.19	<0.004	1140	2.85	<0.0004	0.07	1.1	<0.0004	<0.04	24
2011-CLRU-PCSA03-05	5.4	<0.001	0.04	8.73	<0.02	<0.02	0.6	0.011	7500	<0.04	0.052	3.6	73	0.114	486	9.25	0.22	0.13	6560	3380	0.19	<0.004	1050	3.53	0.0005	0.03	0.6	<0.0004	<0.04	27.1
2011-CLRU-PCSA03-06	5.7	0.001	0.02	8.83	<0.02	<0.02	0.8	0.013	6590	0.09	0.046	3.08	85	0.051	450	11	0.13	0.19	6640	3360	0.16	<0.004	942	3.05	0.001	0.02	0.5	<0.0004	<0.04	25.4
2011-CLRU-PCSA03-07	8.7	0.001	0.02	8.49	<0.02	<0.02	1	0.015	8060	0.07	0.05	4.76	85	0.081	495	14.6	0.22	0.19	6730	3150	0.18	<0.004	1230	3.8	0.0007	0.06	0.8	<0.0004	<0.04	27
2011-CLRU-PCSA03-08	15.1	<0.001	0.02	15.2	<0.02	<0.02	1	0.093	8730	0.11	0.081	4.36	95	0.076	557	28	0.2	0.29	7350	3380	0.19	0.015	1150	3.61	0.0009	0.04	1.1	<0.0004	<0.04	38
2011-CLRU-PCSA03-09	14.7	<0.001	0.03	11.9	<0.02	<0.02	1.3	0.048	7670	0.1	0.065	3.34	96	0.081	496	12.8	0.3	0.21	6590	3410	0.19	<0.004	1140	3.15	0.0008	0.04	1.4	<0.0004	<0.04	29
2011-CLRU-PCSA06-01	1.4	0.001	<0.01	5.74	<0.02	<0.02	<0.4	0.063	6260	<0.04	0.026	2.71	82	0.043	331	4.99	0.06	0.06	5750	3000	0.56	0.007	1090	5.02	<0.0004	<0.02	0.5	0.0006	<0.04	24.7
2011-CLRU-PCSA06-02	4.5	0.002	<0.01	19.2	<0.02	<0.02	<0.4	0.069	9300	<0.04	0.029	2.28	71	0.057	397	12.2	0.13	0.08	7230	2510	0.34	<0.004	1180	5.94	0.0005	<0.02	0.7	0.0006	<0.04	27
2011-CLRU-MSSA01-02	17.4	0.002	0.04	7.89	<0.02	<0.02	0.7	0.066	6250	0.07	0.052	2.67	70	0.073	369	11.3	0.17	0.16	5670	3070	0.23	0.007	917	3.57	0.001	<0.02	1.6	0.001	<0.04	22.8
2011-CLRU-MSSA01-03	8.7	0.001	0.05	7.7	<0.02	<0.02	1	0.02	6470	0.05	0.046	2.52	71	0.161	365	10.2	0.15	0.11	5580	2930	0.21	<0.004	960	4.18	0.0008	0.03	0.8	<0.0004	<0.04	22.6
2011-CLRU-MSSA01-04	14.1	0.002	0.05	7.43	<0.02	<0.02	0.6	0.042	5560	0.07	0.052	2.71	67	0.06	360	14.3	0.12	0.13	5490	2970	0.18	0.01	973	3.79	0.0009	0.02	1.7	<0.0004	<0.04	25.6
2011-CLRU-MSSA01-07	18.5	0.003	0.05	7.37	<0.02	<0.02	0.8	0.03	9430	0.14	0.069	3.85	99	0.232	496	29.4	0.2	0.22	7040	3180	0.24	<0.004	1040	3.71	0.003	0.07	1.5	0.0005	<0.04	27
2011-CLRU-MSSA02-01	11.2	0.003	0.05	3.5	<0.02	<0.02	0.9	0.102	7630	0.07	0.052	3.3	98	0.255	429	5.71	0.28	0.11	6390	3030	0.44	<0.004	1180	3.49	<0.0004	0.14	1.1	<0.0004	<0.04	24.4
2011-CLRU-MSSA03-01	6.7	0.006	<0.01	9.69	<0.02	<0.02	0.4	0.032	5240	<0.04	0.045	3.31	89	0.122	390	25.5	0.19	0.15	5330	3010	0.2	0.006	1070	3.07	0.0038	<0.02	0.6	0.0005	<0.04	25.9
2011-CLRU-MSSA04-01	4.3	0.005	0.06	6.54	<0.02	<0.02	0.7	0.553	7520	0.05	0.043	3.17	67	0.247	418	10	0.2	0.15	6740	3020	0.36	0.012	1140	3.5	0.0053	0.04	0.4	<0.0004	<0.04	26.6
2011-CLRU-MSSA04-02	6.3	0.009	0.06	4.93	<0.02	<0.02	0.7	0.143	5600	<0.04	0.044	3.37	75	0.826	339	11.8	0.14	0.18	4970	2960	0.43	0.01	980	1.72	0.0042	0.02	0.5	0.0005	<0.04	25.2
2011-CLRU-MSSA04-03	7.5	0.006	0.06	5.84	<0.02	<0.02	0.7	0.5	5270	0.07	0.046	4.71	77	0.46	375	9.11	0.22	0.19	5030	3050	0.3	0.014	970	3.14	0.0054	<0.02	0.5	0.0022	<0.04	22.8

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-CLRU-MSSA04-04	7.7	0.01	0.06	8.34	<0.02	<0.02	0.9	0.206	6570	<0.04	0.05	4.25	86	0.302	411	25.9	0.19	0.19	5910	3220	0.58	0.019	1070	3.36	0.0017	0.02	0.6	0.0011	<0.04	26
2011-CLRU-MSSA04-05	10.9	0.008	0.05	6.16	<0.02	<0.02	1.3	0.69	5160	0.05	0.057	4.33	93	0.346	454	13	0.2	0.53	5010	3080	0.74	0.041	1130	2.97	0.0018	0.03	0.4	0.0085	<0.04	35.1
2011-CLRU-MSSA04-06	8	0.01	0.05	7.28	<0.02	<0.02	1	0.086	6810	0.08	0.033	2.89	70	0.337	440	10	0.28	0.18	6360	2780	0.27	0.016	1250	4.24	0.0031	0.05	0.6	0.0023	<0.04	23.8
2011-CLRU-MSSA04-07	21	0.021	0.07	8.89	<0.02	<0.02	0.7	0.224	10000	0.08	0.05	3.4	94	0.257	475	18.7	0.2	0.28	7510	2930	0.38	0.038	1070	3.66	0.0021	0.02	1.6	0.0041	0.04	30.8
2011-CLRU-MSSA06-01	24.2	0.047	0.07	19.9	<0.02	<0.02	0.9	0.183	7690	0.19	0.108	3.44	108	2.37	418	11.7	0.25	0.25	5960	2940	0.67	0.047	1150	3.94	0.021	<0.02	1.8	0.0028	<0.04	31.5
2011-CLRU-MSSA06-02	14.8	0.036	0.05	12.9	<0.02	<0.02	0.6	0.1	4750	0.04	0.061	3.38	90	0.728	327	13.6	0.18	0.18	4920	3200	0.83	0.039	921	3.52	0.0615	<0.02	0.8	0.0016	<0.04	26.4
Redback Vole (Kidney)																														
2011-CLRU-MCRA04-39 (KIDNEY)	<2	<0.01	0.05	1.4	<0.2	<0.2	<4	0.15	461	<0.4	<0.04	4.2	107	0.01	239	10.3	0.3	0.05	2860	3820	0.8	<0.04	1210	0.3	<0.004	<0.2	<2	<0.004	<0.4	24.4
2011-CLRU-MCRA04-41 (KIDNEY)	2	<0.005	0.05	0.7	<0.1	<0.1	<2	0.17	303	<0.2	0.04	5.07	68	0.01	275	14.4	0.2	0.07	3600	4150	0.7	<0.02	1170	0.2	<0.002	<0.1	<1	<0.002	<0.2	24.1
2011-CLRU-MCRA04-48 (KIDNEY)	<2	<0.01	0.05	0.7	<0.2	<0.2	<4	0.15	688	<0.4	0.1	5.5	89	0.01	287	16.7	0.7	0.05	3040	4050	0.9	<0.04	1230	0.4	<0.004	<0.2	<2	<0.004	<0.4	26.4
2011-CLRU-MCRA04-52 (KIDNEY)	<2	0.01	0.05	3.4	<0.2	<0.2	<4	0.66	316	<0.4	0.05	5.9	106	0.04	283	9.8	0.6	0.05	4060	4160	1.2	<0.04	1530	0.5	0.006	<0.2	<2	<0.004	<0.4	30.3
2011-CLRU-MCRA04-53 (KIDNEY)	1.5	0.004	0.02	1.91	<0.08	<0.08	<2	0.414	280	<0.2	0.07	5.43	116	0.03	263	13.5	0.5	0.11	3670	3680	1.05	<0.02	1370	0.33	0.005	<0.08	<0.8	<0.002	<0.2	28.1
2011-CLRU-MCRA04-54 (KIDNEY)	<4	<0.02	0.1	2.4	<0.4	<0.4	<8	0.14	931	<0.8	<0.08	5.8	190	0.04	342	30.4	0.3	0.1	3670	5200	1.1	<0.08	1440	<0.4	<0.008	<0.4	<4	<0.008	<0.8	32
2011-CLRU-MCRA04-57 (KIDNEY)	1	<0.004	0.02	0.39	<0.08	<0.08	<2	0.596	264	<0.2	0.07	4.42	94	0.01	264	2.48	0.35	0.09	3170	3880	0.83	<0.02	1170	0.11	0.003	<0.08	<0.8	<0.002	<0.2	26.6
2011-CLRU-MCRA04-58 (KIDNEY)	<2	<0.01	0.05	0.9	<0.2	<0.2	<4	0.39	329	<0.4	<0.04	7.1	105	0.1	229	9.7	0.7	0.1	3910	4550	1	<0.04	1360	0.3	0.008	<0.2	<2	<0.004	<0.4	26.8
2011-CLRU-MCRA05-15 (KIDNEY)	<4	<0.01	0.05	0.2	<0.2	<0.2	<4	0.28	91	<0.4	<0.04	4.6	118	0.01	400	4.4	0.4	0.05	4010	4250	1.2	<0.04	1350	<0.2	<0.004	<0.2	<2	<0.004	<0.4	25
2011-CLRU-MCRA05-25 (KIDNEY)	<2	<0.005	0.05	0.7	<0.1	<0.1	<2	0.08	330	<0.2	0.04	5.03	87	0.01	280	10.3	0.57	0.08	3070	3940	0.92	<0.02	1230	0.3	<0.002	<0.1	<1	<0.002	<0.2	25.1
2011-CLRU-PCSA01-10 (KIDNEY)	2	<0.006	0.03	0.9	<0.1	<0.1	<2	0.13	415	<0.2	0.11	5.36	137	0.05	313	9	0.5	0.09	3570	4120	0.86	<0.02	1410	0.2	0.007	<0.1	<1	<0.002	<0.2	26.8
2011-CLRU-PCSA01-13 (KIDNEY)	1	<0.006	0.03	0.7	<0.1	<0.1	<2	0.53	252	<0.2	0.07	6.21	131	0.08	330	6	0.62	0.14	4490	4080	0.83	<0.02	1540	0.2	<0.002	<0.1	<1	<0.002	<0.2	31.1
2011-CLRU-PCSA01-15 (KIDNEY)	1	<0.007	0.07	1.7	<0.1	<0.1	<3	1.01	262	<0.3	0.07	6.8	116	0.05	335	9.7	0.83	0.08	5000	4970	1.64	<0.03	1640	0.3	0.01	<0.1	<1	<0.003	<0.3	34.1
2011-CLRU-PCSA01-18 (KIDNEY)	<0.4	<0.002	0.01	0.26	<0.04	<0.04	<0.8	1.74	229	<0.08	0.054	5.24	103	0.01	254	3.76	0.32	0.05	3350	3440	0.72	<0.008	1090	0.34	<0.0008	<0.04	<0.4	<0.0008	<0.08	26.6
2011-CLRU-PCSA01-24 (KIDNEY)	1	<0.006	0.03	1.9	<0.1	<0.1	<2	0.23	311	<0.2	0.05	5.46	89	0.06	253	4.2	0.34	0.15	3480	3570	0.94	<0.02	1360	0.4	0.013	<0.1	<1	<0.002	<0.2	22.1
2011-CLRU-PCSA01-30 (KIDNEY)	1	<0.007	0.07	0.5	<0.1	<0.1	<3	0.5	318	<0.3	0.05	5.87	97	0.02	279	3.3	0.61	0.035	3460	4190	1.17	<0.03	1340	0.2	<0.003	<0.1	<1	<0.003	<0.3	27.3
2011-CLRU-PCSA01-31 (KIDNEY)	2	<0.007	0.07	1.4	<0.1	<0.1	<3	0.38	218	<0.3	0.06	5.4	95	0.05	260	4.9	0.54	0.1	3690	4060	1.01	<0.03	1470	0.2	0.036	<0.1	<1	<0.003	<0.3	29.4
2011-CLRU-PCSA01-33 (KIDNEY)	1.5	<0.004	0.02	0.66	<0.08	<0.08	<2	1.53	130	<0.2	0.03	5.21	126	0.058	218	3.23	0.58	0.04	3770	4040	1.33	<0.02	1310	0.18	0.004	<0.08	<0.8	<0.002	<0.2	32.3
2011-CLRU-PCSA03-03 (KIDNEY)	3	<0.005	0.05	0.8	<0.1	<0.1	<2	0.2	233	<0.2	0.12	5.93	144	0.03	317	20.4	0.44	0.18	4120	4260	0.79	<0.02	1340	0.3	<0.002	<0.1	<1	<0.002	<0.2	29.4
2011-CLRU-PCSA03-12 (KIDNEY)	<2	<0.01	0.05	1.1	<0.2	<0.2	<4	0.25	360	<0.4	0.12	6.8	109	0.12	359	26.4	0.4	0.1	4990	5070	1	<0.04	1640	0.4	<0.004	<0.2	<2	<0.004	<0.4	34.3
2011-CLRU-PCSA03-14 (KIDNEY)	0.7	<0.003	0.03	1.03	<0.06	<0.06	<1	1.83	232	<0.1	0.08	4.52	104	0.029	238	10.6	0.43	0.07	3410	3660	0.7	<0.01	1110	0.27	0.002	<0.06	<0.6	<0.001	<0.1	26.4
2011-CLRU-PCSA03-15 (KIDNEY)	4	<0.005	0.05	0.2	<0.1	<0.1	<2	0.06	405	<0.2	0.12	5.16	121	0.03	246	6.6	0.71	0.18	2700	3370	0.52	<0.02	1370	0.2	<0.002	<0.1	<1	<0.002	<0.2	22.9
2011-CLRU-PCSA03-18 (KIDNEY)	12.6	0.006	0.01	2.44	<0.02	<0.02	0.8	0.045	720	0.41	0.105	7.78	158	0.168	522	23.7	0.76	0.53	4380	5400	0.55	<0.004	1650	0.7	<0.0004	0.04	<0.2	0.0017	<0.04	30.9
2011-CLRU-PCSA03-21 (KIDNEY)	3	<0.005	0.05	0.6	<0.1	<0.1	<2	0.24	199	<0.2	0.07	5.34	135	0.04	328	15.1	0.69	0.23	4020	4300	0.74	<0.02	1420	0.2	<0.002	<0.1	<1	<0.002	<0.2	29.9
2011-CLRU-PCSA03-22 (KIDNEY)	2	0.007	0.05	0.7	<0.1	<0.1	<2	0.13	219	<0.2	0.08	5.18	130	0.09	298	11.5	0.52	0.28	3540	3730	0.6	<0.02	1390	0.2	0.002	<0.1	<1	<0.002	<0.2	22.8
2011-CLRU-PCSA03-27 (KIDNEY)	3	<0.01	0.05	2.9	<0.2	<0.2	<4	0.06	269	<0.4	0.08	6.6	135	0.04	387	22.7	0.3	0.2	4640	4940	0.8	<0.04	1560	0.3	<0.004	<0.2	<2	<0.004	<0.4	33.7
2011-CLRU-PCSA03-29 (KIDNEY)	0.9	<0.003	0.03	1.34	<0.06	<0.06	<1	0.338	193	<0.1	0.07	4.67	122	0.025	241	13.4	0.49	0.11	3750	3900	0.61	<0.01	1180	0.17	0.003	<0.06	<0.6	<0.001	<0.1	24.4
2011-CLRU-PCSA03-30 (KIDNEY)	2	0.007	0.03	0.8	<0.1	<0.1	<2	0.04	259	<0.2	0.05	4.98	135	0.02	274	10.5	0.68	0.1	3700	3960	0.61	<0.02	1520	0.3	0.003	<0.1	<1	<0.002	<0.2	25
2011-CLRU-PCSA03-31 (KIDNEY)	2	<0.005	0.05	1.1	<0.1	<0.1	<2	0.53	229	<0.2	0.11	5.27	104	0.09	264	12.8	0.5	0.09	3580	3570	0.79	<0.02	1030	0.3	<0.002	<0.1	<1	<0.002	<0.2	28.1
2011-CLRU-PCSA03-32 (KIDNEY)	3	0.003	0.03	0.46	<0.05	<0.05	<1	0.26	130	<0.1	0.09	5.01	102	0.027	233	6.21	0.54	0.07	3470	3610	0.62	<0.01	1190	0.09	0.001	<0.05	<0.5	<0.001	<0.1	26.3
2011-CLRU-PCSA03-38 (KIDNEY)	<0.7	<0.004	0.02	0.95	<0.07	<0.07	<1	1.28	143	<0.1	0.06	4.18	80	0.02	225	9.13	0.52	0.07	3590	3590	0.52	<0.01	1100	0.17	<0.001	<0.07	<0.7	<0.001	<0.1	23.8
2011-CLRU-MSSA01-10 (KIDNEY)	1	0.006	0.05	0.23	<0.09	<0.09	<2	0.245	144	<0.2	0.08	5.71	165	0.062	195	2.32	1.01	0.05	3810	3870	1.16	<0.02	1400	<0.09	0.002	<0.09	<0.9	<0.002	<0.2	29.6

