

Site Description

Study Name	CBWQ-Slocan
Site	NJSLO02
Sampling Date	Oct 25 2013
Know Your Watershed Basin	Slocan
Province / Territory	British Columbia
Terrestrial Ecological Classification	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
Coordinates (decimal degrees)	49.76667 N, 117.48333 W
Altitude	2460
Local Basin Name	Slocan
	Slocan
Stream Order	5



Figure 1. Location Map

- Across Reach (No image found)
- Aerial (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	September 05, 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	20.2%	3.5%	7.9%	61.8%	6.5%	
CABIN Assessment of NJSLO02 on Oct 25, 2013	Divergent					

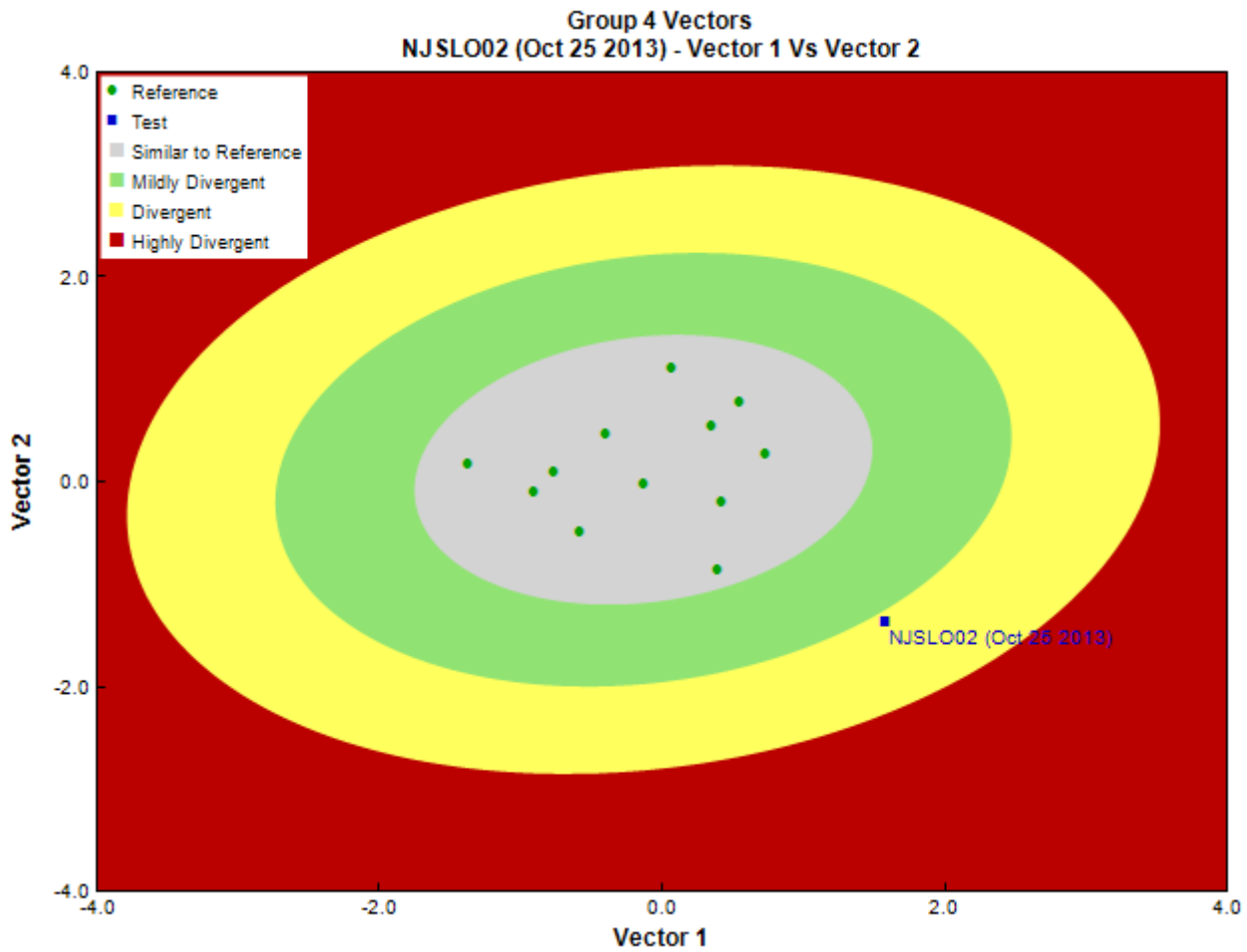


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Pina Viola, Consultant
Date Taxonomy Completed	March 05, 2014
	Marchant Box
Sub-Sample Proportion	26/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count		
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	1	3.8		
			Sperchontidae	2	7.7		
			Torrenticolidae	2	7.7		
	Insecta	Coleoptera		Elmidae	41	157.6	
				Diptera	52	200.0	
				Empididae	5	19.2	
				Tipulidae	7	26.9	
				Ephemeroptera	134	515.3	
				Trichoptera	Ephemerellidae	1	3.8
					Glossosomatidae	5	19.2
					Hydropsychidae	23	88.4
					Hydroptilidae	19	73.0
		Cnidaria	Hydrozoa	Anthoathecatae	Leptoceridae	18	69.1
Hydridae	5				19.2		
Mollusca	Bivalvia	Veneroidea	Pisidiidae	8	30.8		

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
	Gastropoda	Basommatophora	Physidae	1	3.8
			Planorbidae	1	3.8
			Total	325	1,249.3

Metrics

Name	NJSLO02	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.93	0.4 \pm 0.1
Biotic Indices		
Hilsenhoff Family index (North-West)	3.0	3.2 \pm 0.3
Intolerant taxa	--	
Long-lived taxa	3.0	2.1 \pm 1.0
Tolerant individuals (%)	0.6	0.8 \pm 0.3
Functional Measures		
