

Site Description

Study Name	CBWQ-Upper Slocan
Site	NJSLV01
Sampling Date	Sep 12 2017
Know Your Watershed Basin	Slocan
Province / Territory	British Columbia
Terrestrial Ecological Classification	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
Coordinates (decimal degrees)	49.95278 N, 117.35944 W
Altitude	1788
Local Basin Name	Silverton Cr
	Slocan
Stream Order	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)



Up Stream

Cabin Assessment Results

Reference Model Summary					
Model	Columbia-Okanagan Preliminary March 2010				
Analysis Date	January 30, 2018				
Taxonomic Level	Family				
Predictive Model Variables	Depth-Avg Latitude Longitude Reg-Ice Reg-SlopeLT30%				
Reference Groups	1	2	3	4	5
Number of Reference Sites	9	43	17	12	33
Group Error Rate	22.2%	24.5%	22.2%	25.0%	32.4%
Overall Model Error Rate	26.4%				
Probability of Group Membership	0.7%	1.6%	8.9%	72.0%	16.8%
CABIN Assessment of NJSLV01 on Sep 12, 2017	Mildly Divergent				

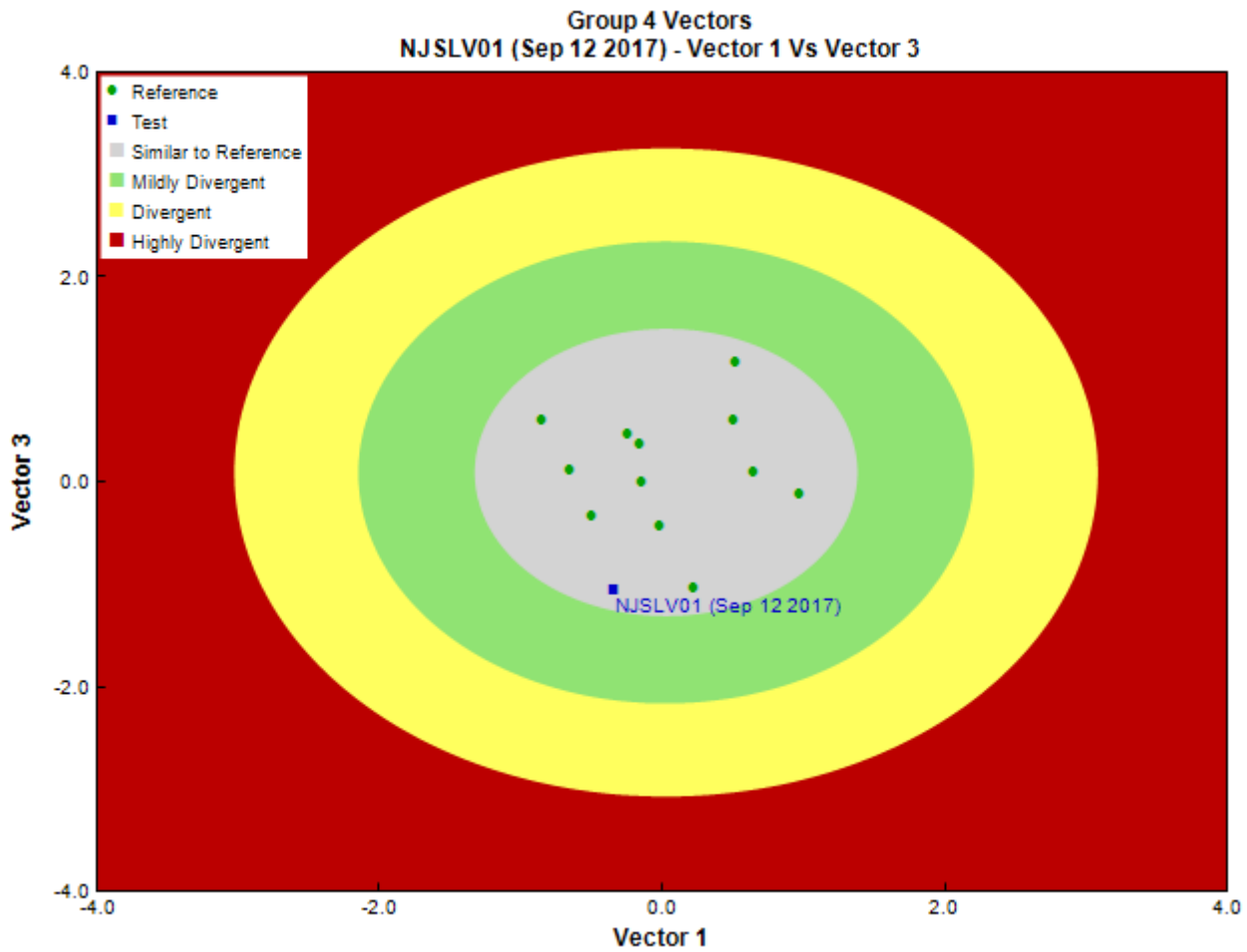


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Pina Viola, Consultant
Date Taxonomy Completed	December 10, 2017
	Marchant Box
Sub-Sample Proportion	20/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count		
Arthropoda	Arachnida	Sarcoptiformes		1	5.0		
		Trombidiformes	Hydryphantidae	1	5.0		
				Lebertiidae	1	5.0	
				Sperchontidae	2	10.0	
	Insecta	Coleoptera		Elmidae	1	5.0	
			Diptera	Chironomidae	93	465.0	
					Simuliidae	1	5.0
					Tipulidae	2	10.0
		Ephemeroptera		Ameletidae	2	10.0	
				Baetidae	126	630.0	
				Ephemerellidae	10	50.0	
				Heptageniidae	38	190.0	
			Plecoptera	Chloroperlidae	1	5.0	
			Nemouridae	10	50.0		
			Perlidae	6	30.0		

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlodidae	3	15.0
			Taeniopterygidae	18	90.0
		Trichoptera	Glossosomatidae	3	15.0
			Hydropsychidae	2	10.0
			Lepidostomatidae	1	5.0
			Rhyacophilidae	7	35.0
			Uenoidae	20	100.0
			Total	349	1,745.0