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-CLRU-MSSA01-11 (KIDNEY)	1.6	0.004	0.03	1.11	<0.06	<0.06	<1	0.212	243	<0.1	0.1	5.19	133	0.024	290	29.4	0.36	0.16	3880	4180	0.98	0.03	1470	0.3	0.009	<0.06	<0.6	<0.001	<0.1	25.6
2011-CLRU-MSSA01-13 (KIDNEY)	1	0.007	0.05	0.2	<0.1	<0.1	<2	0.07	86	<0.2	0.06	5.38	108	0.08	210	6.9	0.37	0.1	3910	3910	1.02	<0.02	1090	0.1	<0.002	<0.1	<1	<0.002	<0.2	28.6
2011-CLRU-MSSA01-17 (KIDNEY)	3	0.007	0.03	0.7	<0.1	<0.1	<2	0.07	131	<0.2	0.05	4.82	124	0.07	221	7	0.52	0.08	3900	3960	0.97	<0.02	1300	0.1	0.005	<0.1	<1	<0.002	<0.2	27.7
2011-CLRU-MSSA02-02 (KIDNEY)	6	<0.007	0.07	0.4	<0.1	<0.1	<3	0.55	321	<0.3	0.06	5.41	120	0.23	350	12.4	0.63	0.11	4090	4200	1.27	<0.03	1670	0.5	<0.003	<0.1	<1	<0.003	<0.3	29.2
2011-CLRU-MSSA02-03 (KIDNEY)	4	<0.006	0.03	0.3	<0.1	<0.1	<2	0.39	227	<0.2	0.08	5.57	104	0.02	329	14.8	0.23	0.07	4640	4850	0.83	<0.02	1610	0.2	<0.002	<0.1	<1	<0.002	<0.2	33.3
2011-CLRU-MSSA04-08 (KIDNEY)	2	0.009	0.04	0.7	<0.2	<0.2	<3	0.44	179	<0.3	0.05	5.07	90	0.25	261	9.1	0.6	0.17	3270	3530	0.9	<0.03	1530	0.3	<0.003	<0.2	<2	<0.003	<0.3	22.3
2011-CLRU-MSSA04-09 (KIDNEY)	2	<0.008	0.04	0.7	<0.2	<0.2	<3	0.23	189	<0.3	0.07	5.9	115	0.26	269	10.7	0.62	0.27	3930	4010	1.02	<0.03	1340	<0.2	0.007	<0.2	<2	<0.003	<0.3	27.5
2011-CLRU-MSSA04-10 (KIDNEY)	2	<0.007	0.07	0.5	<0.1	<0.1	<3	0.23	157	<0.3	0.04	5.27	106	0.88	257	9.3	0.7	0.21	3440	3940	1.11	<0.03	1250	0.2	0.009	<0.1	<1	<0.003	<0.3	26.2
2011-CLRU-MSSA04-11 (KIDNEY)	<2	<0.008	0.04	1	<0.2	<0.2	<3	1.32	270	<0.3	0.05	5.49	62	0.11	276	19.8	0.58	0.22	3790	4440	1.32	0.05	1220	0.2	0.006	<0.2	<2	<0.003	<0.3	25.2
2011-CLRU-MSSA04-13 (KIDNEY)	3	0.006	0.05	0.74	<0.09	<0.09	<2	1.37	187	<0.2	0.06	5.21	84	0.186	286	10.1	0.31	0.23	4010	4030	1.91	<0.02	1150	0.16	0.006	<0.09	<0.9	<0.002	<0.2	27.7
2011-CLRU-MSSA04-17 (KIDNEY)	2	<0.007	0.05	0.9	<0.1	<0.1	<3	0.54	306	<0.3	0.05	5.25	208	0.14	290	10.9	0.61	0.15	3380	4090	1.91	<0.03	1420	0.2	0.004	<0.1	<1	<0.003	<0.3	27.6
2011-CLRU-MSSA04-22 (KIDNEY)	<1	<0.006	0.03	0.8	<0.1	<0.1	<2	0.43	216	<0.2	0.04	5.19	104	0.13	242	11.5	0.62	0.12	3720	3910	0.73	<0.02	1440	0.2	0.003	<0.1	<1	<0.002	<0.2	25.1
2011-CLRU-MSSA04-23 (KIDNEY)	22	<0.01	0.05	1.2	<0.2	<0.2	<5	0.36	303	<0.5	0.06	4.9	80	0.14	271	19	0.6	0.3	3670	3840	0.9	<0.05	1370	0.4	<0.005	<0.2	<2	<0.005	<0.5	20.6
2011-CLRU-MSSA04-24 (KIDNEY)	2	0.006	0.05	0.5	<0.1	<0.1	<2	0.54	182	<0.2	0.05	5.02	103	0.17	280	7.9	0.61	0.14	3830	3610	1.27	<0.02	1300	0.2	0.007	<0.1	<1	<0.002	<0.2	26.2
2011-CLRU-MSSA04-31 (KIDNEY)	1.8	0.005	0.02	0.28	<0.07	<0.07	<1	0.587	182	<0.1	0.05	4.96	88	0.126	307	11.2	0.54	0.21	3510	4110	0.61	0.02	1260	0.13	0.009	<0.07	<0.7	<0.001	<0.1	24.5
2011-CLRU-MSSA06-03 (KIDNEY)	4	0.005	0.05	2.3	<0.1	<0.1	<2	0.46	298	<0.2	0.08	4.71	106	0.67	248	25.3	0.25	0.18	3710	4250	1.18	<0.02	1420	0.4	0.061	<0.1	<1	<0.002	<0.2	22.3
2011-CLRU-MSSA06-04 (KIDNEY)	<4	<0.01	0.05	1.4	<0.2	<0.2	<4	0.12	278	<0.4	0.06	6	110	1.89	296	13	0.6	0.3	4260	4370	1.3	<0.04	1480	0.3	0.087	<0.2	<2	<0.004	<0.4	25
2011-CLRU-MSSA06-05 (KIDNEY)	5	0.013	0.05	2	<0.1	<0.1	<2	0.35	287	<0.2	0.07	5.92	118	0.85	416	18.3	0.68	0.3	3870	4340	1.25	0.03	1550	0.3	0.02	<0.1	<1	<0.002	<0.2	25.9
Redback Vole (Liver)																														
2011-CLRU-MCRA04-39 (LIVER)	<0.4	<0.002	0.01	1.18	<0.04	<0.04	<0.8	0.081	553	<0.08	0.024	2.56	139	0.004	230	8.28	0.45	0.03	2490	3340	0.42	<0.008	1100	0.23	<0.0008	<0.04	<0.4	<0.0008	<0.08	24.6
2011-CLRU-MCRA04-41 (LIVER)	0.8	<0.002	0.01	0.33	<0.04	<0.04	<0.8	0.088	252	<0.08	0.031	4.41	70	0.01	274	10.2	0.58	0.06	3520	3680	0.67	<0.008	1050	0.13	<0.0008	<0.04	0.5	<0.0008	<0.08	25.8
2011-CLRU-MCRA04-48 (LIVER)	<0.4	<0.002	0.03	0.62	<0.04	<0.04	<0.8	0.112	848	<0.08	0.07	3.35	109	0.01	253	10.5	0.93	0.05	2470	3520	0.57	<0.008	1130	0.31	0.0014	<0.04	<0.4	<0.0008	<0.08	27.1
2011-CLRU-MCRA04-52 (LIVER)	1.9	0.003	0.01	7.35	<0.04	<0.04	<0.8	0.347	323	<0.08	0.04	5.36	181	0.029	328	10.7	1.18	0.06	3590	3580	0.99	<0.008	1280	0.51	0.0025	<0.04	0.6	<0.0008	<0.08	29.8
2011-CLRU-MCRA04-53 (LIVER)	0.4	<0.001	0.01	0.96	<0.02	<0.02	<0.4	0.213	168	<0.04	0.037	3.79	157	0.005	235	6.74	1	0.05	3620	2840	0.77	0.004	979	0.19	0.0007	<0.02	0.5	<0.0004	<0.04	21.9
2011-CLRU-MCRA04-54 (LIVER)	1.8	<0.003	0.03	2.2	<0.06	<0.06	<1	0.064	549	<0.1	0.05	4.01	126	0.035	270	24	0.25	0.09	2660	4010	0.37	<0.01	1180	0.23	<0.001	<0.06	<0.6	<0.001	<0.1	23.8
2011-CLRU-MCRA04-57 (LIVER)	0.5	<0.001	0.01	0.21	<0.02	<0.02	<0.4	0.301	356	<0.04	0.048	3.09	101	0.003	247	2.09	0.83	0.05	2840	3590	0.75	0.007	1090	0.08	0.0011	<0.02	0.4	<0.0004	<0.04	23.5
2011-CLRU-MCRA04-58 (LIVER)	0.8	<0.002	0.01	0.36	<0.04	<0.04	<0.8	0.192	326	<0.08	0.024	4.69	120	0.011	211	6.96	1.15	0.04	2880	3480	0.75	<0.008	1090	0.17	0.0018	<0.04	0.4	<0.0008	<0.08	24.8
2011-CLRU-MCRA05-15 (LIVER)	<0.8	<0.002	0.01	0.14	<0.04	<0.04	<0.8	0.175	169	<0.08	0.026	4.85	252	0.008	197	2.26	1.11	0.01	3600	3410	1.24	<0.008	1190	0.09	<0.0008	<0.04	<0.4	<0.0008	<0.08	25.4
2011-CLRU-MCRA05-25 (LIVER)	0.6	<0.001	0.01	0.6	<0.02	<0.02	<0.4	0.044	458	<0.04	0.025	2.52	134	0.004	250	8.04	0.89	0.05	2540	3070	0.46	<0.004	960	0.23	0.0008	<0.02	<0.2	<0.0004	<0.04	24.8
2011-CLRU-PCSA01-10 (LIVER)	0.6	0.001	0.01	0.5	<0.02	<0.02	<0.4	0.072	270	<0.04	0.055	3.97	192	0.011	208	4.73	1.09	0.05	2530	3000	0.61	0.012	1030	0.1	0.0044	<0.02	<0.2	<0.0004	<0.04	22.6
2011-CLRU-PCSA01-13 (LIVER)	0.4	<0.001	0.01	0.34	<0.02	<0.02	<0.4	0.178	156	<0.04	0.039	5.3	249	0.009	238	3.02	1.12	0.05	3490	3060	0.74	<0.004	1140	0.13	0.0004	<0.02	<0.2	<0.0004	<0.04	27.4
2011-CLRU-PCSA01-15 (LIVER)	0.5	<0.002	0.01	0.69	<0.03	<0.03	<0.6	0.34	295	<0.06	0.038	3.77	113	0.01	245	5.8	1.3	0.02	3050	3100	1.06	0.007	1020	0.13	0.0044	<0.03	<0.3	<0.0006	<0.06	21.2
2011-CLRU-PCSA01-18 (LIVER)	0.4	0.001	0.01	0.21	<0.02	<0.02	<0.4	0.399	292	<0.04	0.056	4.51	145	0.003	268	3.63	0.61	0.03	3010	3260	0.44	<0.004	1050	0.28	0.0007	<0.02	<0.2	<0.0004	<0.04	23.5
2011-CLRU-PCSA01-24 (LIVER)	1.6	<0.002	0.01	1.52	<0.03	<0.03	<0.6	0.121	355	<0.06	0.035	4.82	140	0.024	250	3.98	1.26	0.1	3140	3230	0.95	<0.006	1270	0.32	0.0056	<0.03	<0.3	0.0013	<0.06	24.7
2011-CLRU-PCSA01-30 (LIVER)	0.5	<0.002	0.01	0.21	<0.03	<0.03	<0.6	0.341	262	<0.06	0.047	4.44	108	0.007	267	3.35	1.26	0.02	3180	3470	1.21	<0.006	1150	0.09	<0.0006	<0.03	<0.3	<0.0006	<0.06	28.9
2011-CLRU-PCSA01-31 (LIVER)	1	<0.002	0.01	0.81	<0.03	<0.03	<0.6	0.267	322	<0.06	0.054	4.84	184	0.016	266	4.23	1.66	0.04	3190	3660	1.12	0.012	1290	0.16	0.0088	<0.03	<0.3	0.0015	<0.06	31.9
2011-CLRU-PCSA01-33 (LIVER)	0.4	0.001	0.02	0.22	<0.02	<0.02	<0.4	0.839	76	<0.04	0.026	4.64	263	0.01	222	3.26	1.53	0.02	3370	3210	1.18	0.006	935	0.09	0.0023	<0.02	<0.2	<0.0004	<0.04	21.7
2011-CLRU-PCSA03-03 (LIVER)	0.6	0.001	0.01	0.3	<0.02	<0.02	<0.4	0.077	284	<0.04	0.073	3.65	66	0.005	274	7.64	0.94	0.05	3240	3410	0.32	<0.004	1150	0.1	<0.0004	<0.02	<0.2	<0.0004	<0.04	23
2011-CLRU-PCSA03-12 (LIVER)	0.3	0.001	0.01	0.37	<0.02	<0.02	<0.4	0.059	205	<0.04	0.063	4.92	105	0.015	254	10.2	1.35	0.03	3460	3290	0.56	<0.004	1110	0.12	0.0005	<0.02	<0.2	<0.0004	<0.04	28.2

