

Site Description

Study Name	CBWQ-Slocan
Site	NJLEM03
Sampling Date	Sep 28 2016
Know Your Watershed Basin	Slocan
Province / Territory	British Columbia
Terrestrial Ecological Classification	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
Coordinates (decimal degrees)	49.70649 N, 117.49236 W
Altitude	1778
Local Basin Name	Lemon Creek
	Slocan
Stream Order	4



Figure 1. Location Map

- Across Reach (No image found)
- Down Stream (No image found)
- Field Sheet (No image found)
- Miscellaneous (No image found)
- Substrate (No image found)
- Up Stream (No image found)

Cabin Assessment Results

Reference Model Summary					
Model	Columbia-Okanagan Preliminary March 2010				
Analysis Date	February 27, 2017				
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	0.6%	3.5%	7.7%	79.0%	9.3%
CABIN Assessment of NJLEM03 on Sep 28, 2016	Mildly Divergent				

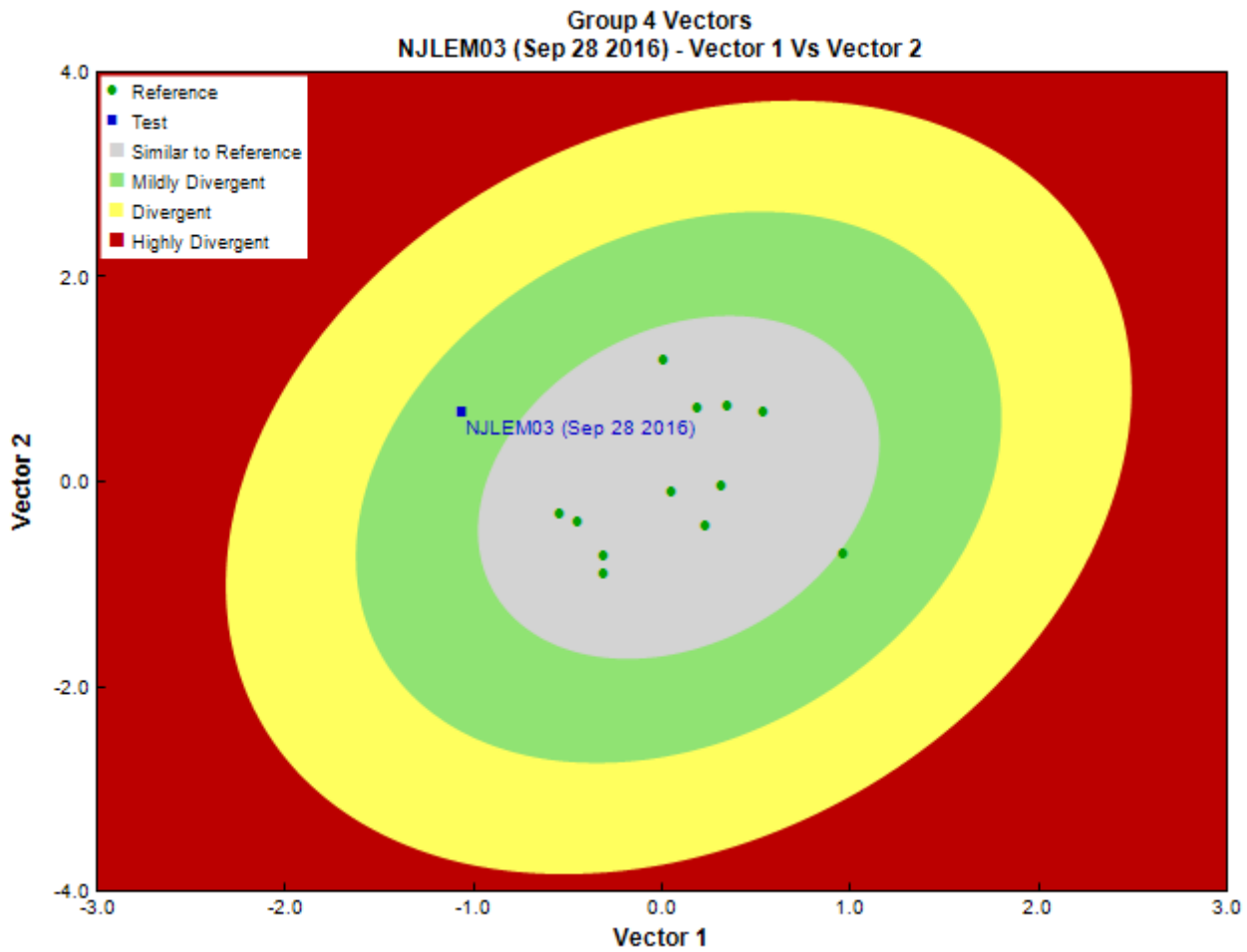


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	-
Date Taxonomy Completed	-
	-
Sub-Sample Proportion	32/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count			
Annelida	Oligochaeta	Enchytraeida	Enchytraeidae	14	43.8			
Arthropoda	Arachnida	Trombidiformes	Aturidae	1	3.1			
			Hygrobatidae	2	6.3			
			Lebertiidae	4	12.5			
			Sperchontidae	1	3.1			
			Torrenticolidae	1	3.1			
			Insecta	Diptera	Chironomidae	35	109.4	
					Empididae	22	68.7	
					Simuliidae	2	6.2	
					Tipulidae	1	3.1	
					Ephemeroptera	Ameletidae	1	3.1
						Baetidae	76	237.5
						Ephemerellidae	17	53.2
						Heptageniidae	23	71.9
						Leptophlebiidae	4	12.5

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
		Plecoptera	Chloroperlidae	1	3.1
			Nemouridae	10	31.2
			Perlidae	1	3.1
			Perlodidae	5	15.6
			Taeniopterygidae	1	3.1
		Trichoptera	Brachycentridae	1	3.1
			Hydropsychidae	81	253.1
			Hydroptilidae	4	12.5
			Lepidostomatidae	10	31.3
			Rhyacophilidae	12	37.5
			Total	330	1,031.1

Metrics

Name	NJLEM03	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.59	0.4 \pm 0.1
Biotic Indices		
