

**Site Description**

<b>Study Name</b>	CBWQ-Elk
<b>Site</b>	A1x-01
<b>Sampling Date</b>	Oct 07 2014
<b>Know Your Watershed 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>	49.67444 N, 114.77972 W
<b>Altitude</b>	
<b>Local Basin Name</b>	Alexander Creek
	Elk River
<b>Stream Order</b>	4

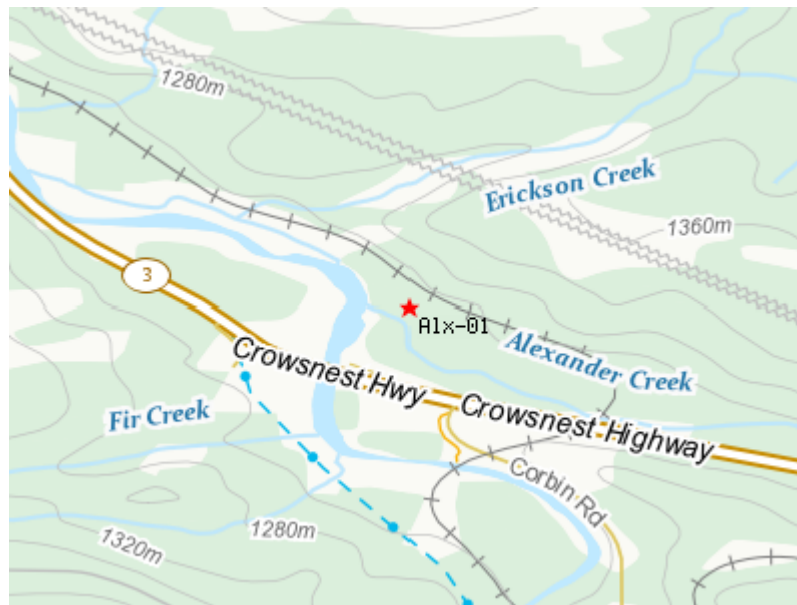


Figure 1. Location Map



Across Reach





Down Stream

Field Crew: Allye DeChaut, Ayla Bennett Site Code: ALX-01  
 Sampling Date: (DD/MM/YYYY) 07/10/2014

Occupational Health & Safety: Site Inspection Sheet completed

**PRIMARY SITE DATA**  
 CABIN Study Name: ELK RIVER HABITAT LOCAL BASIN NAME: ELK RIVER  
 River/Stream Name: Alexander Creek Stream Order: (map scale 1:50,000) 4

Select one:  Test Site  Potential Reference Site

**Geographical Description/Notes:** Alexander Creek site 1 location ~80 m u/s of confluence with Michel Creek.

Surrounding Land Use: (check those present)  
 Forest  Field/Pasture  Agriculture  Residential/Urban  
 Logging  Mining  Commercial/Industrial  Other highway / C/P track

Information Source:  
 Residential/Urban  Other highway / C/P track

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

Information Source:  
 Residential/Urban  Other

**Location Data**  
 Latitude: 49°40'28" N Longitude: 114°46'47" W (MGS or DD)  
 Elevation: \_\_\_\_\_ (feet or meter) GPS Datum:  NAD83/WGS84  Other: \_\_\_\_\_

**Site Location Map Drawing**

Note: Indicate north

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Field Sheet





Up Stream

### Cabin Assessment Results

Reference Model Summary					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	April 10, 2015				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model 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%	0.3%	86.5%	11.6%	1.6%
<b>CABIN Assessment of Alx-01 on Oct 07, 2014</b>	Similar to Reference				