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-CLRU-PCSA03-14 (LIVER)	0.3	<0.001	0.01	0.45	<0.02	<0.02	<0.4	0.51	195	<0.04	0.061	4.41	134	0.004	232	5.82	1.45	0.03	3580	3170	0.48	<0.004	991	0.13	<0.0004	<0.02	0.2	<0.0004	<0.04	24
2011-CLRU-PCSA03-15 (LIVER)	4.5	0.002	0.01	0.21	<0.02	<0.02	<0.4	0.046	329	<0.04	0.097	5.14	216	0.01	282	5.98	1.95	0.14	3350	3430	0.61	<0.004	1330	0.16	0.0004	<0.02	0.3	<0.0004	<0.04	27.3
2011-CLRU-PCSA03-18 (LIVER)	2	<0.007	0.07	1.5	<0.1	<0.1	<3	0.03	895	<0.3	0.05	6.72	176	0.05	374	9.2	1.12	0.11	3300	3940	0.4	<0.03	1310	0.5	<0.003	<0.1	<1	<0.003	<0.3	29.2
2011-CLRU-PCSA03-21 (LIVER)	1	0.002	0.01	0.32	<0.02	<0.02	<0.4	0.073	167	<0.04	0.064	4.88	194	0.01	319	8.41	1.3	0.09	4270	3510	0.5	<0.004	1210	0.13	0.0006	<0.02	0.2	<0.0004	<0.04	28.7
2011-CLRU-PCSA03-22 (LIVER)	1.2	0.002	0.01	0.34	<0.02	<0.02	<0.4	0.037	246	<0.04	0.058	3.87	100	0.012	265	5.82	1.13	0.08	3200	3180	0.39	<0.004	1060	0.09	0.0005	<0.02	<0.2	<0.0004	<0.04	23.5
2011-CLRU-PCSA03-27 (LIVER)	0.5	<0.002	0.05	0.73	<0.04	<0.04	<0.8	0.024	186	<0.08	0.047	5.11	92	0.008	249	7.34	0.93	0.07	3550	3370	0.41	<0.008	1050	0.12	<0.0008	<0.04	<0.4	<0.0008	<0.08	31.1
2011-CLRU-PCSA03-29 (LIVER)	0.3	<0.001	0.01	0.48	<0.02	<0.02	<0.4	0.108	231	<0.04	0.059	3.79	139	0.006	264	8.07	0.97	0.04	3530	3380	0.48	<0.004	1040	0.1	0.0009	<0.02	<0.2	<0.0004	<0.04	25.5
2011-CLRU-PCSA03-30 (LIVER)	1.1	<0.003	0.03	0.52	<0.06	<0.06	<1	0.019	332	<0.1	0.05	5.13	138	0.009	299	7.15	1.29	0.08	4050	4080	0.49	<0.01	1540	0.23	0.001	<0.06	<0.6	<0.001	<0.1	29
2011-CLRU-PCSA03-31 (LIVER)	0.5	0.001	0.01	0.61	<0.02	<0.02	<0.4	0.137	196	<0.04	0.073	4.69	123	0.014	270	7.81	1.15	0.05	3420	3430	0.37	<0.004	1000	0.19	<0.0004	<0.02	<0.2	<0.0004	<0.04	25.3
2011-CLRU-PCSA03-32 (LIVER)	0.6	0.002	0.01	0.35	<0.02	<0.02	<0.4	0.07	150	<0.04	0.068	5.21	118	0.011	262	5.53	1.29	0.05	3670	3440	0.51	<0.004	1200	0.07	0.0004	<0.02	0.2	<0.0004	<0.04	26.3
2011-CLRU-PCSA03-38 (LIVER)	0.4	<0.001	0.01	0.51	<0.02	<0.02	<0.4	0.356	181	<0.04	0.073	8.06	134	0.013	251	5.69	1.03	0.03	3310	3370	0.45	0.009	1190	0.1	0.0004	<0.02	<0.2	<0.0004	<0.04	27.3
2011-CLRU-MSSA01-10 (LIVER)	0.5	<0.002	0.01	0.35	<0.03	<0.03	<0.6	0.111	278	<0.06	0.062	5.85	314	0.017	244	2.73	1.59	0.01	3540	3280	1.18	<0.006	1240	0.11	0.0009	<0.03	<0.3	<0.0006	<0.06	27.7
2011-CLRU-MSSA01-11 (LIVER)	0.7	0.001	0.01	0.42	<0.02	<0.02	<0.4	0.075	284	<0.04	0.07	4.02	156	0.006	272	10.6	0.78	0.05	3310	3420	0.93	0.038	1180	0.14	0.002	<0.02	0.2	<0.0004	<0.04	22.6
2011-CLRU-MSSA01-13 (LIVER)	1.3	0.002	0.01	0.25	<0.02	<0.02	<0.4	0.023	735	<0.04	0.061	4.84	129	0.02	484	4.34	0.65	0.05	3530	3400	0.86	<0.004	955	0.17	0.0008	<0.02	0.2	<0.0004	<0.04	27.7
2011-CLRU-MSSA01-17 (LIVER)	2.3	0.002	0.01	0.48	<0.04	<0.04	<0.8	0.026	95	<0.08	0.044	4.43	188	0.015	220	5.97	1.17	0.03	3600	3340	0.82	<0.008	1090	0.08	0.0015	<0.04	0.7	<0.0008	<0.08	27.1
2011-CLRU-MSSA02-02 (LIVER)	2.2	<0.001	0.01	0.16	<0.02	<0.02	<0.4	0.151	333	<0.04	0.034	4.28	175	0.032	263	5.43	1.31	0.03	3000	3000	0.96	<0.004	1180	0.23	<0.0004	<0.02	<0.2	<0.0004	<0.04	23.8
2011-CLRU-MSSA02-03 (LIVER)	1.8	<0.002	0.01	0.12	<0.03	<0.03	<0.6	0.239	153	<0.06	0.067	4.73	156	0.007	302	7.31	0.38	0.05	3860	3680	0.78	<0.006	1260	0.11	<0.0006	<0.03	<0.3	<0.0006	<0.06	27.1
2011-CLRU-MSSA04-08 (LIVER)	1.1	<0.004	0.02	0.41	<0.07	<0.07	<1	0.415	225	<0.1	0.03	5.02	193	0.068	237	6	1.17	0.06	3140	3110	0.8	<0.01	1250	0.19	0.002	<0.07	<0.7	<0.001	<0.1	25.3
2011-CLRU-MSSA04-09 (LIVER)	1	0.003	0.03	0.33	<0.05	<0.05	<1	0.098	116	<0.1	0.05	4.61	159	0.041	231	7.07	1.31	0.22	3480	3090	0.87	<0.01	1050	0.08	0.004	<0.05	<0.5	<0.001	<0.1	27
2011-CLRU-MSSA04-10 (LIVER)	2	0.002	0.01	0.34	<0.03	<0.03	<0.6	0.139	271	<0.06	0.043	5.46	150	0.217	271	6.58	1.39	0.11	3020	3510	1.04	0.008	1150	0.17	0.002	<0.03	<0.3	0.0013	<0.06	28.9
2011-CLRU-MSSA04-11 (LIVER)	1.5	<0.002	0.01	0.53	<0.04	<0.04	<0.8	0.735	187	<0.08	0.037	4.81	102	0.027	260	10.9	1.39	0.08	3880	3610	1.72	0.034	1060	0.13	0.0053	<0.04	<0.4	<0.0008	<0.08	27.7
2011-CLRU-MSSA04-13 (LIVER)	1.2	0.002	0.01	0.35	<0.02	<0.02	<0.4	0.67	251	<0.04	0.051	4.76	126	0.053	306	5.53	0.32	0.1	4000	3760	2.32	0.015	1090	0.1	0.0014	<0.02	0.2	<0.0004	<0.04	27.7
2011-CLRU-MSSA04-17 (LIVER)	1.1	0.002	0.01	0.51	<0.03	<0.03	<0.6	0.476	352	<0.06	0.044	4.75	191	0.037	280	7.8	1.23	0.08	3200	3680	1.86	0.013	1320	0.16	0.0022	<0.03	<0.3	<0.0006	<0.06	29.9
2011-CLRU-MSSA04-22 (LIVER)	0.5	<0.002	0.01	0.19	<0.03	<0.03	<0.6	0.246	174	<0.06	0.031	4.76	188	0.025	239	5.12	1.34	0.03	3470	3090	0.74	<0.006	1140	0.08	0.0017	<0.03	<0.3	<0.0006	<0.06	25.5
2011-CLRU-MSSA04-23 (LIVER)	5	<0.007	0.07	0.8	<0.1	<0.1	<3	0.3	507	<0.3	0.05	7.94	154	0.05	284	11.5	1	0.12	3670	3580	0.89	0.09	1290	0.3	0.004	<0.1	<1	<0.003	<0.3	26.9
2011-CLRU-MSSA04-24 (LIVER)	0.7	<0.002	0.01	0.21	<0.03	<0.03	<0.6	0.235	190	<0.06	0.04	4.84	129	0.028	261	4.69	1.25	0.06	3500	3050	1.21	0.008	1110	0.09	0.0042	<0.03	<0.3	<0.0006	<0.06	25.3
2011-CLRU-MSSA04-31 (LIVER)	0.9	0.001	0.01	0.16	<0.02	<0.02	<0.4	0.201	242	<0.04	0.053	4.41	92	0.034	274	6.79	1.23	0.12	2970	3450	0.55	0.027	1110	0.1	0.0018	<0.02	<0.2	<0.0004	<0.04	23.6
2011-CLRU-MSSA06-03 (LIVER)	3.9	0.003	0.01	1.92	<0.03	<0.03	<0.6	0.168	347	<0.06	0.054	4.55	150	0.172	242	12.7	0.4	0.1	3340	3570	1.19	0.021	1190	0.25	0.0157	<0.03	<0.3	<0.0006	<0.06	25.2
2011-CLRU-MSSA06-04 (LIVER)	0.9	0.002	0.01	0.72	<0.04	<0.04	<0.8	0.119	206	<0.08	0.03	5.36	289	0.61	277	5.26	1.28	0.1	4080	3580	1.62	0.017	1290	0.16	0.0355	<0.04	<0.4	<0.0008	<0.08	26.2
2011-CLRU-MSSA06-05 (LIVER)	2.7	0.006	0.02	1.27	<0.02	<0.02	<0.4	0.104	354	<0.04	0.05	4.61	115	0.211	397	11.3	1.08	0.12	3480	3680	1.26	0.013	1230	0.2	0.0061	<0.02	<0.2	<0.0004	<0.04	22.7
Redback Vole (Muscle)																														
2011-CLRU-MCRA04-39 (MUSCLE)	<0.2	<0.001	<0.01	2.31	<0.02	<0.02	<0.4	0.026	1670	<0.04	0.02	1.79	59	0.005	242	8.13	0.06	0.05	2800	3100	0.21	<0.004	1040	0.6	<0.0004	<0.02	0.4	<0.0004	<0.04	14.1
2011-CLRU-MCRA04-41 (MUSCLE)	1.1	<0.001	<0.01	1.11	<0.02	<0.02	<0.4	0.02	1200	<0.04	0.03	2.38	43	0.004	284	11.3	0.03	0.09	3120	3870	0.18	<0.004	1050	0.45	<0.0004	<0.02	0.4	<0.0004	<0.04	14.3
2011-CLRU-MCRA04-48 (MUSCLE)	0.7	0.001	0.02	1.01	<0.02	<0.02	<0.4	0.031	1000	<0.04	0.056	1.85	57	0.01	241	10.8	0.11	0.06	2500	3480	0.27	<0.004	1050	0.42	<0.0004	<0.02	0.4	<0.0004	<0.04	12.5
2011-CLRU-MCRA04-52 (MUSCLE)	1.3	0.001	<0.01	2.27	<0.02	<0.02	<0.4	0.058	1330	<0.04	0.026	2.94	49	0.018	289	4.83	0.07	0.09	3050	3520	0.38	<0.004	1320	0.69	0.0012	<0.02	0.5	<0.0004	<0.04	14.1
2011-CLRU-MCRA04-53 (MUSCLE)	0.8	0.001	<0.01	5.69	<0.02	<0.02	<0.4	0.05	2330	<0.04	0.036	2.06	41	0.013	264	6.99	0.04	0.09	3190	3000	0.25	<0.004	1210	1.54	<0.0004	<0.02	0.5	<0.0004	<0.04	13.1
2011-CLRU-MCRA04-54 (MUSCLE)	1.5	<0.002	<0.02	2.3	<0.04	<0.04	<0.8	0.046	1190	<0.08	0.039	2.25	73	0.02	251	22.8	0.07	0.08	2930	3820	0.21	<0.008	1160	0.38	<0.0008	<0.04	<0.4	<0.0008	<0.08	17.9
2011-CLRU-MCRA04-57 (MUSCLE)	0.6	<0.001	<0.01	0.35	<0.02	<0.02	<0.4	0.076	317	<0.04	0.029	2.64	59	0.006	251	1.25	0.03	0.07	2620	3510	0.28	0.004	1030	0.1	0.0007	<0.02	0.3	<0.0004	<0.04	14.8
2011-CLRU-MCRA04-58 (MUSCLE)	0.8	<0.002	<0.02	0.38	<0.04	<0.04	<0.8	0.034	386	<0.08	0.026	3.07	49	0.01	189	2.82	0.04	0.14	2580	3900	0.34	<0.008	1140	0.19	0.0014	<0.04	<0.4	<0.0008	<0.08	13.2