Hilsenhoff Family index (North-West)	4.2	3.2 \pm 0.3
Intolerant taxa	--	
Long-lived taxa	1.0	2.1 \pm 1.0
Tolerant individuals (%)	--	0.8 \pm 0.3
Functional Measures		
% Filterers	25.5	2.2 \pm 1.8
% Gatherers	27.0	38.4 \pm 12.4
% Predatores	50.9	19.0 \pm 8.5
% Scrapers	32.4	63.2 \pm 19.7
% Shredder	7.0	27.6 \pm 15.2
No. Clinger Taxa	24.0	23.2 \pm 6.3
Number Of Individuals		
% Chironomidae	10.6	7.4 \pm 6.4
% Coleoptera	0.0	1.5 \pm 3.9
% Diptera + Non-insects	25.2	10.8 \pm 7.6
% Ephemeroptera	36.7	51.7 \pm 18.8
% Ephemeroptera that are Baetidae	62.8	40.6 \pm 30.0
% EPT Individuals	74.8	87.7 \pm 7.4
% Odonata	0.0	0.0 \pm 0.0
% of 2 dominant taxa	47.6	57.9 \pm 14.2
% of 5 dominant taxa	71.8	81.6 \pm 7.9
% of dominant taxa	24.5	39.8 \pm 14.9
% Plecoptera	5.5	31.4 \pm 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	75.0	27.0 \pm 26.2
% Tricoptera	32.7	4.5 \pm 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 \pm 0.1
Total Abundance	1031.3	587.4 \pm 299.1
Richness		
Chironomidae taxa (genus level only)	1.0	1.0 \pm 0.0
Coleoptera taxa	0.0	0.4 \pm 0.5
Diptera taxa	4.0	3.3 \pm 1.0
Ephemeroptera taxa	5.0	3.8 \pm 0.8
EPT Individuals (Sum)	771.9	526.0 \pm 285.8
EPT taxa (no)	15.0	13.3 \pm 2.7
Odonata taxa	0.0	0.0 \pm 0.0
Pielou's Evenness	0.7	0.7 \pm 0.1
Plecoptera taxa	5.0	6.3 \pm 1.1
Shannon-Wiener Diversity	2.4	1.9 \pm 0.4
Simpson's Diversity	0.9	0.8 \pm 0.1
Simpson's Evenness	0.3	0.3 \pm 0.1
Total No. of Taxa	25.0	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 NJLEM03
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.85
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%	0.90
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.85
Perlodidae	78%	78%	89%	92%	81%	0.90
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.91

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.79
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	1.02
RIVPACS : Expected taxa P>0.70	11.38
RIVPACS : Observed taxa P>0.70	11.00
RIVPACS : O:E (p > 0.7)	0.97

