

**Site Description**

<b>Study Name</b>	CBWQ-Upper Slocan
<b>Site</b>	NJSLV01
<b>Sampling Date</b>	Sep 28 2016
<b>Know Your Watershed Basin</b>	Slocan
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.95278 N, 117.35944 W
<b>Altitude</b>	1788
<b>Local Basin Name</b>	Silverton Cr
	Slocan
<b>Stream Order</b>	4



Figure 1. Location Map



Across Reach  
Aerial (No image found)



Down Stream  
 Field Sheet (No image found)  
 Miscellaneous (No image found)  
 Substrate (No image found)

**Cabin Assessment Results**

<b>Reference Model Summary</b>					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	March 21, 2017				
<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>	1.2%	1.5%	8.7%	72.3%	16.3%
<b>CABIN Assessment of NJSLV01 on Sep 28, 2016</b>	Mildly Divergent				

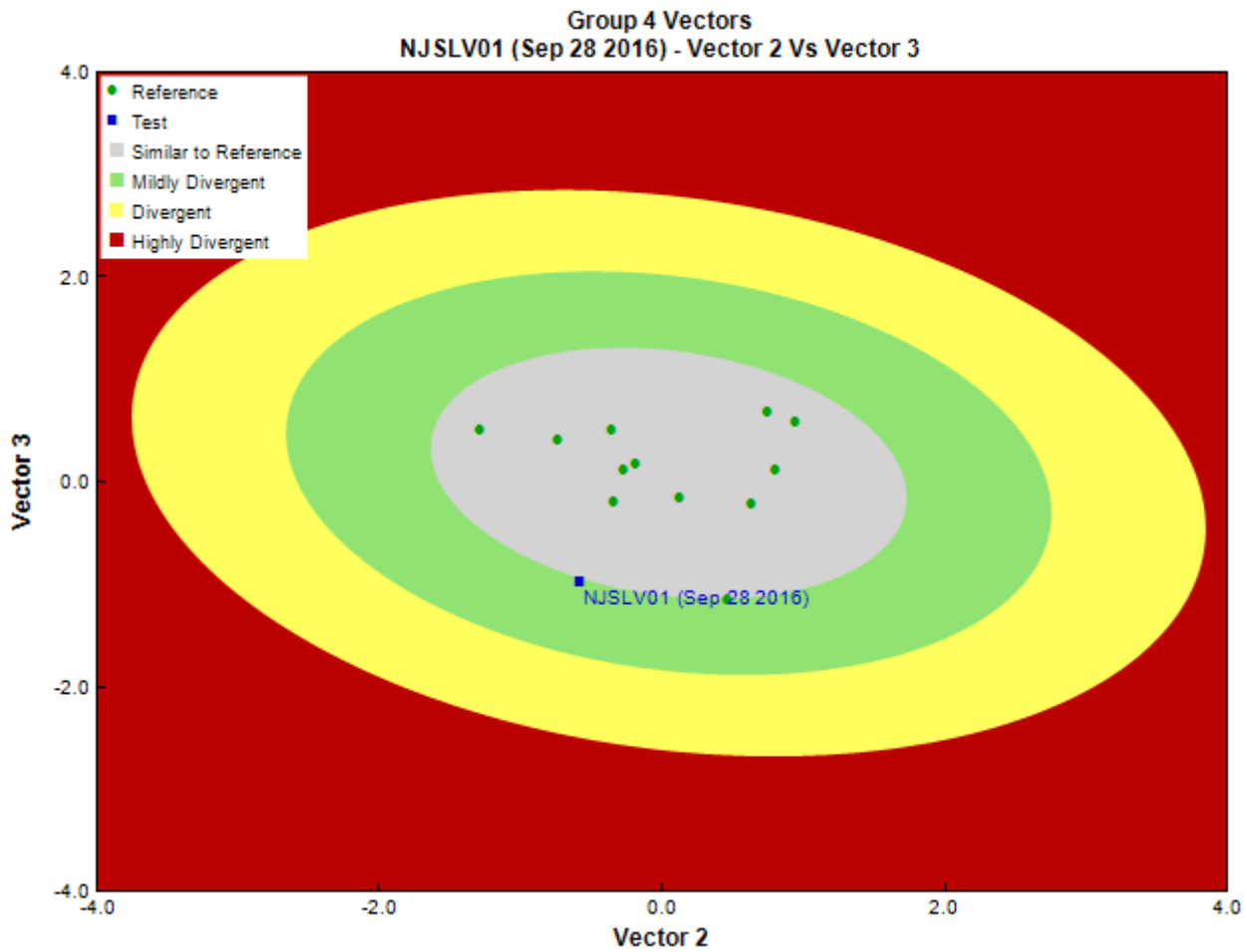


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**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>	October 09, 2016
	Marchant Box
<b>Sub-Sample Proportion</b>	36/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Enchytraeida	Enchytraeidae	1	2.8
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	1	2.8
	Insecta	Diptera	Chironomidae	71	197.2
			Empididae	1	2.8
			Psychodidae	3	8.3
			Simuliidae	1	2.8
			Tipulidae	7	19.4
		Ephemeroptera	Baetidae	56	155.6
			Ephemerellidae	18	50.0
			Heptageniidae	23	63.9
		Plecoptera		2	5.6
			Capniidae	2	5.6
			Leuctridae	2	5.6
			Nemouridae	15	41.6
			Perlidae	7	19.4

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlodidae	5	13.9
			Taeniopterygidae	13	36.1
		Trichoptera	Apataniidae	3	8.3
			Glossosomatidae	1	2.8
			Hydropsychidae	2	5.6
			Lepidostomatidae	9	25.0
			Philopotamidae	1	2.8
			Rhyacophilidae	5	13.9
			Uenoidae	93	258.3
			Total	342	950.1

## Metrics

Name	NJSLV01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.51	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	2.8	3.2 $\pm$ 0.3
Long-lived taxa	2.0	2.1 $\pm$ 1.0
Tolerant individuals (%)	--	0.8 $\pm$ 0.3
<b>Functional Measures</b>		
% Filterers	1.2	2.2 $\pm$ 1.8
% Gatherers	64.6	38.4 $\pm$ 12.4
% Predatores	27.2	19.0 $\pm$ 8.5
% Scrapers	55.6	63.2 $\pm$ 19.7
% Shredder	14.9	27.6 $\pm$ 15.2
No. Clinger Taxa	29.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
% Chironomidae	20.9	7.4 $\pm$ 6.4
% Coleoptera	0.0	1.5 $\pm$ 3.9
% Diptera + Non-insects	25.0	10.8 $\pm$ 7.6
% Ephemeroptera	28.5	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	57.7	40.6 $\pm$ 30.0
% EPT Individuals	75.0	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	48.2	57.9 $\pm$ 14.2