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-CLRU-MCRA05-15 (MUSCLE)	2.2	0.001	<0.01	0.6	<0.02	<0.02	<0.4	0.035	442	<0.04	0.032	2.33	65	0.015	262	3.74	0.07	0.09	3000	4140	0.58	<0.004	1270	0.27	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.5
2011-CLRU-MCRA05-25 (MUSCLE)	<0.4	<0.001	<0.01	0.58	<0.02	<0.02	<0.4	0.019	523	<0.04	0.025	1.35	41	0.007	243	5.98	0.06	0.07	2070	3410	0.17	<0.004	1030	0.28	0.0005	<0.02	<0.2	<0.0004	<0.04	10.1
2011-CLRU-PCSA01-10 (MUSCLE)	1.6	<0.002	<0.02	1.06	<0.03	<0.03	<0.6	0.03	401	<0.06	0.061	2.82	71	0.011	242	8.42	0.06	0.11	2590	3750	0.27	0.017	1290	0.26	0.0018	<0.03	<0.3	<0.0006	<0.06	13.1
2011-CLRU-PCSA01-13 (MUSCLE)	1	<0.002	0.03	0.94	<0.03	<0.03	<0.6	0.036	253	<0.06	0.051	2.78	61	0.015	270	3.8	0.05	0.14	2250	3070	0.27	<0.006	1140	0.23	<0.0006	<0.03	<0.3	<0.0006	<0.06	12.2
2011-CLRU-PCSA01-15 (MUSCLE)	0.8	0.001	0.01	1.41	<0.02	<0.02	<0.4	0.041	242	<0.04	0.05	2.32	43	0.01	226	6.24	0.05	0.1	2090	3550	0.79	0.007	1140	0.24	0.0021	<0.02	<0.2	<0.0004	<0.04	9.71
2011-CLRU-PCSA01-18(MUSCLE)	5.3	<0.001	0.02	0.63	<0.02	<0.02	<0.4	0.093	351	<0.04	0.068	1.83	47	0.007	241	4.31	0.03	0.1	1940	3460	0.13	<0.004	975	0.49	<0.0004	<0.02	0.4	0.0013	<0.04	11.7
2011-CLRU-PCSA01-24(MUSCLE)	1.9	<0.002	<0.02	2.08	<0.03	<0.03	<0.6	0.052	411	<0.06	0.035	2.65	61	0.025	261	3.17	0.06	0.18	2500	3390	0.53	<0.006	1270	0.46	0.0016	<0.03	<0.3	0.0012	<0.06	11.9
2011-CLRU-PCSA01-30(MUSCLE)	1.4	0.001	<0.01	0.49	<0.02	<0.02	<0.4	0.114	257	<0.04	0.026	2.32	55	0.011	214	1.71	0.04	0.07	2410	3580	0.64	<0.004	1100	0.14	<0.0004	<0.02	<0.2	0.0007	<0.04	13.2
2011-CLRU-PCSA01-31(MUSCLE)	1.3	0.001	0.01	2.73	<0.02	<0.02	<0.4	0.032	1550	<0.04	0.034	2.47	46	0.013	240	2.67	0.03	0.08	2850	3440	0.34	0.006	1190	0.62	0.0022	<0.02	0.2	0.0012	<0.04	11.2
2011-CLRU-PCSA01-33 (MUSCLE)	0.5	0.001	0.02	1.36	<0.02	<0.02	<0.4	0.071	723	<0.04	0.011	2.37	43	0.013	202	0.82	0.04	0.05	2250	3420	0.4	0.005	965	0.4	0.0007	<0.02	<0.2	<0.0004	<0.04	10.6
2011-CLRU-PCSA03-03 (MUSCLE)	0.6	0.002	<0.01	0.27	<0.02	<0.02	<0.4	0.008	415	<0.04	0.016	2.71	66	0.005	280	5.6	0.02	0.1	2670	3770	0.11	<0.004	1170	0.13	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.7
2011-CLRU-PCSA03-12 (MUSCLE)	0.9	0.002	<0.01	0.79	<0.02	<0.02	<0.4	0.015	333	<0.04	0.049	2.5	63	0.008	235	10.9	0.05	0.13	2480	3630	0.18	<0.004	1110	0.26	<0.0004	<0.02	<0.2	<0.0004	<0.04	13.5
2011-CLRU-PCSA03-14 (MUSCLE)	0.7	0.002	<0.01	0.95	<0.02	<0.02	<0.4	0.064	240	<0.04	0.034	2.3	46	0.011	223	9.59	0.04	0.09	2200	3460	0.13	<0.004	932	0.28	<0.0004	<0.02	<0.2	<0.0004	<0.04	13.7
2011-CLRU-PCSA03-15 (MUSCLE)	2.3	0.001	<0.01	0.44	<0.02	<0.02	<0.4	0.008	569	<0.04	0.043	2.96	63	0.007	243	2.51	0.05	0.11	2260	3140	0.14	<0.004	1320	0.2	<0.0004	<0.02	0.2	<0.0004	<0.04	14.5
2011-CLRU-PCSA03-18 (MUSCLE)	6.1	<0.003	<0.03	2.54	<0.06	<0.06	<1	<0.006	1420	<0.1	0.05	3.34	77	0.029	327	10.2	0.09	0.21	3210	3970	0.13	<0.01	1170	0.66	<0.001	<0.06	<0.6	<0.001	<0.1	13.6
2011-CLRU-PCSA03-21 (MUSCLE)	2.1	0.002	<0.01	0.8	<0.02	<0.02	<0.4	0.029	334	<0.04	0.029	3.9	62	0.013	303	16.1	0.07	0.24	2600	3580	0.15	<0.004	1060	0.28	<0.0004	<0.02	<0.2	<0.0004	<0.04	17.1
2011-CLRU-PCSA03-22 (MUSCLE)	0.9	0.001	<0.01	0.47	<0.02	<0.02	<0.4	0.007	447	<0.04	0.021	2.67	93	0.009	267	4.93	0.04	0.12	2550	3420	0.15	<0.004	1170	0.15	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.2
2011-CLRU-PCSA03-27 (MUSCLE)	1.6	0.002	<0.02	2.51	<0.04	<0.04	<0.8	0.012	426	<0.08	0.043	3.16	66	0.047	277	13.4	0.04	0.19	2660	3970	0.17	<0.008	1170	0.33	<0.0008	<0.04	<0.4	<0.0008	<0.08	17.3
2011-CLRU-PCSA03-29 (MUSCLE)	0.4	<0.001	<0.01	0.8	<0.02	<0.02	<0.4	0.011	305	<0.04	0.026	2.6	49	0.006	253	7.04	0.03	0.09	2520	3740	0.12	<0.004	978	0.15	<0.0004	<0.02	<0.2	<0.0004	<0.04	13.2
2011-CLRU-PCSA03-30 (MUSCLE)	1.1	0.002	<0.01	0.81	<0.02	<0.02	<0.4	0.006	410	<0.04	0.034	2.25	66	0.016	277	8.86	0.12	0.18	2590	3570	0.17	<0.004	1340	0.38	0.0007	<0.02	<0.2	<0.0004	<0.04	14.2
2011-CLRU-PCSA03-31 (MUSCLE)	1.1	0.001	<0.01	1.78	<0.02	<0.02	<0.4	0.033	294	<0.04	0.035	2.67	55	0.042	267	16	0.08	0.14	2420	3560	0.15	<0.004	904	0.44	<0.0004	<0.02	<0.2	<0.0004	<0.04	17
2011-CLRU-PCSA03-32 (MUSCLE)	1.1	0.001	<0.01	2.99	<0.02	<0.02	<0.4	0.01	1620	<0.04	0.023	2.93	66	0.015	284	5.43	0.04	0.09	3290	3690	0.12	<0.004	1090	0.7	<0.0004	<0.02	0.2	<0.0004	<0.04	15.4
2011-CLRU-PCSA03-38 (MUSCLE)	1	<0.001	<0.01	1.38	<0.02	<0.02	<0.4	0.064	365	<0.04	0.032	2.25	57	0.014	250	9.56	0.04	0.12	2410	3730	0.14	<0.004	1020	0.26	<0.0004	<0.02	<0.2	<0.0004	<0.04	12.1
2011-CLRU-MSSA01-10 (MUSCLE)	3.4	0.002	<0.01	1.34	<0.02	<0.02	<0.4	0.016	958	<0.04	0.061	2.97	56	0.026	240	1.5	0.12	0.1	2820	3320	0.34	<0.004	1760	0.52	<0.0004	<0.02	0.3	0.0011	<0.04	15.1
2011-CLRU-MSSA01-11 (MUSCLE)	0.9	0.001	<0.01	0.62	<0.02	<0.02	<0.4	0.014	283	<0.04	0.034	2.06	47	0.004	235	15.3	0.02	0.12	2290	3340	0.49	0.022	1040	0.22	0.0006	<0.02	<0.2	<0.0004	<0.04	10.8
2011-CLRU-MSSA01-13 (MUSCLE)	0.7	0.001	<0.01	0.33	<0.02	<0.02	<0.4	0.003	198	<0.04	0.021	2.18	46	0.012	228	2.36	0.06	0.07	2230	3170	0.36	<0.004	1100	0.14	0.0005	<0.02	<0.2	<0.0004	<0.04	11.3
2011-CLRU-MSSA01-17 (MUSCLE)	14.5	0.002	<0.01	1.32	<0.02	<0.02	<0.4	0.006	893	0.08	0.048	2.21	83	0.031	240	5.95	0.06	0.11	2780	3560	0.23	<0.004	1160	0.56	0.0005	<0.02	4.3	<0.0004	0.07	13.1
2011-CLRU-MSSA02-02 (MUSCLE)	4.6	0.001	<0.01	0.83	<0.02	<0.02	<0.4	0.047	1300	<0.04	0.036	2.66	66	0.043	310	7.23	0.12	0.09	3010	3340	0.69	<0.004	1310	0.87	<0.0004	<0.02	<0.2	<0.0004	<0.04	15.7
2011-CLRU-MSSA02-03 (MUSCLE)	2.8	0.001	<0.01	0.36	<0.02	<0.02	<0.4	0.024	407	<0.04	0.045	2.61	53	0.04	272	8.54	0.04	0.08	2720	3910	0.3	<0.004	1220	0.25	<0.0004	<0.02	0.2	<0.0004	<0.04	16
2011-CLRU-MSSA04-08 (MUSCLE)	1.9	0.003	<0.02	0.63	<0.03	<0.03	<0.6	0.053	275	<0.06	0.023	2.81	54	0.07	238	4.05	0.09	0.13	2490	3340	0.42	<0.006	1280	0.25	0.001	<0.03	<0.3	0.0008	<0.06	14.1
2011-CLRU-MSSA04-09 (MUSCLE)	2.2	0.004	0.01	0.94	<0.02	<0.02	<0.4	0.076	441	<0.04	0.042	3.01	63	0.049	230	8.16	0.1	0.27	2490	3440	0.31	0.006	1140	0.25	0.0018	<0.02	0.2	0.001	<0.04	14.9
2011-CLRU-MSSA04-10 (MUSCLE)	2.5	0.003	<0.01	0.59	<0.02	<0.02	0.4	0.043	220	<0.04	0.033	3.16	58	0.124	234	6.92	0.08	0.24	2520	3660	0.47	<0.004	1120	0.25	0.001	<0.02	0.2	0.0014	<0.04	14.2
2011-CLRU-MSSA04-11 (MUSCLE)	0.9	0.002	<0.02	1.82	<0.03	<0.03	<0.6	0.808	1230	<0.06	0.033	3.46	41	0.025	281	10.8	0.07	0.18	3290	4020	0.85	0.04	1110	0.65	0.0013	<0.03	<0.3	<0.0006	<0.06	15.7
2011-CLRU-MSSA04-13 (MUSCLE)	1.5	0.003	<0.01	0.56	<0.02	<0.02	<0.4	0.152	402	<0.04	0.021	2.76	41	0.023	291	4.47	0.03	0.17	2790	3740	0.78	0.008	1020	0.18	0.0008	<0.02	<0.2	<0.0004	<0.04	13.3
2011-CLRU-MSSA04-17 (MUSCLE)	1.1	0.002	<0.02	0.83	<0.03	<0.03	<0.6	0.148	590	<0.06	0.033	2.97	59	0.027	246	7.69	0.04	0.14	2600	3510	0.74	<0.006	1220	0.34	0.0009	<0.03	<0.3	<0.0006	<0.06	13.7
2011-CLRU-MSSA04-23 (MUSCLE)	1.9	<0.003	<0.03	1.51	<0.06	<0.06	<1	0.102	636	<0.1	0.05	2.85	53	0.036	256	16.3	0.08	0.23	2580	3380	0.6	<0.01	1220	0.45	<0.001	<0.06	<0.6	<0.001	<0.1	12
2011-CLRU-MSSA04-24 (MUSCLE)	1.8	0.006	<0.01	0.48	<0.02	<0.02	<0.4	0.162	146	<0.04	0.035	2.73	45	0.035	253	6.6	0.06	0.18	2360	3470	0.43	0.012	1110	0.15	0.0016	<0.02	<0.2	<0.0004	<0.04	12.6
2011-CLRU-MSSA04-31 (MUSCLE)	1.5	0.002	<0.01	0.24	<0.02	<0.02	<0.4	0.043	157	<0.04	0.03	2.49	61	0.022	269	7.89	0.07	0.2	2190	3660	0.21	0.026	1050	0.12	0.001	<0.02	<0.2	<0.0004	<0.04	12.4
2011-CLRU-MSSA06-03 (MUSCLE)	1.8	0.003	<0.01	1.36	<0.02	<0.02	<0.4	0.025	364	<0.04	0.042	2.55	61	0.057	230	9.77	0.03	0.14	2690	3880	0.54	0.01	1210	0.24	0.0093	<0.02	<0.2	<0.0004	<0.04	12.9