Metrics

Name	NJSLV01	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.59	0.4 \pm 0.1
Biotic Indices		
Hilsenhoff Family index (North-West)	3.9	3.2 \pm 0.3
Intolerant taxa	--	
Long-lived taxa	2.0	2.1 \pm 1.0
Tolerant individuals (%)	--	0.8 \pm 0.3
Functional Measures		
% Filterers	0.9	2.2 \pm 1.8
% Gatherers	45.0	38.4 \pm 12.4
% Predators	33.5	19.0 \pm 8.5
% Scrapers	59.6	63.2 \pm 19.7
% Shredder	9.2	27.6 \pm 15.2
No. Clinger Taxa	27.0	23.2 \pm 6.3
Number Of Individuals		
% Chironomidae	26.7	7.4 \pm 6.4
% Coleoptera	0.3	1.5 \pm 3.9
% Diptera + Non-insects	28.7	10.8 \pm 7.6
% Ephemeroptera	50.6	51.7 \pm 18.8
% Ephemeroptera that are Baetidae	71.6	40.6 \pm 30.0
% EPT Individuals	71.0	87.7 \pm 7.4
% Odonata	0.0	0.0 \pm 0.0
% of 2 dominant taxa	62.9	57.9 \pm 14.2
% of 5 dominant taxa	84.8	81.6 \pm 7.9
% of dominant taxa	36.2	39.8 \pm 14.9
% Plecoptera	10.9	31.4 \pm 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	6.1	27.0 \pm 26.2
% Tricoptera	9.5	4.5 \pm 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.7	0.9 \pm 0.1
Total Abundance	1745.0	587.4 \pm 299.1
Richness		
Chironomidae taxa (genus level only)	1.0	1.0 \pm 0.0
Coleoptera taxa	1.0	0.4 \pm 0.5
Diptera taxa	3.0	3.3 \pm 1.0
Ephemeroptera taxa	4.0	3.8 \pm 0.8
EPT Individuals (Sum)	1235.0	526.0 \pm 285.8
EPT taxa (no)	14.0	13.3 \pm 2.7
Odonata taxa	0.0	0.0 \pm 0.0
Pielou's Evenness	0.6	0.7 \pm 0.1
Plecoptera taxa	5.0	6.3 \pm 1.1
Shannon-Wiener Diversity	1.9	1.9 \pm 0.4
Simpson's Diversity	0.8	0.8 \pm 0.1
Simpson's Evenness	0.2	0.3 \pm 0.1
Total No. of Taxa	21.0	19.3 \pm 3.7
Trichoptera taxa	5.0	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	13.00
RIVPACS : O:E (p > 0.5)	0.95
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
Channel		
Depth-Avg (cm)	30.0	23.6 \pm 11.1
Depth-BankfullMinusWetted (cm)	60.00	51.38 \pm 29.42
Depth-Max (cm)	44.0	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)	0.63	0.48 \pm 0.22
Velocity-Max (m/s)	0.89	0.76 \pm 0.36
Width-Bankfull (m)	11.9	13.4 \pm 9.9
Width-Wetted (m)	9.7	8.5 \pm 5.8
XSEC-VelMethod (Category(1-3))	1	1 \pm 0
Landcover		
Reg-Ice (%)	0.00000	0.02487 \pm 0.06034
Substrate Data		
%Bedrock (%)	0	0 \pm 0
%Boulder (%)	17	9 \pm 9
%Cobble (%)	51	51 \pm 15
%Gravel (%)	2	3 \pm 3