% of 5 dominant taxa	76.8	81.6 $\pm$ 7.9
% of dominant taxa	27.4	39.8 $\pm$ 14.9
% Plecoptera	12.9	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	1.8	27.0 $\pm$ 26.2
% Tricoptera	33.5	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.8	0.9 $\pm$ 0.1
Total Abundance	950.0	587.4 $\pm$ 299.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	0.0	0.4 $\pm$ 0.5
Diptera taxa	5.0	3.3 $\pm$ 1.0
Ephemeroptera taxa	3.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	708.3	526.0 $\pm$ 285.8
EPT taxa (no)	16.0	13.3 $\pm$ 2.7
Odonata taxa	--	0.0 $\pm$ 0.0
Pielou's Evenness	0.7	0.7 $\pm$ 0.1
Plecoptera taxa	6.0	6.3 $\pm$ 1.1
Shannon-Wiener Diversity	2.2	1.9 $\pm$ 0.4
Simpson's Diversity	0.8	0.8 $\pm$ 0.1
Simpson's Evenness	0.3	0.3 $\pm$ 0.1
Total No. of Taxa	23.0	19.3 $\pm$ 3.7
Trichoptera taxa	7.0	3.2 $\pm$ 1.4

### Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NJSLV01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.83
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.99
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.89
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.77
Perlodidae	78%	78%	89%	92%	81%	0.89
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.93

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.63
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	1.03
RIVPACS : Expected taxa P>0.70	11.28
RIVPACS : Observed taxa P>0.70	11.00
RIVPACS : O:E (p > 0.7)	0.98

### Habitat Description

Variable	NJSLV01	Predicted Group Reference Mean $\pm$ SD
<b>Channel</b>		
Depth-Avg (cm)	33.4	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	50.00	51.38 $\pm$ 29.42
Depth-Max (cm)	41.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	1	4 $\pm$ 1
Reach-Pools (Binary)	1	1 $\pm$ 0
Reach-Rapids (Binary)	1	0 $\pm$ 0
Reach-Riffles (Binary)	1	1 $\pm$ 0
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0160000	0.0546683 $\pm$ 0.0376269
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)	0.65	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.77	0.76 $\pm$ 0.36
Width-Bankfull (m)	13.5	13.4 $\pm$ 9.9
Width-Wetted (m)	9.9	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Landcover</b>		
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	19	9 $\pm$ 9
%Cobble (%)	55	51 $\pm$ 15
%Gravel (%)	4	3 $\pm$ 3
%Pebble (%)	19	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	3	0 $\pm$ 0
D50 (cm)	11.00	15.12 $\pm$ 14.26
Dg (cm)	9.3	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	7	7 $\pm$ 1
Embeddedness (Category(1-5))	4	5 $\pm$ 1