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-CLRU-MSSA06-04 (MUSCLE)	1.3	0.008	<0.01	4.3	<0.02	<0.02	<0.4	0.038	1380	<0.04	0.031	2.99	58	0.625	258	4.65	0.06	0.18	3140	3520	0.73	0.009	1280	0.98	0.0138	<0.02	<0.2	<0.0004	<0.04	13.2
2011-CLRU-MSSA06-05 (MUSCLE)	3.8	0.009	0.02	1.34	<0.02	<0.02	<0.4	0.02	239	<0.04	0.036	2.06	58	0.183	188	6.8	0.04	0.2	1950	3140	0.51	0.015	1060	0.2	0.0042	<0.02	0.2	0.0005	<0.04	9.4
Artic Shrew (Whole Body)																														
2011-SOAR-MCRA04-03	7.7	0.003	0.03	5.12	<0.02	<0.02	<0.4	0.016	6500	0.1	0.026	2.86	111	0.076	328	6.92	0.12	0.05	5710	2580	4.79	<0.004	1090	2.22	0.0006	0.03	0.8	0.0028	<0.04	27.9
2011-SOAR-MCRA04-47	5.7	0.002	0.07	9.3	<0.02	<0.02	0.6	0.108	10800	0.05	0.035	3.79	239	0.06	445	7.7	0.12	0.05	8800	2720	7.92	<0.004	1510	2.43	0.0012	<0.02	0.6	0.0057	<0.04	35.8
Masked Shrew (Whole Body)																														
2011-SOCI-MCRA04-06	2.5	0.001	0.01	6.05	<0.02	<0.02	<0.4	0.072	6920	<0.04	0.014	4.14	83	0.096	357	3.2	0.13	0.05	6130	2990	0.74	<0.004	1150	3.07	0.0007	<0.02	0.4	<0.0004	<0.04	28.3
2011-SOCI-MCRA04-06	2.5	0.001	0.01	6.05	<0.02	<0.02	<0.4	0.072	6920	<0.04	0.014	4.14	83	0.096	357	3.2	0.13	0.05	6130	2990	0.74	<0.004	1150	3.07	0.0007	<0.02	0.4	<0.0004	<0.04	28.3
2011-SOCI-MCRA04-22	4.3	<0.001	0.03	3.03	<0.02	<0.02	0.5	0.098	6340	<0.04	0.022	3.57	109	0.303	349	3.8	0.12	0.04	5670	2860	1.04	<0.004	1120	1.67	0.0011	<0.02	0.4	0.0004	<0.04	27.7
2011-SOCI-MCRA04-29	2.7	0.002	0.01	5.02	<0.02	<0.02	0.6	0.18	7630	0.06	0.029	4.13	226	0.052	354	4.3	0.12	0.06	5960	2550	1.19	<0.004	1210	1.72	0.0005	<0.02	0.4	0.0005	<0.04	32.2
2011-SOCI-MCRA04-30	1.1	<0.001	0.01	2.68	<0.02	<0.02	0.6	0.032	7700	<0.04	0.013	3.5	85	0.032	343	4.28	0.1	0.01	6330	2700	0.58	<0.004	1040	1.99	0.0006	<0.02	0.3	<0.0004	<0.04	27.9
2011-SOCI-MCRA04-36	6.1	<0.001	0.04	6.31	<0.02	<0.02	0.7	0.063	8250	<0.04	0.024	3.61	95	0.06	352	4.94	0.13	0.03	6850	3020	1.08	<0.004	1120	3.45	0.0011	0.06	0.7	0.0015	<0.04	31.2
2011-SOCI-MCRA04-38	6.6	<0.001	0.03	16.8	<0.02	<0.02	0.9	0.199	8410	0.05	0.045	3.67	130	0.076	373	23	0.18	0.05	6260	2710	1.53	<0.004	1260	1.86	0.001	<0.02	0.5	0.0011	<0.04	37.6
2011-SOCI-MCRA04-40	6.3	<0.001	0.04	3.71	<0.02	<0.02	0.6	0.077	6010	0.04	0.018	3.24	84	0.123	321	5.32	0.11	0.04	5240	2540	0.89	<0.004	941	1.42	0.0007	<0.02	0.5	0.0005	<0.04	25.7
2011-SOCI-MCRA04-42	0.7	<0.001	0.03	3.43	<0.02	<0.02	0.6	0.184	7060	<0.04	0.019	2.4	90	0.017	317	4.75	0.1	0.02	5540	2120	0.58	<0.004	986	1.97	0.0008	<0.02	0.3	<0.0004	<0.04	23.9
2011-SOCI-MCRA04-43	1.5	<0.001	0.03	3.26	<0.02	<0.02	0.5	0.214	7750	<0.04	0.021	3.91	94	0.021	357	4.83	0.17	0.02	5870	2420	1.42	0.005	1020	0.86	0.0007	<0.02	0.3	<0.0004	<0.04	34.3
2011-SOCI-MCRA04-44	2.3	<0.001	0.04	5.03	<0.02	<0.02	0.7	0.05	8160	<0.04	0.015	3.49	105	0.051	359	5.58	0.15	0.03	6620	2840	1.79	<0.004	1190	2.33	0.0008	<0.02	0.4	<0.0004	<0.04	30.4
2011-SOCI-MCRA04-46	5.9	0.001	0.05	3.48	<0.02	<0.02	0.6	0.352	7200	<0.04	0.043	3.42	172	0.061	367	7.76	0.17	0.05	5860	2640	2.44	0.005	1170	1.18	0.0008	<0.02	0.5	0.0008	<0.04	30
2011-SOCI-MCRA04-56	4.7	0.004	0.05	4.99	<0.02	<0.02	0.6	0.182	8130	0.06	0.022	5.42	94	0.095	375	4.92	0.13	0.06	6650	3100	0.78	<0.004	1160	3.1	0.0012	0.03	0.6	<0.0004	<0.04	35
2011-SOCI-MCRA04-59	10.2	0.002	0.05	4.45	<0.02	<0.02	0.9	0.046	6920	0.06	0.026	4.06	106	0.355	339	4.55	0.14	0.06	5760	2840	1.57	<0.004	1080	1.68	0.0009	<0.02	0.9	0.0016	<0.04	27.7
2011-SOCI-MCRA04-60	4.7	0.001	0.04	4.18	<0.02	<0.02	0.8	0.036	8100	<0.04	0.017	3.91	103	0.074	315	3.23	0.11	0.03	6290	2740	0.78	<0.004	1100	1.53	0.0013	<0.02	0.6	<0.0004	<0.04	28.4
2011-SOCI-MCRA05-27	4.7	<0.001	0.05	3.8	<0.02	<0.02	0.4	0.065	7440	<0.04	0.013	2.8	93	0.076	346	3.13	0.15	0.06	5590	2430	1.32	<0.004	1060	2.73	0.001	0.04	0.6	<0.0004	<0.04	25.9
2011-SOCI-MCRA05-05	14.5	0.007	0.04	6.53	<0.02	<0.02	0.5	0.21	6910	0.06	0.032	3.31	102	0.099	324	5.56	0.12	0.3	5380	2360	1.44	<0.004	1000	1.61	0.001	0.05	0.8	0.0016	<0.04	31.9
2011-SOCI-MCRA05-06	2.2	0.001	0.04	3.23	<0.02	<0.02	<0.4	0.026	7330	<0.04	0.013	3.23	102	0.039	368	2.31	0.12	0.1	6100	2730	2.38	<0.004	1120	2.05	0.0009	0.03	0.4	<0.0004	<0.04	27.6
2011-SOCI-MCRA05-08	2.5	0.002	0.04	1.55	<0.02	<0.02	0.4	0.182	4960	<0.04	0.021	2.99	96	0.054	286	2.88	0.11	0.07	4470	2250	1.91	<0.004	916	1.3	<0.0004	<0.02	0.3	0.0006	<0.04	28.9
2011-SOCI-MCRA05-09	2.7	0.002	0.05	3.42	<0.02	<0.02	<0.4	0.12	8520	<0.04	0.02	3.03	108	0.072	349	3.06	0.11	0.06	6360	2400	1.94	<0.004	1100	2.17	0.0005	0.07	0.4	0.0013	<0.04	32.6
2011-SOCI-MCRA05-11	2.3	0.002	0.06	2.3	<0.02	<0.02	<0.4	0.108	8110	<0.04	0.02	3.15	98	0.049	330	2.32	0.11	0.07	6040	2400	2.06	<0.004	1070	1.39	0.0007	0.03	0.4	0.0009	<0.04	29
2011-SOCI-MCRA05-12	2.1	0.007	0.05	3.47	<0.02	<0.02	<0.4	0.106	8930	<0.04	0.026	2.96	90	0.048	377	2.78	0.1	0.05	6590	2290	8.2	<0.004	1040	2.25	0.0013	<0.02	0.4	0.0007	<0.04	32.4
2011-SOCI-MCRA05-17	2.2	0.001	0.06	2.93	<0.02	<0.02	0.6	0.039	9090	<0.04	0.015	3.21	96	0.087	364	2.19	0.07	0.05	6860	2630	1.37	<0.004	1180	1.97	0.0004	<0.02	0.5	<0.0004	<0.04	28.9
2011-SOCI-MCRA05-18	0.9	<0.001	0.05	2.04	<0.02	<0.02	<0.4	0.079	6020	<0.04	0.009	2.89	77	0.041	328	2	0.1	0.02	5210	2460	1.04	<0.004	1050	1.58	0.001	0.02	0.3	<0.0004	<0.04	24.2
2011-SOCI-MCRA05-20	1.8	<0.001	0.04	2.63	<0.02	<0.02	<0.4	0.256	6140	<0.04	0.02	2.85	80	0.016	314	2.86	0.09	0.04	5240	2230	0.96	<0.004	977	1.71	0.0009	<0.02	0.3	<0.0004	<0.04	31.2
2011-SOCI-MCRA05-22	1.8	<0.001	0.05	2.73	<0.02	<0.02	<0.4	0.135	5770	<0.04	0.014	2.43	73	0.051	277	2.37	0.09	0.02	4450	1930	0.72	<0.004	868	1.88	0.0006	<0.02	0.4	<0.0004	<0.04	24.9
2011-SOCI-MCRA05-24	1	<0.001	0.06	2.76	<0.02	<0.02	<0.4	0.12	6640	0.04	0.026	3.74	116	0.076	378	7.53	0.19	0.03	6070	2960	1.9	<0.004	1210	1.71	0.0007	<0.02	0.3	<0.0004	<0.04	29.9
Masked Shrew (Whole Body)																														
2011-SOCI-MSSA01-14	1.6	0.002	0.05	3.02	<0.02	<0.02	<0.4	0.023	7550	<0.04	0.015	3.22	86	0.085	343	3.89	0.09	0.04	6200	2490	0.95	<0.004	996	2.7	0.0006	0.25	0.4	<0.0004	<0.04	29.2
2011-SOCI-MSSA01-15	1.9	<0.001	0.06	3.06	<0.02	<0.02	<0.4	0.036	9500	<0.04	0.016	3.23	83	0.229	381	5.66	0.09	0.03	7200	2730	1.83	0.006	1130	2.64	0.0008	0.03	0.5	<0.0004	<0.04	27.9
2011-SOCI-MSSA02-06	6.6	0.003	0.07	2.24	<0.02	<0.02	0.8	0.075	7830	<0.04	0.019	3.26	96	0.148	356	2.7	0.1	0.02	6260	2760	1.16	<0.004	1060	1.84	0.0005	0.2	0.4	<0.0004	<0.04	30
2011-SOCI-MSSA05-02	6.1	0.005	0.01	6.17	<0.02	<0.02	<0.4	0.108	11800	0.06	0.029	3.44	114	0.149	450	4.94	0.16	0.05	8500	2720	1.3	<0.004	1380	3.61	0.0014	<0.02	1.1	0.0008	<0.04	35.1
2011-SOCI-PCSA01-03	6.1	0.005	0.03	2.85	<0.02	<0.02	<0.4	0.074	6780	0.06	0.017	3.45	101	0.055	274	3.2	0.12	0.05	5520	2330	0.61	0.006	888	1.8	0.0043	0.03	0.8	0.0029	<0.04	24

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-SOCI-PCSA01-11	3.1	<0.001	0.05	2.61	<0.02	<0.02	<0.4	0.086	7030	<0.04	0.019	3.44	107	0.048	330	2.05	0.12	0.02	6030	2640	0.85	0.004	1050	2.13	0.0014	0.03	0.5	<0.0004	<0.04	26.1
2011-SOCI-PCSA01-25	2.6	<0.001	0.07	3.27	<0.02	<0.02	<0.4	0.027	6590	<0.04	0.015	3.53	99	0.029	304	2.22	0.1	0.02	5750	2730	0.55	0.005	1100	2.15	0.0035	0.06	0.4	<0.0004	<0.04	26.1
2011-SOCI-PCSA01-28	5.2	<0.001	0.06	4.34	<0.02	<0.02	<0.4	0.048	8010	0.04	0.017	2.79	86	0.031	333	2.62	0.08	0.05	6130	2520	0.58	<0.004	968	1.99	0.0018	0.04	0.5	<0.0004	<0.04	26
2011-SOCI-PCSA01-32	3.6	<0.001	0.07	3.06	<0.02	<0.02	<0.4	0.212	8040	<0.04	0.02	3.86	134	0.045	358	2.08	0.17	0.03	6540	2950	1.27	<0.004	1180	2.03	0.0054	0.06	0.5	0.0009	<0.04	26.4
2011-SOCI-PCSA01-34	6.2	<0.001	0.07	3.65	<0.02	<0.02	<0.4	0.076	9410	<0.04	0.023	4.01	122	0.09	417	3.04	0.14	0.04	7290	3030	1.6	0.005	1240	2.13	0.0073	0.05	0.8	0.0007	<0.04	28.6
2011-SOCI-PCSA03-10	5.2	0.002	0.03	3.43	<0.02	<0.02	0.6	0.084	7870	<0.04	0.025	3.11	100	0.031	382	4.91	0.11	0.09	6110	2610	0.36	0.004	1050	1.37	0.0013	0.05	0.6	<0.0004	<0.04	26.5
2011-SOCI-PCSA03-37	4.1	0.001	0.04	2.25	<0.02	<0.02	<0.4	0.032	5960	<0.04	0.016	2.89	78	0.105	288	3.45	0.1	0.04	4840	2120	0.39	<0.004	839	1.78	0.0019	0.05	0.5	<0.0004	<0.04	22.5
Dusky Shrew (Whole Body)																														
2011-SOMO-MSSA02-05	11.4	0.004	0.06	4.01	<0.02	<0.02	1	0.177	8820	0.12	0.038	3.61	131	0.2	392	3.29	0.11	0.05	6400	2580	1.12	<0.004	1220	2.25	0.003	0.35	1	<0.0004	<0.04	30.4
2011-SOMO-MSSA02-07	3.3	0.002	0.05	1.39	<0.02	<0.02	0.4	0.306	5880	0.05	0.023	4.11	108	0.085	311	2.78	0.11	0.09	5440	2620	1.2	<0.004	1060	1.59	0.0005	1.78	0.3	<0.0004	<0.04	30.2
2011-SOMO-MCRA04-27	2.9	0.002	0.01	4.69	<0.02	<0.02	0.6	0.106	7020	<0.04	0.019	2.88	79	0.083	314	5.81	0.13	0.04	5400	2220	0.95	<0.004	991	3.5	0.0009	<0.02	0.3	0.0054	<0.04	29.9
2011-SOMO-MCRA05-10	2.5	0.001	0.05	2.81	<0.02	<0.02	<0.4	0.116	5220	<0.04	0.032	3.45	81	0.06	329	7.56	0.15	0.29	5250	2190	1.83	<0.004	1020	1.44	0.0005	<0.02	0.3	0.0019	<0.04	30
2011-SOMO-MCRA05-16	1.2	<0.001	0.06	1.89	<0.02	<0.02	0.5	0.116	7360	<0.04	0.013	4.3	94	0.107	357	3.37	0.13	0.04	6380	2880	1.16	0.004	1220	1.85	0.0012	<0.02	0.3	0.0007	<0.04	30.2
Jumping Mouse (Kidney)																														
2011-ZAHA-MCRA04-01 (KIDNEY)	<2	<0.01	<0.1	1.2	<0.2	<0.2	<4	0.1	303	<0.4	<0.04	4.5	130	0.58	312	5.8	0.3	0.2	3370	4360	1.1	<0.04	1320	<0.2	<0.004	<0.2	<2	<0.004	<0.4	26.7
2011-ZAHA-MCRA04-15 (KIDNEY)	2	<0.005	<0.05	0.2	<0.1	<0.1	<2	0.08	177	<0.2	0.04	3.31	135	0.02	198	8.8	0.19	0.14	2330	3020	0.94	<0.02	1040	0.1	<0.002	<0.1	<1	<0.002	<0.2	19.4
2011-ZAHA-MCRA04-45 (KIDNEY)	<2	<0.01	<0.1	0.4	<0.2	<0.2	<4	0.11	167	<0.4	0.04	5.1	148	0.03	248	8.1	0.3	0.1	2810	3470	0.9	<0.04	1120	<0.2	<0.004	<0.2	<2	<0.004	<0.4	24.4
2011-ZAHA-MSSA04-14 (KIDNEY)	<0.8	0.005	<0.04	0.42	<0.08	<0.08	<2	0.258	147	<0.2	0.03	4.3	108	0.076	302	3.33	0.4	0.21	3310	4000	1.18	<0.02	1260	0.21	0.018	<0.08	<0.8	<0.002	<0.2	28.2
Meadow Vole (Kidney)																														
2011-MIPE-MCRA04-02 (KIDNEY)	1	<0.004	<0.04	1.5	<0.08	<0.08	<2	0.106	463	<0.2	0.07	4.59	79	0.055	258	9.04	0.51	0.12	3320	4010	1.04	<0.02	1380	0.4	<0.002	<0.08	<0.8	<0.002	<0.2	21.6
2011-MIPE-MCRA04-04 (KIDNEY)	0.8	<0.004	<0.04	1.6	<0.08	<0.08	<2	0.052	371	<0.2	0.07	4.66	89	0.01	266	16.9	0.5	0.06	3430	3830	0.86	<0.02	1110	0.46	<0.002	<0.08	<0.8	<0.002	<0.2	21
2011-MIPE-MCRA04-31 (KIDNEY)	0.7	<0.002	0.21	1	<0.04	<0.04	<0.8	1.63	116	<0.08	0.086	5.24	77	0.012	220	9.16	0.56	0.27	3610	3580	1.53	<0.008	1270	0.3	<0.0008	<0.04	<0.4	<0.0008	<0.08	24
2011-MIPE-MCRA04-32 (KIDNEY)	0.7	<0.003	<0.03	0.25	<0.06	<0.06	<1	0.079	83	<0.1	0.04	4.57	95	0.014	184	2.51	0.37	0.08	3320	2910	0.89	<0.01	1500	0.09	0.001	<0.06	<0.6	0.001	<0.1	26.3
2011-MIPE-MCRA04-33 (KIDNEY)	0.5	<0.002	<0.02	0.64	<0.04	<0.04	<0.8	2.23	143	0.16	0.051	5.1	88	0.023	254	9.93	0.45	0.17	3790	4030	1.09	<0.008	1180	0.18	0.0025	<0.04	0.5	<0.0008	<0.08	25.1
2011-MIPE-MCRA04-34 (KIDNEY)	<0.6	<0.003	<0.03	0.56	<0.06	<0.06	<1	0.089	239	<0.1	0.09	4.82	104	0.013	253	10.2	0.42	0.08	3500	3770	1.16	<0.01	1330	0.27	<0.001	<0.06	<0.6	<0.001	<0.1	22.4
2011-MIPE-MCRA04-35 (KIDNEY)	<0.6	<0.003	<0.03	0.35	<0.06	<0.06	<1	0.629	164	<0.1	0.06	5.7	81	0.012	265	8.75	0.55	0.09	4030	4080	1.37	<0.01	1100	0.18	0.004	<0.06	<0.6	<0.001	<0.1	25.1
2011-MIPE-MCRA04-37 (KIDNEY)	<0.8	<0.004	<0.04	0.55	<0.08	<0.08	<2	0.109	180	<0.2	0.06	5.26	94	<0.008	263	7.25	0.49	0.05	3840	4280	0.98	<0.02	1270	0.17	0.002	<0.08	<0.8	<0.002	<0.2	25.6
2011-MIPE-MCRA04-50 (KIDNEY)	<2	<0.01	<0.1	1.3	<0.2	<0.2	<4	0.06	469	<0.4	0.05	5.5	89	<0.02	355	11.6	0.5	0.2	4810	5300	1	<0.04	1430	0.4	<0.004	<0.2	<2	<0.004	<0.4	28.4
2011-MIPE-MCRA04-61 (KIDNEY)	<1	<0.005	<0.05	1.7	<0.1	<0.1	<2	0.08	347	<0.2	0.04	4.49	82	<0.01	247	12.2	0.48	0.07	3480	3540	0.68	<0.02	1250	0.3	<0.002	<0.1	<1	<0.002	<0.2	22.1
2011-MIPE-MCRA05-01 (KIDNEY)	<2	<0.006	<0.06	1.7	<0.1	<0.1	<2	0.11	309	<0.2	0.03	4.97	103	0.02	282	8.1	0.47	0.15	3790	3950	0.76	<0.02	1170	0.4	<0.002	<0.1	<1	<0.002	<0.2	23
2011-MIPE-MCRA05-07 (KIDNEY)	<4	<0.01	<0.1	0.7	<0.2	<0.2	<4	0.06	575	<0.4	<0.04	4.5	111	<0.02	194	9.6	0.3	0.1	3170	4570	0.9	<0.04	1310	0.3	<0.004	<0.2	<2	<0.004	<0.4	25
2011-MIPE-MCRA05-23 (KIDNEY)	<2	<0.006	<0.06	1	<0.1	<0.1	<2	0.07	304	<0.2	0.06	5.6	103	0.01	349	17.8	0.6	0.09	4560	4720	0.91	<0.02	1510	0.4	<0.002	<0.1	<1	<0.002	<0.2	27.1
2011-MIPE-MCRA05-23 (KIDNEY)	<2	<0.006	<0.06	1	<0.1	<0.1	<2	0.07	304	<0.2	0.06	5.6	103	0.01	349	17.8	0.6	0.09	4560	4720	0.91	<0.02	1510	0.4	<0.002	<0.1	<1	<0.002	<0.2	27.1
2011-MIPE-MSSA02-04 (KIDNEY)	2	0.005	<0.03	0.45	<0.06	<0.06	<1	0.238	190	<0.1	0.05	4.98	92	0.01	273	11.1	0.58	0.19	3710	3900	0.55	<0.01	1300	0.47	<0.001	<0.06	<0.6	<0.001	<0.1	22.5
2011-MIPE-MSSA01-01 (KIDNEY)	2.7	<0.002	<0.02	0.37	<0.04	<0.04	<0.8	1.52	235	<0.08	0.075	5.1	84	0.044	334	3.03	0.3	0.12	3440	3550	0.77	<0.008	1160	0.28	0.0008	<0.04	<0.4	<0.0008	<0.08	24.3
2011-MIPE-MSSA01-06 (KIDNEY)	0.8	<0.003	<0.03	1.11	<0.05	<0.05	<1	1.79	116	<0.1	0.08	6.95	112	0.054	196	8.16	0.66	0.07	4150	3590	1.3	<0.01	1560	0.24	0.004	<0.05	<0.5	<0.001	<0.1	30.8
2011-MIPE-PCSA01-05 (KIDNEY)	1.5	<0.002	<0.02	0.61	<0.04	<0.04	<0.8	1.7	104	<0.08	0.061	5.32	77	0.025	187	7.2	0.23	0.05	3730	3120	0.86	<0.008	1020	0.21	0.0049	<0.04	<0.4	<0.0008	<0.08	27.8
2011-MIPE-PCSA01-06 (KIDNEY)	<1	<0.005	<0.05	0.6	<0.1	<0.1	<2	0.24	228	<0.2	0.05	4.92	79	0.01	307	3	0.32	0.1	4060	4560	0.58	<0.02	1340	0.5	<0.002	<0.1	<1	<0.002	<0.2	25.3
2011-MIPE-PCSA01-07 (KIDNEY)	3	0.008	<0.06	0.7	<0.1	<0.1	<2	0.3	253	<0.2	0.05	5.06	77	0.02	262	2.5	0.3	0.1	3930	4350	0.51	<0.02	1210	0.7	<0.002	<0.1	<1	<0.002	<0.2	23