%Pebble (%)	27	37 \pm 20
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	3	0 \pm 0
D50 (cm)	9.00	15.12 \pm 14.26
Dg (cm)	8.3	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))	2	1 \pm 0
SurroundingMaterial (Category(0-9))	3	4 \pm 1
Topography		
Reg-SlopeLT30% (%)	12.49000	18.88386 \pm 9.29866
Water Chemistry		
Ag (mg/L)	0.0000100	0.0000050
Al (mg/L)	0.0079000	0.0049000
As (mg/L)	0.0004500	0.0002700
B (mg/L)	0.0250000	0.0500000
Ba (mg/L)	0.0124000	0.0682000
Be (mg/L)	0.0000500	0.0000100
Bi (mg/L)	0.0005000	0.0000050
Ca (mg/L)	20.2000000	21.1083333 \pm 16.8005659
Cd (mg/L)	0.0002200	0.0000050
Chloride-Dissolved (mg/L)	0.5000000	0.9750000 \pm 2.6309780
Co (mg/L)	0.0001000	0.0000100
CO3 (mg/L)	0.5000000	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)	91.0000000	71.7000000 \pm 53.9231440
General-DO (mg/L)	9.0000000	11.4175000 \pm 0.7986708
General-pH (pH)	8.5	7.9 \pm 0.4
General-SolidsTSS (mg/L)	2.0000000	0.8849836 \pm 1.2378575
General-SpCond (μ S/cm)	141.5000000	168.9833333 \pm 123.7858182
General-TempAir (Degrees Celsius)	15.5	26.0
General-TempWater (Degrees Celsius)	9.9000000	7.3183333 \pm 2.7240839
General-Turbidity (NTU)	0.8300000	0.2020000
HCO3 (mg/L)	111.0000000	0.0000000 \pm 0.0000000
K (mg/L)	1.3900000	0.6141667 \pm 0.4056971
Li (mg/L)	0.0010000	0.0011000
Mg (mg/L)	2.4600000	7.6666667 \pm 7.9748848
Mn (mg/L)	0.0005000	0.0006100
Mo (mg/L)	0.0014000	0.0006900
Na (mg/L)	1.4900000	1.5383333 \pm 1.2751459
Ni (mg/L)	0.0005000	0.0003000
Nitrogen-NH3 (mg/L)	0.0100000	0.0024545 \pm 0.0025045
Nitrogen-NO2 (mg/L)	0.0025000	0.0027500 \pm 0.0062831
Nitrogen-NO2+NO3 (mg/L)	0.0420000	0.0690000
Nitrogen-NO3 (mg/L)	0.0420000	0.0546667 \pm 0.0498148
Nitrogen-TN (mg/L)	0.0910000	0.0883333 \pm 0.0521943
Pb (mg/L)	0.0002400	0.0000520
Phosphorus-OrthoP (mg/L)	0.0025000	0.0002727 \pm 0.0004671
Phosphorus-TP (mg/L)	0.0025000	0.0045833 \pm 0.0049992
S (mg/L)	4.9000000	5.0000000
Se (mg/L)	0.0007800	0.0001200
Si (mg/L)	4.1200000	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)	0.1420000	0.0443000
Ti (mg/L)	0.0025000	0.0005000
Tl (mg/L)	0.0000050	0.0000020
U (mg/L)	0.0007500	0.0011700
V (mg/L)	0.0025000	0.0002000
Zn (mg/L)	0.0141000	0.0010000
Zr (mg/L)	0.0000500	0.0000000 \pm 0.0000000