

## Site Assessment Report

### A. Site Description

<b>CABIN Study Name</b>	BC-Elk River Tributaries-Elk River Alliance
<b>CABIN Site Code</b>	Liz-01
<b>Sampling Date</b>	Oct 11 2012
<b>Know Your Watershed (KYW) Basin</b>	Central Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera Ecozone Northern Continental Divide Ecoregion
<b>Coordinates (decimal degrees)</b>	49.47128 N, 115.07707 W
<b>Altitude</b>	3248
<b>Feature Name</b>	Lizard Creek
<b>Stream Order</b>	3



Figure 1. Location Map



Across Reach



Down Stream

Field Crew: Alice Dickhaut Site Code: LIZ-01  
 Sampling Date: (DDMMYY) 11/10/2012

Occupational Health & Safety: Site Inspection Sheet completed

**PRIMARY SITE DATA**  
 CABIN Study Name: Lizard Test Site Local Basin Name: Lizard Creek  
 River/Stream Name: Lizard Creek Stream Order: (map scale 1:50,000) 3rd

Select one:  Test Site  Potential Reference Site  
 \* contact Stephanie re: potential ref site - still want test results

**Geographical Description/Notes:** Lizard Creek - site 1  
 Traveling 'west' (south) on highway 3, turn off is gravel road immediately after Lizard Creek bridge. Park on right & walk downhill (towards highway) - then upstream along R bank ~ 40m  
 Surrounding Land Use: (check those present)  
 Information Source: Visual Map

Forest  Field/Pasture  Agriculture  Residential/Urban  
 Logging  Mining  Commercial/Industrial  Other Highway 3

**Dominant Surrounding Land Use:** (check one)  
 Forest  Field/Pasture  Agriculture  Residential/Urban  
 Logging  Mining  Commercial/Industrial  Other \_\_\_\_\_

**Information Source:** Visual Map

**Location Data**  
 Latitude: 54°28'16.410" N Longitude: -115°04'31.931" W (NMS or DD)  
 Elevation: 990 (feet or (m)) GPS Datum:  GRS80 (NAD83)  Other \_\_\_\_\_

**Site Location Map Drawing**

Note: Indicate north

2012-11-15

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CABIN

10/11/2012

Field Sheet



Substrate



Up Stream  
Figure 2. Site Photographs

**B. CABIN Assessment Results**

REFERENCE MODEL SUMMARY					
<b>Model Name</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	April 10, 2015				
<b>Taxonomic Level</b>	Family				
<b>Predictor Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-SlopeLT30%				
<b>Reference Groups</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Number of Reference Sites</b>	9	43	17	12	33
<b>Group Error Rate</b>	22.2%	24.5%	22.2%	25.0%	32.4%
<b>Overall Model Error Rate</b>	26.4%				
<b>Probability of Group Membership</b>	0.0%	0.6%	77.2%	20.4%	1.8%
<b>CABIN Assessment of Liz-01 on Oct 11, 2012</b>	Divergent				