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-MIPE-PCSA01-12 (KIDNEY)	<1	0.009	<0.05	0.4	<0.1	<0.1	<2	0.15	341	<0.2	0.05	5.02	58	0.01	298	3.1	0.33	0.1	3400	3880	0.44	<0.02	962	0.7	<0.002	<0.1	<1	<0.002	<0.2	21.4
2011-MIPE-PCSA01-14 (KIDNEY)	1.5	<0.004	<0.04	0.81	<0.07	<0.07	<1	0.286	204	<0.1	0.05	5.37	102	0.033	249	3.62	0.36	0.05	3810	3690	0.83	<0.01	1210	0.3	0.004	<0.07	<0.7	<0.001	<0.1	25.2
2011-MIPE-PCSA01-19 (KIDNEY)	<0.8	<0.004	<0.04	0.49	<0.08	<0.08	<2	0.143	252	<0.2	0.04	4.22	52	0.013	269	3	0.25	0.11	3070	3230	0.49	<0.02	1260	0.71	<0.002	<0.08	<0.8	<0.002	<0.2	21.9
2011-MIPE-PCSA01-20 (KIDNEY)	<0.8	0.006	<0.04	0.32	<0.08	<0.08	<2	0.26	182	<0.2	0.03	4.51	66	0.015	257	1.88	0.27	0.08	3600	3430	0.56	<0.02	1340	0.44	<0.002	<0.08	<0.8	<0.002	<0.2	22.9
2011-MIPE-PCSA03-01 (KIDNEY)	1	<0.003	<0.03	1.37	<0.05	<0.05	<1	0.319	164	<0.1	0.07	4.21	71	0.009	214	3.15	0.13	0.16	3090	3650	0.67	<0.01	1120	0.5	<0.001	<0.05	<0.5	<0.001	<0.1	23.4
2011-MIPE-PCSA03-28 (KIDNEY)	<0.5	<0.003	<0.03	1.71	<0.05	<0.05	<1	0.661	233	<0.1	0.08	5.31	78	0.008	249	15.6	0.25	0.14	3590	3210	0.85	<0.01	1530	0.35	<0.001	<0.05	<0.5	<0.001	<0.1	24
2011-MIPE-PCSA01-26 (KIDNEY)	23.8	<0.005	0.19	0.27	<0.09	<0.09	<2	0.202	232	<0.2	0.06	5.35	96	0.143	296	2.7	0.35	0.08	3560	4050	0.63	<0.02	1190	0.45	<0.002	<0.09	<0.9	<0.002	<0.2	23.7
2011-MIPE-PCSA01-29 (KIDNEY)	1.1	<0.003	<0.03	0.25	<0.05	<0.05	<1	2.54	218	<0.1	0.08	5.95	93	0.03	263	3.52	0.47	0.07	3810	3780	0.83	<0.01	1400	0.32	0.003	<0.05	<0.5	<0.001	<0.1	24.6
Siberian Lemming (Kidney)																														
2011-LESI-MCRA05-04 (KIDNEY)	<2	<0.005	<0.05	1.4	<0.1	<0.1	<2	0.97	729	<0.2	0.05	3.21	115	<0.01	296	12.1	0.25	0.08	2840	4080	1.1	<0.02	1090	0.4	<0.002	<0.1	<1	<0.002	<0.2	23.6
2011-LESI-MCRA05-13 (KIDNEY)	<1	<0.003	<0.03	0.94	<0.06	<0.06	<1	2.28	341	<0.1	0.08	4.18	92	0.011	225	7.16	0.58	0.09	3070	3710	1.4	<0.01	1040	0.37	<0.001	<0.06	<0.6	0.003	<0.1	25.5
2011-LESI-MCRA05-14 (KIDNEY)	<2	<0.004	<0.04	0.49	<0.08	<0.08	<2	1.68	454	<0.2	0.03	2.55	104	<0.008	289	3.88	0.21	0.07	2740	3700	0.82	<0.02	1120	0.18	<0.002	<0.08	<0.8	<0.002	<0.2	20.2
2011-LESI-MCRA05-19 (KIDNEY)	<0.8	<0.002	<0.02	0.6	<0.04	<0.04	<0.8	0.938	191	<0.08	0.085	5.33	78	0.006	277	10.9	0.77	0.08	3670	3750	1.3	<0.008	1090	0.2	0.0015	<0.04	<0.4	0.0047	<0.08	24.3
2011-LESI-MCRA05-21 (KIDNEY)	<6	<0.02	<0.2	0.7	<0.3	<0.3	<6	0.11	826	<0.6	<0.06	4.5	102	<0.03	318	8.4	0.2	<0.2	2980	4300	0.8	<0.06	1290	<0.3	<0.006	<0.3	<3	<0.006	<0.6	22
2011-LESI-MCRA05-28 (KIDNEY)	<2	<0.005	<0.05	0.8	<0.1	<0.1	<2	2.72	283	<0.2	0.04	4.44	87	<0.01	319	8.2	0.28	<0.05	3520	4070	1.27	<0.02	1280	0.3	<0.002	<0.1	<1	<0.002	<0.2	23.8
Jumping Mouse (Liver)																														
2011-ZAHA-MCRA04-01 (LIVER)	0.7	<0.003	<0.03	0.5	<0.06	<0.06	<1	0.048	405	<0.1	0.02	4.49	142	0.295	221	3.86	0.59	0.15	2550	3230	0.66	<0.01	1040	0.11	<0.001	<0.06	<0.6	<0.001	<0.1	26
2011-ZAHA-MCRA04-15 (LIVER)	1.5	<0.002	0.05	0.21	<0.04	<0.04	<0.8	0.045	364	<0.08	0.07	4.03	166	0.028	215	10.9	0.65	0.22	2610	3380	0.85	<0.008	1230	0.11	<0.0008	<0.04	<0.4	0.0026	<0.08	29.6
2011-ZAHA-MCRA04-45 (LIVER)	1	<0.003	0.1	0.26	<0.06	<0.06	<1	0.057	388	<0.1	0.04	4.83	163	0.021	234	8.82	0.76	0.13	2460	3320	0.64	<0.01	1100	0.11	<0.001	<0.06	<0.6	0.002	<0.1	29.7
2011-ZAHA-MSSA04-14 (LIVER)	0.7	0.002	<0.02	0.18	<0.03	<0.03	<0.6	0.147	296	<0.06	0.026	4.21	136	0.023	245	2.76	1.41	0.18	2440	3230	1.08	<0.006	1120	0.13	0.0066	<0.03	<0.3	0.0016	<0.06	28.5
Meadow Vole (Liver)																														
2011-MIPE-MCRA04-02 (LIVER)	0.6	<0.002	0.02	0.44	<0.04	<0.04	<0.8	0.067	344	<0.08	0.053	4.51	226	0.01	340	6.37	1.39	0.03	3190	3380	1.12	<0.008	1080	0.15	<0.0008	<0.04	0.4	<0.0008	<0.08	26.5
2011-MIPE-MCRA04-04 (LIVER)	0.3	<0.001	<0.01	0.93	<0.02	<0.02	<0.4	0.038	406	<0.04	0.053	3.32	145	0.006	265	11.6	1.1	0.03	3350	3560	0.88	<0.004	1030	0.31	<0.0004	<0.02	0.4	<0.0004	<0.04	23.1
2011-MIPE-MCRA04-31 (LIVER)	0.2	0.001	0.22	0.83	<0.02	<0.02	<0.4	0.228	182	<0.04	0.082	3.29	107	0.004	235	7.8	1.59	0.11	3030	2990	1.49	<0.004	1020	0.22	<0.0004	<0.02	0.4	<0.0004	<0.04	25.9
2011-MIPE-MCRA04-32 (LIVER)	0.6	0.001	0.02	0.32	<0.02	<0.02	<0.4	0.046	221	<0.04	0.04	4.48	214	0.011	292	3.75	1.19	0.05	3620	3060	1.01	<0.004	1320	0.12	0.0004	<0.02	0.4	<0.0004	<0.04	34
2011-MIPE-MCRA04-33 (LIVER)	<0.2	<0.001	<0.01	0.25	<0.02	<0.02	<0.4	0.211	177	<0.04	0.055	4.81	117	0.003	278	6.42	1.39	0.03	3270	3780	0.89	<0.004	1170	0.11	0.0008	<0.02	0.5	<0.0004	<0.04	24.1
2011-MIPE-MCRA04-34 (LIVER)	0.2	<0.001	0.03	0.4	<0.02	<0.02	<0.4	0.054	313	<0.04	0.078	3.4	172	0.004	251	6.19	0.96	0.05	3250	3250	1.05	<0.004	1110	0.18	0.0006	<0.02	0.4	<0.0004	<0.04	23.2
2011-MIPE-MCRA04-35 (LIVER)	0.4	<0.001	<0.01	0.21	<0.02	<0.02	<0.4	0.055	188	<0.04	0.052	4.57	105	0.004	289	6.92	1.29	0.04	3820	3750	1.07	<0.004	1080	0.13	0.0005	<0.02	0.5	<0.0004	<0.04	26.1
2011-MIPE-MCRA04-37 (LIVER)	<0.4	<0.002	<0.02	0.35	<0.04	<0.04	<0.8	0.055	220	<0.08	0.054	4.09	140	<0.004	267	6.06	1.15	0.03	3520	3680	0.98	<0.008	1190	0.14	0.0008	<0.04	0.5	<0.0008	<0.08	28.1
2011-MIPE-MCRA04-50 (LIVER)	0.4	<0.002	<0.02	0.72	<0.04	<0.04	<0.8	0.068	492	<0.08	0.035	3.8	139	0.009	260	6.25	0.92	0.06	3210	3690	0.77	<0.008	1060	0.22	<0.0008	<0.04	0.4	<0.0008	<0.08	24.3
2011-MIPE-MCRA04-61 (LIVER)	<0.4	<0.002	<0.02	1.05	<0.04	<0.04	<0.8	0.033	341	<0.08	0.038	3.6	96	<0.004	265	7.8	0.94	0.06	3620	3350	0.46	<0.008	1140	0.26	<0.0008	<0.04	0.4	<0.0008	<0.08	25.5
2011-MIPE-MCRA05-01 (LIVER)	<1	<0.003	<0.03	1.25	<0.05	<0.05	<1	0.072	395	<0.1	0.03	4.49	169	<0.005	284	6.08	1.26	0.12	3670	3510	0.66	<0.01	1060	0.28	<0.001	<0.05	<0.5	<0.001	<0.1	23.9
2011-MIPE-MCRA05-07 (LIVER)	<0.6	0.002	<0.02	0.37	<0.03	<0.03	<0.6	0.023	444	<0.06	0.013	2.48	162	0.015	227	6.75	0.38	0.05	2790	3520	0.41	<0.006	1090	0.15	<0.0006	<0.03	<0.3	<0.0006	<0.06	25.4
2011-MIPE-MCRA05-23 (LIVER)	1.1	<0.002	<0.02	0.59	<0.04	<0.04	<0.8	0.025	299	<0.08	0.039	4.34	137	0.004	295	9.93	1.42	0.08	3610	3400	0.69	<0.008	1100	0.23	<0.0008	<0.04	<0.4	<0.0008	<0.08	26.5
2011-MIPE-MCRA05-23 (LIVER)	1.1	<0.002	<0.02	0.59	<0.04	<0.04	<0.8	0.025	299	<0.08	0.039	4.34	137	0.004	295	9.93	1.42	0.08	3610	3400	0.69	<0.008	1100	0.23	<0.0008	<0.04	<0.4	<0.0008	<0.08	26.5
2011-MIPE-MSSA02-04 (LIVER)	0.6	<0.001	<0.01	0.24	<0.02	<0.02	<0.4	0.14	312	<0.04	0.039	4.26	102	0.002	270	5.27	1.01	0.07	3360	3290	0.46	<0.004	1030	0.26	<0.0004	<0.02	<0.2	<0.0004	<0.04	27.6
2011-MIPE-MSSA01-01 (LIVER)	0.5	<0.001	<0.01	0.47	<0.02	<0.02	<0.4	0.219	2050	<0.04	0.07	4.17	122	0.018	905	3.65	0.94	0.08	4540	3470	0.4	<0.004	1130	0.46	0.0007	<0.02	0.2	<0.0004	<0.04	22.8
2011-MIPE-MSSA01-06 (LIVER)	<0.2	<0.001	<0.01	0.42	<0.02	<0.02	<0.4	0.301	126	<0.04	0.061	6.14	214	0.005	231	5.48	1.73	0.01	3630	3110	0.57	<0.004	1170	0.1	0.0014	<0.02	<0.2	<0.0004	<0.04	32.4
2011-MIPE-PCSA01-05 (LIVER)	0.7	<0.001	<0.01	0.25	<0.02	<0.02	<0.4	0.513	89	<0.04	0.05	6.3	148	0.01	261	5.85	0.6	0.02	3720	3230	0.54	<0.004	942	0.09	0.0032	<0.02	0.3	<0.0004	<0.04	32.5