% Filterers	7.1	2.2 \pm 1.8
% Gatherers	85.8	38.4 \pm 12.4
% Predatores	27.7	19.0 \pm 8.5
% Scrapers	20.6	63.2 \pm 19.7
% Shredder	20.3	27.6 \pm 15.2
No. Clinger Taxa	14.0	23.2 \pm 6.3
Number Of Individuals		
% Chironomidae	16.1	7.4 \pm 6.4
% Coleoptera	12.7	1.5 \pm 3.9
% Diptera + Non-insects	25.9	10.8 \pm 7.6
% Ephemeroptera	41.4	51.7 \pm 18.8
% Ephemeroptera that are Baetidae	0.0	40.6 \pm 30.0
% EPT Individuals	61.4	87.7 \pm 7.4
% Odonata	0.0	0.0 \pm 0.0
% of 2 dominant taxa	57.4	57.9 \pm 14.2
% of 5 dominant taxa	83.0	81.6 \pm 7.9
% of dominant taxa	41.4	39.8 \pm 14.9
% Plecoptera	0.0	31.4 \pm 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	35.4	27.0 \pm 26.2
% Trichoptera	20.1	4.5 \pm 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.8	0.9 \pm 0.1
Total Abundance	1249.9	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	1.0	3.8 \pm 0.8
EPT Individuals (Sum)	765.3	526.0 \pm 285.8
EPT taxa (no)	5.0	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	0.0	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	0.3	0.3 \pm 0.1
Total No. of Taxa	16.0	19.3 \pm 3.7
Trichoptera taxa	4.0	3.2 \pm 1.4

Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NJSLO02
	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%	1.00
Chloroperlidae	78%	88%	94%	100%	100%	0.95
Ephemerelellidae	78%	100%	100%	100%	100%	0.96

Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NJSLO02
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.74
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.87
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.91

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	14.32
RIVPACS : Observed taxa P>0.50	6.00
RIVPACS : O:E (p > 0.5)	0.42
RIVPACS : Expected taxa P>0.70	10.24
RIVPACS : Observed taxa P>0.70	3.00
RIVPACS : O:E (p > 0.7)	0.29