Habitat Description

Variable	NJLEM03	Predicted Group Reference Mean \pm SD
Channel		
Depth-Avg (cm)	31.8	23.6 \pm 11.1
Depth-Max (cm)	43.0	34.6 \pm 12.3
Discharge (m ³ /s)	0.770	0.000 \pm 0.000
Macrophyte (PercentRange)	1	0 \pm 0
Reach-%CanopyCoverage (PercentRange)	2.00	1.33 \pm 0.78
Reach-%Logging (PercentRange)	0	0 \pm 0
Reach-DomStreamsideVeg (Category (1-4))	4	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)	2.340000	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)	0.74	0.48 \pm 0.22
Velocity-Max (m/s)	1.33	0.76 \pm 0.36
Width-Bankfull (m)	56.0	13.4 \pm 9.9
Width-Wetted (m)	12.6	8.5 \pm 5.8
XSEC-VelMethod (Category (1-3))	1	1 \pm 0
Landcover		
Reg-Ice (%)	0.0000	0.02487 \pm 0.06034
Substrate Data		
%Bedrock (%)	0	0 \pm 0
%Boulder (%)	10	9 \pm 9
%Cobble (%)	66	51 \pm 15
%Gravel (%)	0	3 \pm 3
%Pebble (%)	24	37 \pm 20
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	0 \pm 0
D50 (cm)	11.00	15.12 \pm 14.26
Dg (cm)	10.2	8.2 \pm 2.8
Dominant-1st (Category(0-9))	6	7 \pm 1
Dominant-2nd (Category(0-9))	7	7 \pm 1

Habitat Description

Variable	NJLEM03	Predicted Group Reference Mean \pm SD
Embeddedness (Category(1-5))	4	5 \pm 1
PeriphytonCoverage (Category(1-5))	2	1 \pm 0
SurroundingMaterial (Category(0-9))	6	4 \pm 1
Topography		
Reg-SlopeLT30% (%)	15.28600	18.88386 \pm 9.29866
Water Chemistry		
Ag (mg/L)	0.0100000	0.0000050
Al (mg/L)	6.8000000	0.0049000
As (mg/L)	0.0050000	0.0002700
B (mg/L)	50.0000000	0.0500000
Ba (mg/L)	10.0000000	0.0682000
Be (mg/L)	0.0500000	0.0000100
Bi (mg/L)	0.5000000	0.0000050
Ca (mg/L)	12.7000000	21.1083333 \pm 16.8005659
Cd (mg/L)	0.0120000	0.0000050
Chloride-Dissolved (mg/L)	1.7000000	0.9750000 \pm 2.6309780
Co (mg/L)	0.2500000	0.0000100
CO3 (mg/L)	0.2500000	0.0000000 \pm 0.0000000
Cr (6) (μ g/L)	0.5000000	0.0000000 \pm 0.0000000
Cu (mg/L)	0.2500000	0.0001000
Fe (mg/L)	5.0000000	0.0080000
General-Alkalinity (mg/L)	38.3000000	71.7000000 \pm 53.9231440
General-Conductivity (μ S/cm)	76.4000000	121.8083333 \pm 87.6800844
General-DO (mg/L)	11.0000000	11.4175000 \pm 0.7986708
General-Hardness (mg/L)	36.9000000	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-TempAir (Degrees Celsius)	12.5	26.0
General-TempWater (Degrees Celsius)	8.0000000	7.3183333 \pm 2.7240839
General-Turbidity (NTU)	0.2000000	0.2020000
HCO3 (mg/L)	46.8000000	0.0000000 \pm 0.0000000
Hg (ng/L)	0.0050000	0.0000000 \pm 0.0000000
K (mg/L)	0.8130000	0.6141667 \pm 0.4056971
Li (mg/L)	2.5000000	0.0011000
Mg (mg/L)	1.2500000	7.6666667 \pm 7.9748848
Mn (mg/L)	0.5000000	0.0006100
Mo (mg/L)	2.0000000	0.0006900
Na (mg/L)	1.4400000	1.5383333 \pm 1.2751459
Ni (mg/L)	0.5000000	0.0003000
Nitrogen-NO2 (mg/L)	0.0050000	0.0027500 \pm 0.0062831
Nitrogen-NO3 (mg/L)	0.0200000	0.0546667 \pm 0.0498148
Pb (mg/L)	0.1000000	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)	1.5000000	5.0000000
Sb (mg/L)	0.2500000	0.0000700
Se (mg/L)	0.0500000	0.0001200
Si (mg/L)	3680.0000000	3.1516667 \pm 1.2277017
Sn (mg/L)	2.5000000	0.0000100
SO4 (mg/L)	2.2000000	17.2250000 \pm 25.9966125
Sr (mg/L)	98.9000000	0.0443000
Tl (mg/L)	0.0250000	0.0000020
U (mg/L)	1.9700000	0.0011700
V (mg/L)	2.5000000	0.0002000
Zn (mg/L)	2.5000000	0.0010000
Zr (mg/L)	0.2500000	0.0000000 \pm 0.0000000