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-MIPE-PCSA01-06 (LIVER)	0.4	0.002	<0.02	0.3	<0.04	<0.04	<0.8	0.3	290	<0.08	0.041	4.25	139	<0.004	276	3.56	0.89	0.04	3200	3560	0.43	<0.008	1110	0.28	<0.0008	<0.04	<0.4	<0.0008	<0.08	24.5
2011-MIPE-PCSA01-07 (LIVER)	1.7	<0.004	<0.04	0.49	<0.08	<0.08	<2	0.388	314	<0.2	0.04	5.14	146	<0.008	273	2.97	0.86	0.04	3310	3840	0.39	<0.02	1180	0.39	<0.002	<0.08	<0.8	<0.002	<0.2	26
2011-MIPE-PCSA01-12 (LIVER)	0.9	<0.003	<0.03	0.21	<0.05	<0.05	<1	0.113	337	<0.1	0.04	4.12	169	0.005	280	2.66	0.92	0.06	2940	3880	0.32	<0.01	1030	0.34	<0.001	<0.05	<0.5	<0.001	<0.1	23.1
2011-MIPE-PCSA01-14 (LIVER)	0.3	<0.001	<0.01	0.5	<0.02	<0.02	<0.4	0.112	163	<0.04	0.042	4.02	141	0.006	217	3.25	1.32	0.02	3300	2940	0.51	<0.004	963	0.19	0.0029	<0.02	<0.2	<0.0004	<0.04	25.8
2011-MIPE-PCSA01-19 (LIVER)	<0.3	<0.002	<0.02	0.29	<0.03	<0.03	<0.6	0.165	258	<0.06	0.037	4.03	144	0.003	254	2.61	0.88	0.05	3060	2920	0.4	<0.006	1130	0.4	<0.0006	<0.03	<0.3	<0.0006	<0.06	26.5
2011-MIPE-PCSA01-20 (LIVER)	<0.4	0.003	<0.02	0.65	<0.04	<0.04	<0.8	0.248	282	<0.08	0.033	4.53	170	0.087	278	2.75	1.12	0.05	3230	3090	0.44	<0.008	1200	0.36	<0.0008	<0.04	<0.4	<0.0008	<0.08	27.3
2011-MIPE-PCSA03-01 (LIVER)	<0.2	0.001	<0.01	0.81	<0.02	<0.02	<0.4	0.136	373	<0.04	0.067	3.85	117	0.002	215	3.49	0.23	0.07	3000	3310	0.39	<0.004	1020	0.29	<0.0004	<0.02	<0.2	<0.0004	<0.04	25
2011-MIPE-PCSA03-28 (LIVER)	<0.2	0.001	<0.01	0.49	<0.02	<0.02	<0.4	0.129	248	<0.04	0.049	4.16	118	0.002	252	5.32	0.54	0.03	2980	2650	0.38	<0.004	1170	0.12	<0.0004	<0.02	<0.2	<0.0004	<0.04	26.1
2011-MIPE-PCSA01-26 (LIVER)	0.8	<0.002	0.12	0.21	<0.03	<0.03	<0.6	0.211	274	<0.06	0.053	4.68	191	0.008	289	3.28	1.4	0.03	3290	3570	0.43	<0.006	1050	0.28	0.0007	<0.03	<0.3	0.0007	<0.06	26.6
2011-MIPE-PCSA01-29 (LIVER)	0.4	0.002	<0.01	0.11	<0.02	<0.02	<0.4	0.77	157	<0.04	0.058	4.09	201	0.006	241	3.89	1.27	0.02	3300	3190	0.47	<0.004	1120	0.15	0.0009	<0.02	<0.2	<0.0004	<0.04	21.5
Siberian Lemming (Liver)																														
2011-LESI-MCRA05-04 (LIVER)	<0.4	0.001	<0.01	0.64	<0.02	<0.02	<0.4	0.276	745	<0.04	0.032	2.23	142	0.005	256	8.06	0.44	0.03	2520	3240	0.73	<0.004	931	0.25	<0.0004	0.2	<0.2	<0.0004	<0.04	21.5
2011-LESI-MCRA05-13 (LIVER)	1	0.003	0.02	0.73	<0.02	<0.02	<0.4	0.292	542	<0.04	0.088	3.03	117	0.008	222	5.43	0.88	0.07	2400	3450	0.82	<0.004	989	0.32	<0.0004	<0.02	<0.2	0.0014	<0.04	22.4
2011-LESI-MCRA05-14 (LIVER)	<0.4	<0.001	<0.01	0.36	<0.02	<0.02	<0.4	0.493	436	<0.04	0.029	2.19	130	0.003	257	3.02	0.39	0.03	2690	3220	0.5	<0.004	1040	0.12	<0.0004	<0.02	<0.2	<0.0004	<0.04	19.9
2011-LESI-MCRA05-19 (LIVER)	0.6	0.001	0.01	0.56	<0.02	<0.02	<0.4	0.157	506	<0.04	0.101	3.8	105	0.005	291	6.66	1.2	0.05	3080	3540	0.89	<0.004	1090	0.18	0.0004	<0.02	<0.2	<0.0004	<0.04	27.2
2011-LESI-MCRA05-21 (LIVER)	<2	<0.004	<0.04	0.88	<0.08	<0.08	<2	0.041	857	2.8	0.04	3.47	207	0.009	309	7.12	0.57	1.25	2970	4110	0.58	<0.02	1340	0.24	<0.002	<0.08	<0.8	<0.002	<0.2	28.1
2011-LESI-MCRA05-28 (LIVER)	<0.4	<0.001	<0.01	0.52	<0.02	<0.02	<0.4	0.582	524	<0.04	0.028	2.42	87	0.003	259	5.43	0.48	0.02	2520	3300	0.63	<0.004	1060	0.18	<0.0004	<0.02	<0.2	<0.0004	<0.04	21.3
Jumping Mouse (Muscle)																														
2011-ZAHA-MCRA04-01 (MUSCLE)	0.7	<0.001	<0.01	0.41	<0.02	<0.02	<0.4	0.017	251	<0.04	0.009	2.41	52	0.104	272	2.47	0.02	0.1	2370	3480	0.3	<0.004	1010	0.1	<0.0004	<0.02	0.3	0.0005	<0.04	14.8
2011-ZAHA-MCRA04-15 (MUSCLE)	1.1	0.001	<0.01	0.19	<0.02	<0.02	<0.4	0.009	190	<0.04	0.016	2.3	43	0.009	231	3.93	0.02	0.16	2120	3380	0.38	<0.004	1110	0.08	<0.0004	<0.02	0.3	0.0006	<0.04	13.2
2011-ZAHA-MCRA04-45 (MUSCLE)	1.8	<0.001	0.06	0.32	<0.02	<0.02	<0.4	0.015	376	<0.04	0.014	2.9	74	0.014	251	3.53	0.03	0.09	2350	3220	0.31	<0.004	1030	0.12	<0.0004	<0.02	0.4	0.0008	<0.04	14.4
2011-ZAHA-MSSA04-14 (MUSCLE)	0.8	0.001	<0.01	0.25	<0.02	<0.02	<0.4	0.08	141	<0.04	0.016	2.38	38	0.01	248	1.92	0.03	0.23	2220	3530	0.53	<0.004	1020	0.15	0.0028	<0.02	<0.2	0.0013	<0.04	12.9
Meadow Vole (Muscle)																														
2011-MIPE-MCRA04-02 (MUSCLE)	1	0.001	0.02	1.7	<0.02	<0.02	<0.4	0.026	622	<0.04	0.057	2.09	62	0.014	329	16	0.09	0.13	2350	3190	0.46	<0.004	1170	0.46	<0.0004	<0.02	0.4	0.0009	<0.04	12.2
2011-MIPE-MCRA04-04 (MUSCLE)	0.5	<0.001	<0.01	1.28	<0.02	<0.02	<0.4	0.01	658	<0.04	0.042	1.9	50	0.022	248	12.4	0.05	0.06	2380	3490	0.41	<0.004	988	0.46	<0.0004	<0.02	0.3	<0.0004	<0.04	10.9
2011-MIPE-MCRA04-31 (MUSCLE)	0.4	<0.001	0.18	2.5	<0.02	<0.02	<0.4	0.038	1080	<0.04	0.086	1.9	63	0.005	272	9.49	0.07	0.25	2730	3450	0.55	<0.004	1140	0.68	<0.0004	<0.02	0.3	<0.0004	<0.04	13.7
2011-MIPE-MCRA04-32 (MUSCLE)	0.7	<0.001	0.03	1.03	<0.02	<0.02	<0.4	0.017	945	<0.04	0.029	1.97	58	0.009	215	2.86	0.08	0.07	2300	3090	0.34	<0.004	1380	0.42	<0.0004	<0.02	0.3	0.0004	<0.04	13
2011-MIPE-MCRA04-33 (MUSCLE)	0.4	<0.001	<0.01	1.32	<0.02	<0.02	<0.4	0.03	136	<0.04	0.034	1.85	53	0.008	248	11.6	0.04	0.12	2200	3430	0.3	<0.004	930	0.19	<0.0004	<0.02	0.3	<0.0004	<0.04	11.6
2011-MIPE-MCRA04-34 (MUSCLE)	0.4	0.001	0.03	0.89	<0.02	<0.02	<0.4	0.012	247	<0.04	0.071	1.84	53	0.007	230	8.98	0.07	0.13	2150	3230	0.49	<0.004	1120	0.27	<0.0004	<0.02	0.3	0.0006	<0.04	11.7
2011-MIPE-MCRA04-35 (MUSCLE)	0.3	0.001	<0.01	0.9	<0.02	<0.02	<0.4	0.01	625	<0.04	0.047	1.96	49	0.003	272	8.88	0.05	0.07	2560	3850	0.28	<0.004	1020	0.35	<0.0004	<0.02	0.4	<0.0004	<0.04	11.5
2011-MIPE-MCRA04-37 (MUSCLE)	0.3	<0.001	<0.01	1.06	<0.02	<0.02	<0.4	0.02	955	<0.04	0.031	2.02	55	0.003	271	7.22	0.06	0.07	2740	3680	0.38	<0.004	1060	0.44	<0.0004	<0.02	0.4	<0.0004	<0.04	13.1
2011-MIPE-MCRA04-50 (MUSCLE)	1.2	<0.002	<0.02	2.32	<0.04	<0.04	<0.8	0.023	980	<0.08	0.058	2.37	90	0.008	288	9.05	0.07	0.15	3070	4260	0.44	<0.008	1130	0.61	<0.0008	<0.04	0.4	<0.0008	<0.08	14.9
2011-MIPE-MCRA04-61 (MUSCLE)	1.1	<0.001	<0.01	2.06	<0.02	<0.02	<0.4	0.015	325	<0.04	0.059	2.11	53	0.011	211	11.4	0.08	0.1	2120	3120	0.17	<0.004	1100	0.34	<0.0004	<0.02	0.3	<0.0004	<0.04	12.1
2011-MIPE-MCRA05-01 (MUSCLE)	0.9	<0.002	<0.02	2.52	<0.03	<0.03	<0.6	0.017	1130	<0.06	0.026	2.46	49	0.004	257	7.42	0.05	0.15	2880	3540	0.24	<0.006	1040	0.77	<0.0006	<0.03	<0.3	<0.0006	<0.04	12.1
2011-MIPE-MCRA05-07 (MUSCLE)	0.5	<0.001	<0.01	1	<0.02	<0.02	<0.4	0.004	1490	<0.04	0.017	2.09	57	0.006	255	4.87	0.03	0.1	3100	3880	0.19	<0.004	1220	0.5	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.2
2011-MIPE-MCRA05-23 (MUSCLE)	0.4	<0.001	<0.01	1.64	<0.02	<0.02	<0.4	0.007	1420	<0.04	0.058	2.64	42	0.009	308	16.3	0.05	0.12	3170	3800	0.23	<0.004	1210	0.86	<0.0004	<0.02	<0.2	<0.0004	<0.04	12.5
2011-MIPE-MCRA05-23 (MUSCLE)	0.4	<0.001	<0.01	1.64	<0.02	<0.02	<0.4	0.007	1420	<0.04	0.058	2.64	42	0.009	308	16.3	0.05	0.12	3170	3800	0.23	<0.004	1210	0.86	<0.0004	<0.02	<0.2	<0.0004	<0.04	12.5
2011-MIPE-MSSA02-04 (MUSCLE)	3.5	0.001	<0.01	0.9	<0.02	<0.02	<0.4	0.035	1130	<0.04	0.049	2.61	57	0.029	277	8.5	0.06	0.21	2860	3780	0.22	<0.004	1130	0.85	<0.0004	<0.02	0.3	<0.0004	<0.04	13.6
2011-MIPE-MSSA01-01 (MUSCLE)	0.7	<0.001	<0.01	0.57	<0.02	<0.02	<0.4	0.089	226	<0.04	0.087	1.84	43	0.025	270	3.94	0.06	0.22	2050	3700	0.13	<0.004	1030	0.4	<0.0004	<0.02	<0.2	<0.0004	<0.04	12.1