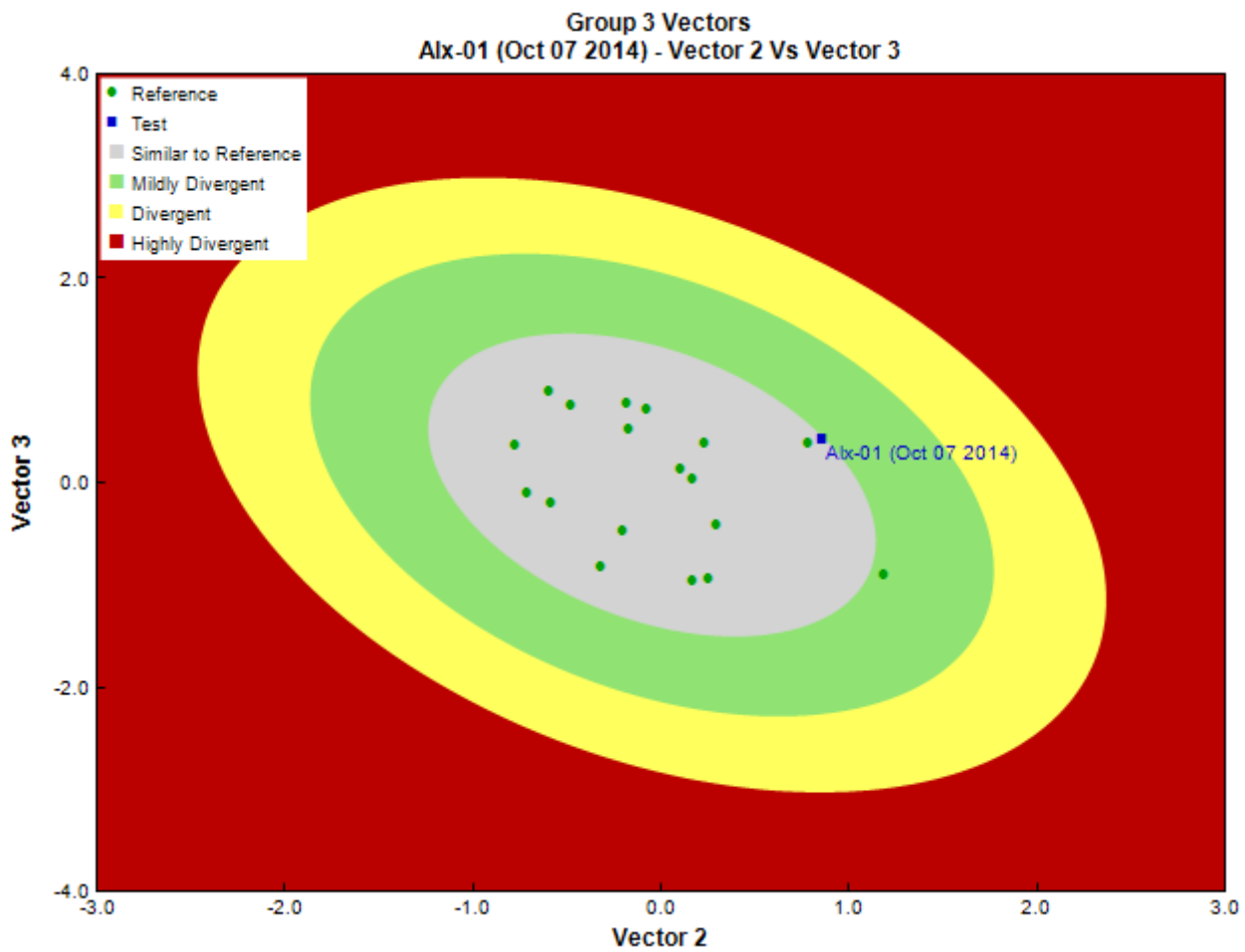


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Pina Viola, Consultant
<b>Date Taxonomy Completed</b>	March 01, 2015
	Marchant Box
<b>Sub-Sample Proportion</b>	5/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	2	40.0
		Tubificida	Naididae	1	20.0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	2	40.0
		Insecta	Coleoptera	Elmidae	2
	Diptera		Chironomidae	8	160.0
			Psychodidae	30	600.0
		Simuliidae	1	20.0	
		Tipulidae	1	20.0	
	Ephemeroptera	Ameletidae	3	60.0	
		Baetidae	28	560.0	
		Ephemerellidae	71	1,420.0	
		Heptageniidae	55	1,100.0	
		Plecoptera	Capniidae	3	60.0
Chloroperlidae			9	180.0	
Nemouridae	13		260.0		

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlidae	2	40.0
			Perlodidae	3	60.0
			Taeniopterygidae	39	780.0
		Trichoptera	Apataniidae	38	760.0
			Glossosomatidae	64	1,280.0
			Hydropsychidae	2	40.0
			Rhyacophilidae	6	120.0
			Uenoidae	4	80.0
			Total	387	7,740.0