**Group 3 Vectors**  
**Liz-01 (Oct 11 2012) - Axis 1 Vs Axis 2**

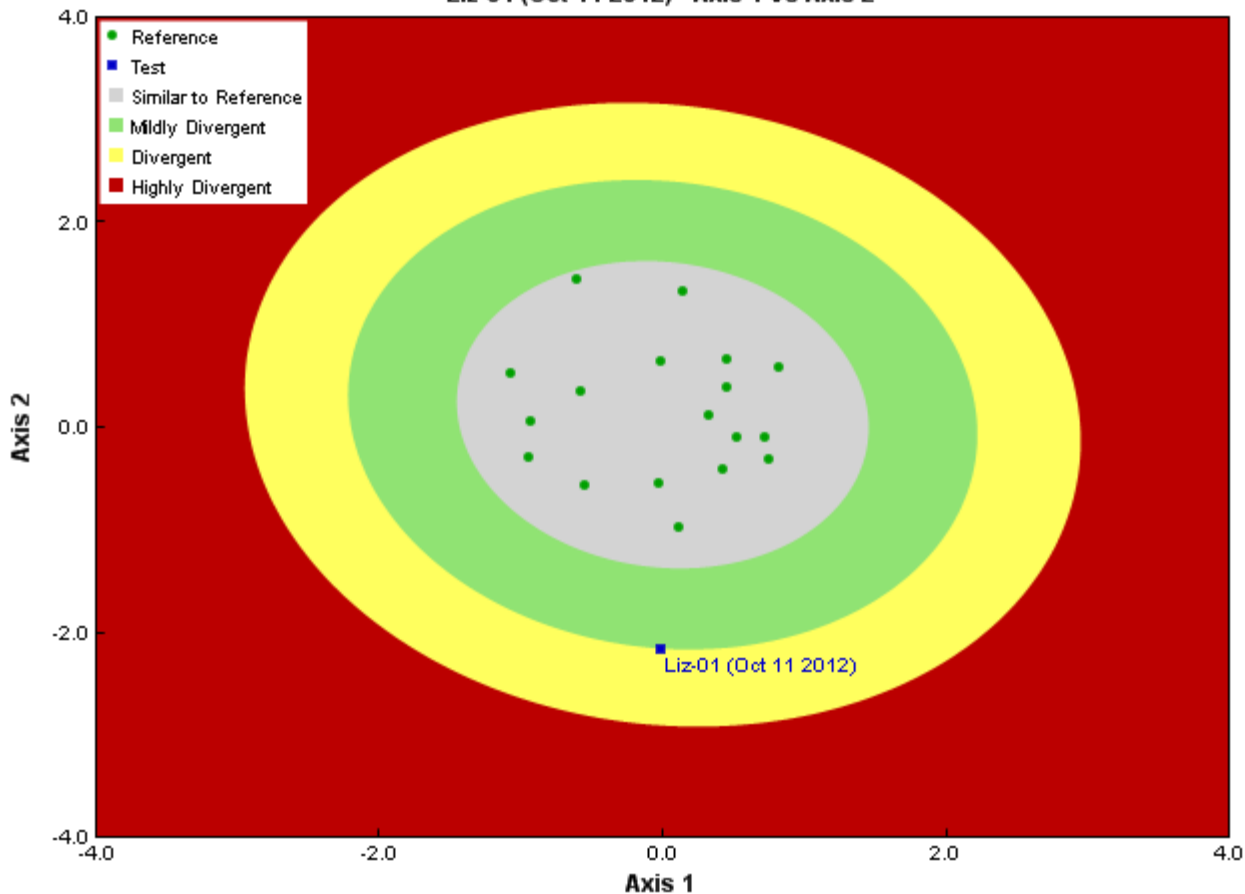


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	363
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Eco Analsyts, EcoAnalysts
<b>Identification Date</b>	February 08, 2013
<b>Subsampling Device</b>	Marchant Box
<b>Proportion Subsampled</b>	100/100

**Community Structure Sample Data**

Phylum	Class	Order	Family	Raw Count	Mean Count
Annelida	Oligochaeta	Haplotaxida		1	1.0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	4	4.0
		Insecta	Coleoptera	Elmidae	52
		Diptera	Chironomidae	9	9.0
			Empididae	3	3.0
			Psychodidae	15	15.0
			Tipulidae	1	1.0
		Ephemeroptera	Baetidae	24	24.0
			Ephemerellidae	85	85.0
			Heptageniidae	27	27.0
		Plecoptera	Capniidae	28	28.0
			Chloroperlidae	3	3.0
			Nemouridae	38	38.0
			Perlidae	10	10.0
			Perlodidae	3	3.0

Community Structure Sample Data

Phylum	Class	Order	Family	Raw Count	Mean Count
			Taeniopterygidae	14	14.0
		Trichoptera	Apataniidae	2	2.0
			Hydropsychidae	2	2.0
			Rhyacophilidae	12	12.0
			Total	333	333.0

Site Metrics

Metric Name	Liz-01	Predicted Group Reference Mean ±SD
Bray-Curtis Distance	0.86	0.4 ± 0.2
<b>Biotic Indices</b>		
Long-lived taxa	2.0	1.9 ± 1.3
<b>Number Of Individuals</b>		
No. EPT individuals/Chironomids+EPT Individuals	1.0	0.9 ± 0.1
Total Abundance	332.0	5757.3 ± 4889.9
<b>Richness</b>		
EPT taxa (no)	12.0	11.5 ± 1.2
Total No. of Taxa	18.0	17.1 ± 2.4