	Total Metals by ICPMS																													
Symbol	AL	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2011-MIPE-MSSA01-06 (MUSCLE)	0.6	0.001	<0.01	1.63	<0.02	<0.02	<0.4	0.057	288	<0.04	0.092	2.41	49	0.027	246	21.1	0.08	0.14	2320	3090	0.19	<0.004	1430	0.47	0.0007	<0.02	<0.2	<0.0004	<0.04	14.3
2011-MIPE-PCSA01-05 (MUSCLE)	2.3	<0.001	<0.01	0.66	<0.02	<0.02	<0.4	0.044	125	<0.04	0.037	1.89	37	0.007	207	6.93	0.02	0.06	2140	3220	0.15	<0.004	1020	0.22	0.0005	<0.02	0.2	<0.0004	<0.04	11.7
2011-MIPE-PCSA01-06 (MUSCLE)	5.5	0.002	<0.02	1.62	<0.03	<0.03	<0.6	0.054	3380	0.09	0.057	2.34	66	0.034	331	2.29	0.05	0.16	4040	3960	0.15	<0.006	1190	1.95	<0.0006	<0.03	0.3	0.0015	<0.06	15.4
2011-MIPE-PCSA01-07 (MUSCLE)	0.9	<0.002	<0.02	2.61	<0.04	<0.04	<0.8	0.057	5460	<0.08	0.081	2.58	71	0.012	379	1.66	0.07	0.1	5440	4310	0.16	<0.008	1200	3.1	<0.0008	<0.04	<0.4	<0.0008	<0.08	17.2
2011-MIPE-PCSA01-12 (MUSCLE)	0.7	0.001	<0.01	1.57	<0.02	<0.02	<0.4	0.03	2890	<0.04	0.057	2.27	55	0.008	323	1.94	0.08	0.06	3590	3550	0.1	<0.004	884	1.8	<0.0004	<0.02	<0.2	<0.0004	<0.04	13.5
2011-MIPE-PCSA01-14 (MUSCLE)	4.7	0.002	<0.01	0.94	<0.02	<0.02	<0.4	0.015	243	<0.04	0.043	1.58	40	0.014	172	3	0.04	0.06	1500	2590	0.12	<0.004	783	0.35	0.0008	<0.02	0.5	0.0008	<0.04	8.17
2011-MIPE-PCSA01-19(MUSCLE)	1.3	<0.002	<0.02	0.94	<0.03	<0.03	<0.6	0.033	356	<0.06	0.071	2.12	36	0.006	277	2.91	0.05	0.15	2130	3280	0.12	<0.006	1320	0.9	<0.0006	<0.03	<0.3	<0.0006	<0.06	12.9
2011-MIPE-PCSA01-20(MUSCLE)	1.2	<0.001	<0.01	1	<0.02	<0.02	<0.4	0.05	1960	<0.04	0.051	2.11	74	0.019	273	1.79	0.07	0.13	3110	3240	0.16	<0.004	1200	1.42	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.7
2011-MIPE-PCSA03-01 (MUSCLE)	0.7	<0.001	<0.01	1.36	<0.02	<0.02	<0.4	0.03	167	<0.04	0.098	1.67	46	0.006	211	4.46	0.03	0.2	2240	3720	0.11	<0.004	999	0.44	<0.0004	<0.02	<0.2	<0.0004	<0.04	13.1
2011-MIPE-PCSA03-28 (MUSCLE)	1.2	<0.001	<0.01	2.07	<0.02	<0.02	<0.4	0.035	438	<0.04	0.074	1.82	47	0.005	231	16.4	0.04	0.15	2040	2820	0.12	<0.004	1380	0.46	<0.0004	<0.02	0.2	<0.0004	<0.04	11.9
2011-MIPE-PCSA01-26(MUSCLE)	4.2	0.002	0.24	1.37	<0.02	<0.02	<0.4	0.029	2790	<0.04	0.074	2.13	54	0.016	297	1.87	0.06	0.1	3510	3400	0.11	<0.004	971	1.71	<0.0004	<0.02	0.4	0.0013	<0.04	12.8
2011-MIPE-PCSA01-29(MUSCLE)	3.1	0.001	0.03	0.93	<0.02	<0.02	<0.4	0.204	309	<0.04	0.116	2.19	67	0.009	254	4.67	0.08	0.19	2160	3610	0.16	<0.004	1170	0.57	<0.0004	<0.02	0.2	0.0012	<0.04	12.5
Siberian Lemming (Muscle)																														
2011-LESI-MCRA05-04 (MUSCLE)	1	<0.001	<0.01	1.57	<0.02	<0.02	<0.4	0.074	1450	<0.04	0.022	1.74	57	0.006	243	5.32	0.05	0.05	2550	3200	0.34	<0.004	889	0.56	<0.0004	<0.02	<0.2	<0.0004	<0.04	11.3
2011-LESI-MCRA05-13 (MUSCLE)	0.6	0.001	0.02	2.96	<0.02	<0.02	<0.4	0.121	1790	<0.04	0.032	1.87	56	0.008	223	2.6	0.04	0.07	2940	3290	0.37	<0.004	964	0.87	<0.0004	<0.02	<0.2	0.0009	<0.04	13.9
2011-LESI-MCRA05-14 (MUSCLE)	1.2	0.002	<0.01	1	<0.02	<0.02	<0.4	0.135	408	<0.04	0.024	1.62	69	0.005	224	3.27	0.05	0.07	2150	3150	0.23	<0.004	949	0.2	<0.0004	<0.02	<0.2	<0.0004	<0.04	11.3
2011-LESI-MCRA05-19 (MUSCLE)	<0.4	<0.001	0.01	0.57	<0.02	<0.02	<0.4	0.047	193	<0.04	0.025	1.46	48	0.004	216	7.84	0.07	0.07	1820	3150	0.34	<0.004	950	0.18	<0.0004	<0.02	<0.2	<0.0004	<0.04	9.5
2011-LESI-MCRA05-21 (MUSCLE)	<0.4	<0.001	<0.01	1.14	<0.02	<0.02	<0.4	0.014	1270	<0.04	0.016	1.96	81	0.008	258	4.46	0.06	0.05	2900	3580	0.25	<0.004	1170	0.45	<0.0004	<0.02	<0.2	<0.0004	<0.04	14.8
2011-LESI-MCRA05-28 (MUSCLE)	<0.4	<0.001	<0.01	0.57	<0.02	<0.02	<0.4	0.173	287	<0.04	0.018	1.78	55	0.007	226	4.32	0.04	0.03	2240	3340	0.31	<0.004	1020	0.2	<0.0004	<0.02	<0.2	<0.0004	<0.04	10.2

Appendix F

Summary of Statistical Comparisons for Metals Levels in Redback Voles

Statistical summary of the comparisons made for mean total metal concentrations found in the whole body of Redback Vole (Clethrionomys rutilus) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA vs PCSA	0.05	0.6375	0.227	4.210	Accepted
	MSSA vs MCRA	0.05	2.5898E-05	25.251	4.196	**Rejected**
	PCSA vs MCRA	0.05	0.1803	1.892	4.210	Accepted
Cd	MSSA vs PCSA	0.05	0.034	4.960	4.210	**Rejected**
	MSSA vs MCRA	0.05	0.062	3.788	4.196	Accepted
	PCSA vs MCRA	0.05	0.311	1.068	4.210	Accepted
Cu	MSSA vs PCSA	0.05	0.5427	0.380	4.210	Accepted
	MSSA vs MCRA	0.05	0.0013	12.775	4.196	**Rejected**
	PCSA vs MCRA	0.05	0.0373	4.800	4.210	**Rejected**
Pb	MSSA vs PCSA	0.05	0.0206	6.045	4.210	**Rejected**
	MSSA vs MCRA	0.05	0.0301	5.219	4.196	**Rejected**
	PCSA vs MCRA	0.05	0.4961	0.476	4.210	Accepted
Ni	MSSA vs PCSA	0.05	0.2859	1.185	4.210	Accepted
	MSSA vs MCRA	0.05	0.0047	9.455	4.196	**Rejected**
	PCSA vs MCRA	0.05	0.0190	6.229	4.210	**Rejected**
Se	MSSA vs PCSA	0.05	0.3644	0.851	4.210	Accepted
	MSSA vs MCRA	0.05	0.0542	4.038	4.196	Accepted
	PCSA vs MCRA	0.05	0.5147	0.436	4.210	Accepted
Zn	MSSA vs PCSA	0.05	0.5131	0.439	4.210	Accepted
	MSSA vs MCRA	0.05	0.3240	1.008	4.196	Accepted
	PCSA vs MCRA	0.05	0.8464	0.038	4.210	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in the kidney of Redback Vole (Clethrionomys rutilus) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA vs PCSA	0.05	0.3110	1.0545	4.0982	Accepted
	MSSA vs MCRA	0.05	0.5144	0.4366	4.2100	Accepted
	PCSA vs MCRA	0.05	0.2152	1.6059	4.1830	Accepted
Cd	MSSA vs PCSA	0.05	0.5587	0.3481	4.0982	Accepted
	MSSA vs MCRA	0.05	0.2451	1.4118	4.2100	Accepted
	PCSA vs MCRA	0.05	0.2234	1.5479	4.1830	Accepted
Cu	MSSA vs PCSA	0.05	0.2405	1.4220	4.0982	Accepted
	MSSA vs MCRA	0.05	0.9678	0.0017	4.2100	Accepted
	PCSA vs MCRA	0.05	0.4286	0.6447	4.1830	Accepted
Pb	MSSA vs PCSA	0.05	0.0085	7.6948	4.0982	Accepted
	MSSA vs MCRA	0.05	0.0472	4.3248	4.2100	**Rejected**

	PCSA vs MCRA	0.05	0.0675	3.6066	4.1830	Accepted
	MSSA vs PCSA	0.05	0.2068	1.6497	4.0982	Accepted
	MSSA vs MCRA	0.05	0.0005	15.5492	4.2100	**Rejected**
Ni	PCSA vs MCRA	0.05	0.0886	3.1050	4.1830	Accepted
	MSSA vs PCSA	0.05	0.0028	10.1932	4.0982	**Rejected**
	MSSA vs MCRA	0.05	0.1496	2.2001	4.2100	Accepted
Se	PCSA vs MCRA	0.05	0.1502	2.1842	4.1830	Accepted
	MSSA vs PCSA	0.05	0.1332	2.3543	4.0982	Accepted
	MSSA vs MCRA	0.05	0.6152	0.2587	4.2100	Accepted
Zn	PCSA vs MCRA	0.05	0.4166	0.6793	4.1830	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in the liver of Redback Vole (Clethrionomys rutilus) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Comparison	α - value	P - value	F - value	F critical	Null Hypothesis
	MSSA vs PCSA	0.05	0.8464	0.038	4.098	Accepted
As	MSSA vs MCRA	0.05	0.8000	0.065	4.210	Accepted
	PCSA vs MCRA	0.05	0.6829	0.170	4.183	Accepted
	MSSA vs PCSA	0.05	0.5103	0.442	4.098	Accepted
Cd	MSSA vs MCRA	0.05	0.2722	1.256	4.210	Accepted
	PCSA vs MCRA	0.05	0.6324	0.234	4.183	Accepted
	MSSA vs PCSA	0.05	0.7418	0.110	4.098	Accepted
Cu	MSSA vs MCRA	0.05	0.0041	9.821	4.210	**Rejected**
	PCSA vs MCRA	0.05	0.0155	6.619	4.183	**Rejected**
	MSSA vs PCSA	0.05	0.0198	5.916	4.098	**Rejected**
	MSSA vs MCRA	0.05	0.1054	2.806	4.210	Accepted
Pb	PCSA vs MCRA	0.05	0.8925	0.019	4.183	Accepted
	MSSA vs PCSA	0.05	0.0750	3.353	4.098	Accepted
	MSSA vs MCRA	0.05	0.0660	3.672	4.210	Accepted
Ni	PCSA vs MCRA	0.05	0.5336	0.397	4.183	Accepted
	MSSA vs PCSA	0.05	0.0001	18.105	4.098	**Rejected**
	MSSA vs MCRA	0.05	0.0092	7.877	4.210	**Rejected**
Se	PCSA vs MCRA	0.05	0.5446	0.376	4.183	Accepted
	MSSA vs PCSA	0.05	0.9995	0.000	4.098	Accepted
	MSSA vs MCRA	0.05	0.2019	1.711	4.210	Accepted
Zn	PCSA vs MCRA	0.05	0.3354	0.960	4.183	Accepted

Statistical summary of the comparisons made for mean total metal concentrations found in the muscle tissue of Redback Vole (Clethrionomys rutilus) between sampling periods for each study area, using an Analysis of Variance (ANOVA) with 95% confidence. Note that a "rejected" Null hypothesis indicates that the comparison between means was significantly different.

	Total Arsenic	α - value	P - value	F - value	F critical	Null Hypothesis
As	MSSA vs PCSA	0.05	0.4619	0.553	4.105	Accepted
	MSSA vs MCRA	0.05	0.9184	0.011	4.225	Accepted
	PCSA vs MCRA	0.05	0.5951	0.289	4.183	Accepted
Cd	MSSA vs PCSA	0.05	0.1266	2.442	4.105	Accepted
	MSSA vs MCRA	0.05	0.3224	1.017	4.225	Accepted
	PCSA vs MCRA	0.05	0.6878	0.165	4.183	Accepted
Cu	MSSA vs PCSA	0.05	0.7747	0.083	4.105	Accepted
	MSSA vs MCRA	0.05	0.0207	6.064	4.225	**Rejected**
	PCSA vs MCRA	0.05	0.0404	4.603	4.183	**Rejected**
Pb	MSSA vs PCSA	0.05	0.0473	4.209	4.105	**Rejected**
	MSSA vs MCRA	0.05	0.1431	2.280	4.225	Accepted
	PCSA vs MCRA	0.05	0.2164	1.597	4.183	Accepted
Ni	MSSA vs PCSA	0.05	0.0729	3.408	4.105	Accepted
	MSSA vs MCRA	0.05	0.0148	6.722	4.183	**Rejected**
	PCSA vs MCRA	0.05	0.0148	6.722	4.183	**Rejected**
Se	MSSA vs PCSA	0.05	0.0002	16.464	4.105	**Rejected**
	MSSA vs MCRA	0.05	0.0045	9.650	4.225	**Rejected**
	PCSA vs MCRA	0.05	0.5702	0.330	4.183	Accepted
Zn	MSSA vs PCSA	0.05	0.7823	0.077	4.105	Accepted
	MSSA vs MCRA	0.05	0.4973	0.474	4.225	Accepted
	PCSA vs MCRA	0.05	0.6744	0.180	4.183	Accepted