**Metrics**

Name	Alx-01	Predicted Group Reference Mean $\pm$ SD
<b>Bray-Curtis Distance</b>	0.47	0.4 $\pm$ 0.2
<b>Biotic Indices</b>		
<b>Long-lived taxa</b>	2.0	1.9 $\pm$ 1.3
<b>Number Of Individuals</b>		
<b>No. EPT individuals/Chironomids+EPT Individuals</b>	1.0	0.9 $\pm$ 0.1
<b>Total Abundance</b>	7740.0	5757.3 $\pm$ 4889.9
<b>Richness</b>		
<b>EPT taxa (no)</b>	15.0	11.5 $\pm$ 1.2
<b>Total No. of Taxa</b>	23.0	17.1 $\pm$ 2.4

**Frequency and Probability of Taxa Occurrence**

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at Alx-01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Ameletidae	56%	53%	22%	50%	68%	0.26
Apataniidae	22%	24%	28%	25%	3%	0.27
Athericidae	0%	2%	0%	17%	0%	0.02
Aturidae	0%	8%	0%	0%	0%	0.00
Baetidae	100%	100%	100%	100%	97%	1.00
Blephariceridae	0%	0%	0%	0%	5%	0.00
Brachycentridae	11%	69%	0%	42%	3%	0.05
Capniidae	78%	55%	50%	92%	68%	0.55
Ceratopogonidae	0%	55%	28%	42%	5%	0.29
Chironomidae	100%	100%	100%	100%	95%	1.00
Chloroperlidae	78%	88%	94%	100%	100%	0.95
Corixidae	11%	0%	0%	0%	0%	0.00
Curculionidae	0%	4%	0%	0%	0%	0.00
Deuterophlebiidae	0%	0%	0%	0%	3%	0.00
Dixidae	0%	10%	0%	0%	0%	0.00
Dytiscidae	0%	8%	6%	0%	0%	0.05
Elmidae	0%	86%	50%	50%	5%	0.49
Empididae	67%	55%	50%	67%	57%	0.52
Enchytraeidae	11%	14%	0%	8%	0%	0.01
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Ephydriidae	0%	2%	0%	0%	0%	0.00
Glossosomatidae	11%	49%	39%	42%	35%	0.39
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydraenidae	0%	4%	0%	0%	0%	0.00
Hydrophilidae	11%	2%	0%	0%	0%	0.00
Hydropsychidae	11%	92%	78%	92%	86%	0.80
Hydroptilidae	11%	8%	0%	0%	0%	0.00
Hydrozetidae	0%	10%	17%	8%	16%	0.16
Hydryphantidae	11%	31%	11%	8%	8%	0.11
Hygrobatidae	0%	29%	0%	0%	11%	0.00
Lebertiidae	78%	65%	39%	58%	5%	0.41
Lepidostomatidae	0%	53%	6%	17%	8%	0.07
Leptohyphidae	0%	2%	0%	0%	0%	0.00
Leptophlebiidae	0%	90%	11%	33%	3%	0.14
Leuctridae	22%	43%	56%	67%	54%	0.57

### Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at Aix-01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Limnephilidae	22%	31%	6%	25%	41%	0.08
Limnesiidae	0%	2%	0%	0%	0%	0.00
Lumbriculidae	0%	20%	17%	25%	3%	0.17
Mideopsidae	0%	2%	0%	0%	0%	0.00
Naididae	0%	6%	39%	0%	3%	0.34
Nemouridae	100%	100%	100%	100%	100%	1.00
Pelecoryhynchidae	0%	22%	6%	0%	0%	0.05
Peltoperlidae	22%	12%	6%	8%	41%	0.06
Perlidae	11%	84%	33%	100%	3%	0.41
Perlodidae	78%	78%	89%	92%	81%	0.89
Philopotamidae	0%	31%	0%	0%	3%	0.00
Pisidiidae	0%	6%	0%	8%	0%	0.01
Planariidae	0%	8%	67%	17%	3%	0.60
Planorbidae	0%	0%	0%	0%	3%	0.00
Psychodidae	22%	65%	94%	8%	11%	0.83
Pteronarcyidae	0%	12%	6%	0%	3%	0.05
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Simuliidae	33%	49%	39%	33%	16%	0.38
Sperchontidae	78%	63%	50%	42%	65%	0.49
Stygothrombidiidae	0%	4%	0%	17%	0%	0.02
Taeniopterygidae	89%	49%	100%	92%	97%	0.99
Thaumaleidae	11%	4%	0%	0%	0%	0.00
Tipulidae	56%	55%	28%	67%	43%	0.33
Torrenticolidae	11%	86%	11%	17%	11%	0.12
Tubificidae	0%	2%	0%	0%	0%	0.00
Uenoidae	22%	37%	17%	25%	46%	0.18
Valvatidae	0%	2%	6%	0%	0%	0.05