D. Habitat Description

Variable	Liz-01	Predicted Group Reference Mean ±SD
<b>Channel</b>		
Depth-Avg (cm)	15.7	22.5 ± 10.5
Depth-BankfullMinusWetted (cm)	18.50	67.33 ± 71.65
Depth-Max (cm)	25.5	32.9 ± 17.9
Discharge (m <sup>3</sup> /s)	2.100	0.000 ± 0.000
Macrophyte (PercentRange)	0	0 ± 0
Reach-%CanopyCoverage (PercentRange)	2.00	0.94 ± 0.80
Reach-DomStreamsideVeg (Category (1-4))	3	3 ± 1
Reach-Pools (Binary)	1	0 ± 1
Reach-Rapids (Binary)	0	0 ± 1
Reach-Riffles (Binary)	1	1 ± 0
Reach-StraightRun (Binary)	1	1 ± 0
Slope (m/m)	0.0200000	0.0235102 ± 0.0284557
Veg-Coniferous (Binary)	1	1 ± 0
Veg-Deciduous (Binary)	1	1 ± 0
Veg-GrassesFerns (Binary)	1	1 ± 0
Veg-Shrubs (Binary)	1	1 ± 0
Velocity-Avg (m/s)	0.53	0.51 ± 0.25
Velocity-Max (m/s)	0.70	0.75 ± 0.28
Width-Bankfull (m)	11.3	15.6 ± 12.8
Width-Wetted (m)	7.1	10.2 ± 7.0
XSEC-VelMethod (Category (1-3))	1	2 ± 1
<b>Landcover</b>		
Reg-Ice (%)	0.00000	0.46949 ± 1.15785
<b>Sediment Chemistry</b>		
Ag (ppm)	0.000	0.000 ± 0.000
Al (ppm)	0.102	0.006 ± 0.004
As (ppm)	0.000	0.000 ± 0.000
B (ppm)	0.025	0.050
Ba (ppm)	0.068	0.064 ± 0.045
Be (ppm)	0.000	0.000 ± 0.000
Bi (ppm)	0.001	0.000 ± 0.000
Ca (ppm)	78.800	38.614 ± 14.846
Cd (ppm)	0.000	0.000 ± 0.000
Co (ppm)	0.000	0.000 ± 0.000
Cr (ppm)	0.001	0.000 ± 0.000
Cu (ppm)	0.001	0.000 ± 0.000
Fe (ppm)	0.093	0.009
Hg (ppm)	0.000	0.000 ± 0.000



**D. Habitat Description**

Variable	Liz-01	Predicted Group Reference Mean ±SD
K (ppm)	0.459	0.647 ± 0.715
Li (ppm)	0.003	0.001 ± 0.000
Mg (ppm)	18.800	9.881 ± 6.160
Mn (ppm)	0.006	0.001 ± 0.002
Mo (ppm)	0.002	0.002 ± 0.007
Na (ppm)	1.530	2.636 ± 3.771
Ni (ppm)	0.001	0.000 ± 0.000
Pb (ppm)	0.000	0.000 ± 0.000
S (ppm)	45.800	5.000
Sb (ppm)	0.000	0.000 ± 0.000
Se (ppm)	0.000	0.000 ± 0.000
Si (ppm)	2.650	3.066 ± 1.407
Sn (ppm)	0.003	0.000 ± 0.000
Sr (ppm)	1.160	0.116 ± 0.098
Ti (ppm)	0.003	0.001
Tl (ppm)	0.000	0.000 ± 0.000
U (ppm)	0.000	0.001 ± 0.000
U (ppm)	0.000	0.000 ± 0.000
V (ppm)	0.003	0.000 ± 0.000
Zn (ppm)	0.003	0.000 ± 0.001
Zr (ppm)	0.000	0.000 ± 0.000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 ± 0
%Boulder (%)	6	6 ± 7
%Cobble (%)	41	61 ± 27
%Gravel (%)	10	1 ± 2
%Pebble (%)	35	31 ± 28
%Sand (%)	0	0 ± 0
%Silt+Clay (%)	7	1 ± 3
D50 (cm)	5.90	79.45 ± 47.98
Dg (cm)	3.9	73.9 ± 48.0
Dominant-1st (Category(0-9))	6	6 ± 2
Dominant-2nd (Category(0-9))	5	6 ± 2
Embeddedness (Category(1-5))	4	4 ± 1
PeriphytonCoverage (Category(1-5))	3	2 ± 1
SurroundingMaterial (Category(0-9))	3	4 ± 2
<b>Topography</b>		
Reg-SlopeLT30% (%)	34.66000	27.92073 ± 14.83033
SlopeLT30% (%)	34.66000	27.74594 ± 10.84742
<b>Water Chemistry</b>		
Ag (mg/L)	0.0000220	0.0000000 ± 0.0000000
Al (mg/L)	0.1020000	0.0000000 ± 0.0000000
As (mg/L)	0.0002000	0.0000000 ± 0.0000000
B (mg/L)	0.0250000	0.0000000 ± 0.0000000
Ba (mg/L)	0.0678000	0.0000000 ± 0.0000000
Be (mg/L)	0.0000500	0.0000000 ± 0.0000000
Bi (mg/L)	0.0005000	0.0000000 ± 0.0000000
Ca (mg/L)	78.8000000	0.0000000 ± 0.0000000
Cd (mg/L)	0.0000210	0.0000000 ± 0.0000000
Co (mg/L)	0.0002500	0.0000000 ± 0.0000000
Cr (mg/L)	0.0005000	0.0000000 ± 0.0000000
Cu (mg/L)	0.0005600	0.0000000 ± 0.0000000
Fe (mg/L)	0.0928000	0.0000000 ± 0.0000000
General-Alkalinity (mg/L)	131.0000000	121.5944444 ± 36.7225924
General-Conductivity (uS/cm)	470.0000000	186.8500000 ± 84.0864011
General-DO (mg/L)	10.0000000	10.4922222 ± 0.8833463
General-Hardness (mg/L)	274.0000000	146.8222222 ± 41.6699011
General-pH (pH)	8.7	8.0 ± 0.6
General-TempAir (Degrees Celsius)	0.0	10.5 ± 4.2
General-TempWater (Degrees Celsius)	2.8000000	6.6716667 ± 2.0277755
Hg (ng/L)	0.0000250	0.0000000 ± 0.0000000
K (mg/L)	0.4590000	0.0000000 ± 0.0000000