## Habitat Description

Variable	NJSLV01	Predicted Group Reference Mean $\pm$ SD
PeriphytonCoverage (Category(1-5))	3	1 $\pm$ 0
SurroundingMaterial (Category(0-9))	3	4 $\pm$ 1
<b>Topography</b>		
Reg-SlopeLT30% (%)	12.49000	18.88386 $\pm$ 9.29866
<b>Water Chemistry</b>		
Ag (mg/L)	0.0000100	0.0000050
Al (mg/L)	0.0104000	0.0049000
As (mg/L)	0.0004000	0.0002700
B (mg/L)	0.0250000	0.0500000
Ba (mg/L)	0.0129000	0.0682000
Be (mg/L)	0.0000500	0.0000100
Bi (mg/L)	0.0005000	0.0000050
Ca (mg/L)	19.8000000	21.1083333 $\pm$ 16.8005659
Cd (mg/L)	0.0002050	0.0000050
Chloride-Dissolved (mg/L)	1.6000000	0.9750000 $\pm$ 2.6309780
Co (mg/L)	0.0002500	0.0000100
CO3 (mg/L)	0.2500000	0.0000000 $\pm$ 0.0000000
Cr (mg/L)	0.0005000	0.0001000
Cu (mg/L)	0.0002500	0.0001000
Fe (mg/L)	0.0050000	0.0080000
General-Alkalinity (mg/L)	46.1000000	71.7000000 $\pm$ 53.9231440
General-DO (mg/L)	12.0000000	11.4175000 $\pm$ 0.7986708
General-Hardness (mg/L)	59.3000000	84.2750000 $\pm$ 70.6251066
General-pH (pH)	7.0	7.9 $\pm$ 0.4
General-SolidsTSS (mg/L)	2.0000000	0.8849836 $\pm$ 1.2378575
General-SpCond ( $\mu$ S/cm)	126.9000000	168.9833333 $\pm$ 123.7858182
General-TempAir (Degrees Celsius)	14.0	26.0
General-TempWater (Degrees Celsius)	8.0000000	7.3183333 $\pm$ 2.7240839
General-Turbidity (NTU)	0.8600000	0.2020000
HCO3 (mg/L)	56.2000000	0.0000000 $\pm$ 0.0000000
Hg (ng/L)	5.0000000	0.0000000 $\pm$ 0.0000000
K (mg/L)	1.3100000	0.6141667 $\pm$ 0.4056971
Li (mg/L)	0.0025000	0.0011000
Mg (mg/L)	2.3900000	7.6666667 $\pm$ 7.9748848
Mn (mg/L)	0.0005000	0.0006100
Mo (mg/L)	0.0012000	0.0006900
Na (mg/L)	1.7400000	1.5383333 $\pm$ 1.2751459
Ni (mg/L)	0.0005000	0.0003000
Nitrogen-NH3 (mg/L)	0.0370000	0.0024545 $\pm$ 0.0025045
Nitrogen-NO2 (mg/L)	0.0025000	0.0027500 $\pm$ 0.0062831
Nitrogen-NO2+NO3 (mg/L)	0.0480000	0.0690000
Nitrogen-NO3 (mg/L)	0.0480000	0.0546667 $\pm$ 0.0498148
Nitrogen-TN (mg/L)	0.1640000	0.0883333 $\pm$ 0.0521943
Pb (mg/L)	0.0002500	0.0000520
Phosphorus-OrthoP (mg/L)	0.0025000	0.0002727 $\pm$ 0.0004671
Phosphorus-TP (mg/L)	0.0191000	0.0045833 $\pm$ 0.0049992
S (mg/L)	4.8000000	5.0000000
Sb (mg/L)	0.0002500	0.0000700
Se (mg/L)	0.0006600	0.0001200
Si (mg/L)	4.0700000	3.1516667 $\pm$ 1.2277017
Sn (mg/L)	0.0025000	0.0000100
SO4 (mg/L)	13.0000000	17.2250000 $\pm$ 25.9966125
Sr (mg/L)	0.1360000	0.0443000
Ti (mg/L)	0.0025000	0.0005000
Tl (mg/L)	0.0000250	0.0000020
U (mg/L)	0.0006700	0.0011700
V (mg/L)	0.0025000	0.0002000
Zn (mg/L)	0.0150000	0.0010000
Zr (mg/L)	0.0002500	0.0000000 $\pm$ 0.0000000