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	12.69
RIVPACS : Observed taxa P>0.50	12.00
RIVPACS : O:E (p > 0.5)	0.95
RIVPACS : Expected taxa P>0.70	10.45
RIVPACS : Observed taxa P>0.70	11.00
RIVPACS : O:E (p > 0.7)	1.05

### Habitat Description

Variable	Aix-01	Predicted Group Reference Mean $\pm$ SD
<b>Channel</b>		
Depth-Avg (cm)	20.0	22.5 $\pm$ 10.5
Depth-BankfullMinusWetted (cm)	17.00	67.33 $\pm$ 71.65
Depth-Max (cm)	53.0	32.9 $\pm$ 17.9
Discharge (m <sup>3</sup> /s)	1.520	0.000 $\pm$ 0.000
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.94 $\pm$ 0.80
Reach-DomStreamsideVeg (Category (1-4))	4	3 $\pm$ 1
Reach-Pools (Binary)	0	0 $\pm$ 1
Reach-Rapids (Binary)	0	0 $\pm$ 1
Reach-Riffles (Binary)	1	1 $\pm$ 0
Reach-StraightRun (Binary)	0	1 $\pm$ 0
Slope (m/m)	0.0099600	0.0235102 $\pm$ 0.0284557
Veg-Coniferous (Binary)	1	1 $\pm$ 0
Veg-Deciduous (Binary)	1	1 $\pm$ 0
Veg-GrassesFerns (Binary)	1	1 $\pm$ 0
Veg-Shrubs (Binary)	1	1 $\pm$ 0
Velocity-Avg (m/s)	0.53	0.51 $\pm$ 0.25
Velocity-Max (m/s)	0.99	0.75 $\pm$ 0.28
Width-Bankfull (m)	14.2	15.6 $\pm$ 12.8
Width-Wetted (m)	12.1	10.2 $\pm$ 7.0



## Habitat Description

Variable	Alx-01	Predicted Group Reference Mean $\pm$ SD
XSEC-VelMethod (Category (1-3))	1	2 $\pm$ 1
<b>Landcover</b>		
Reg-Ice (%)	0.00000	0.46949 $\pm$ 1.15785
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	1	6 $\pm$ 7
%Cobble (%)	51	61 $\pm$ 27
%Gravel (%)	2	1 $\pm$ 2
%Pebble (%)	45	31 $\pm$ 28
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	1	1 $\pm$ 3
D50 (cm)	6.65	79.45 $\pm$ 47.98
Dg (cm)	6.2	73.9 $\pm$ 48.0
Dominant-1st (Category(0-9))	6	6 $\pm$ 2
Dominant-2nd (Category(0-9))	5	6 $\pm$ 2
Embeddedness (Category(1-5))	5	4 $\pm$ 1
SurroundingMaterial (Category(0-9))	4	4 $\pm$ 2
<b>Topography</b>		
Reg-SlopeLT30% (%)	37.93000	27.92073 $\pm$ 14.83033
SlopeLT30% (%)	37.93000	27.74594 $\pm$ 10.84742
<b>Water Chemistry</b>		
General-Conductivity ( $\mu$ S/cm)	269.0000000	186.8500000 $\pm$ 84.0864011
General-DO (mg/L)	10.0000000	10.4922222 $\pm$ 0.8833463
General-pH (pH)	8.6	8.0 $\pm$ 0.6
General-TempAir (Degrees Celsius)	11.5	10.5 $\pm$ 4.2
General-TempWater (Degrees Celsius)	6.4000000	6.6716667 $\pm$ 2.0277755
General-Turbidity (NTU)	0.0000000	0.0000000 $\pm$ 0.0000000