**D. Habitat Description**

<b>Variable</b>	<b>Liz-01</b>	<b>Predicted Group Reference Mean <math>\pm</math>SD</b>
<b>Li (mg/L)</b>	0.0025000	0.0000000 $\pm$ 0.0000000
<b>Mg (mg/L)</b>	18.8000000	0.0000000 $\pm$ 0.0000000
<b>Mn (mg/L)</b>	0.0057000	0.0000000 $\pm$ 0.0000000
<b>Mo (mg/L)</b>	0.0015000	0.0000000 $\pm$ 0.0000000
<b>Na (mg/L)</b>	1.5300000	0.0000000 $\pm$ 0.0000000
<b>Ni (mg/L)</b>	0.0005000	0.0000000 $\pm$ 0.0000000
<b>Nitrogen-NO2 (mg/L)</b>	0.0025000	0.0023889 $\pm$ 0.0063351
<b>Nitrogen-NO2+NO3 (mg/L)</b>	0.1480000	0.0130000 $\pm$ 0.0088111
<b>Nitrogen-NO3 (mg/L)</b>	0.1480000	0.0245003 $\pm$ 0.0229452
<b>Pb (mg/L)</b>	0.0001000	0.0000000 $\pm$ 0.0000000
<b>Phosphorus-TP (mg/L)</b>	0.0214000	0.0032778 $\pm$ 0.0061816
<b>S (mg/L)</b>	45.8000000	0.0000000 $\pm$ 0.0000000
<b>Sb (mg/L)</b>	0.0002500	0.0000000 $\pm$ 0.0000000
<b>Se (mg/L)</b>	0.0003700	0.0000000 $\pm$ 0.0000000
<b>Si (mg/L)</b>	2.6500000	0.0000000 $\pm$ 0.0000000
<b>Sn (mg/L)</b>	0.0025000	0.0000000 $\pm$ 0.0000000
<b>Sr (mg/L)</b>	1.1600000	0.0000000 $\pm$ 0.0000000
<b>Ti (mg/L)</b>	0.0025000	0.0000000 $\pm$ 0.0000000
<b>Tl (mg/L)</b>	0.0000250	0.0000000 $\pm$ 0.0000000
<b>U (mg/L)</b>	0.0003400	0.0000000 $\pm$ 0.0000000
<b>V (mg/L)</b>	0.0025000	0.0000000 $\pm$ 0.0000000
<b>Zn (mg/L)</b>	0.0025000	0.0000000 $\pm$ 0.0000000
<b>Zr (mg/L)</b>	0.0002500	0.0000000 $\pm$ 0.0000000