Habitat Description

Variable	NJSLO02	Predicted Group Reference Mean \pm SD
Bedrock Geology		
Alluvium (%)	0.00000	0.00000 \pm 0.00000
Intrusive (%)	46.09158	11.07346 \pm 28.63466
Metamorphic (%)	19.90524	17.96649 \pm 35.53463
Sedimentary (%)	32.38783	70.96005 \pm 44.90394
Ultramafic (%)	0.00000	0.00000 \pm 0.00000
Volcanic (%)	1.61535	0.00000 \pm 0.00000
Channel		
Depth-Avg (cm)	52.2	23.6 \pm 11.1
Depth-BankfullMinusWetted (cm)	176.50	51.38 \pm 29.42
Depth-Max (cm)	58.0	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))	4	4 \pm 1
Reach-Pools (Binary)	0	1 \pm 0
Reach-Rapids (Binary)	0	0 \pm 0
Reach-Riffles (Binary)	0	1 \pm 0
Reach-StraightRun (Binary)	1	1 \pm 1
Slope (m/m)	0.2350000	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)	0.72	0.48 \pm 0.22
Velocity-Max (m/s)	0.89	0.76 \pm 0.36
Width-Bankfull (m)	65.0	13.4 \pm 9.9
Width-Wetted (m)	59.0	8.5 \pm 5.8
XSEC-VelMethod (Category (1-3))	1	1 \pm 0
Climate		
Precip01_JAN (mm)	140.23333	104.85000 \pm 26.28129
Precip02_FEB (mm)	113.93333	83.66667 \pm 27.10278
Precip03_MAR (mm)	101.70000	77.23611 \pm 27.15950
Precip04_APR (mm)	140.23333	104.85000 \pm 26.28129
Precip05_MAY (mm)	80.73333	71.65833 \pm 17.81753
Precip06_JUN (mm)	92.06667	78.56667 \pm 15.58521
Precip07_JUL (mm)	75.93333	64.39167 \pm 10.41611
Precip08_AUG (mm)	72.90000	60.53056 \pm 10.43373
Precip09_SEP (mm)	69.56667	56.91944 \pm 10.91783
Precip10_OCT (mm)	86.90000	65.08056 \pm 14.41229
Precip11_NOV (mm)	137.40000	105.93889 \pm 25.04104
Precip12_DEC (mm)	153.70000	116.84444 \pm 29.80954
PrecipTotal_ANNUAL (mm)	1205.23333	952.64722 \pm 226.04690

Habitat Description

Variable	NJSLO02	Predicted Group Reference Mean \pm SD
Temp01_JANMax (Degrees Celsius)	-4.90000	-4.39167 \pm 2.51268
Temp01_JANmin (Degrees Celsius)	-10.90000	-11.40833 \pm 3.53951
Temp02_FEBmax (Degrees Celsius)	-2.13333	-1.70000 \pm 2.12945
Temp02_FEBmin (Degrees Celsius)	-9.00000	-9.17500 \pm 3.33361
Temp03_MARmax (Degrees Celsius)	1.23333	2.50556 \pm 2.87525
Temp03_MARmin (Degrees Celsius)	-6.40000	-6.14167 \pm 2.98556
Temp04_APRmax (Degrees Celsius)	5.63333	7.12222 \pm 3.48771
Temp04_APRmin (Degrees Celsius)	-2.96667	-2.71667 \pm 2.22785
Temp05_MAYmax (Degrees Celsius)	10.56667	12.03889 \pm 3.55434
Temp05_MAYmin (Degrees Celsius)	0.60000	1.04722 \pm 2.08663
Temp06_JUNMax (Degrees Celsius)	14.26667	15.72500 \pm 3.40030
Temp06_JUNMin (Degrees Celsius)	3.63333	4.00278 \pm 2.41085
Temp07_JULmax (Degrees Celsius)	18.06667	19.56111 \pm 3.47275
Temp07_JULmin (Degrees Celsius)	6.03333	6.35833 \pm 2.28332
Temp08_AUGmax (Degrees Celsius)	18.00000	19.52222 \pm 3.51100
Temp08_AUGmin (Degrees Celsius)	5.83333	6.19167 \pm 2.34422
Temp09_SEPmax (Degrees Celsius)	12.80000	14.04444 \pm 3.03456
Temp09_SEPmin (Degrees Celsius)	1.90000	2.04722 \pm 2.37208
Temp10_OCTmax (Degrees Celsius)	5.50000	6.88889 \pm 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.46667	-1.46111 \pm 1.64316
Temp11_NOVmax (Degrees Celsius)	-1.60000	-0.79722 \pm 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.80000	-6.68056 \pm 2.97163
Temp12_DECmax (Degrees Celsius)	-5.16667	-4.66389 \pm 2.69757
Temp12_DECmin (Degrees Celsius)	-10.56667	-10.65833 \pm 3.71739
TempANNUALmax (Degrees Celsius)	5.76667	6.96389 \pm 3.06157
TempANNUALmean (Degrees Celsius)	1.30000	2.25278 \pm 2.66574
TempANNUALmin (Degrees Celsius)	-2.16667	-2.18056 \pm 2.41152
Hydrology		
Drainage-Area (km ²)	1831.58153	124.42081 \pm 200.99192
Perimeter (Km)	383.42203	64.71360 \pm 56.15436
StreamDensity (m/km ²)	2341.92206	2246.06682 \pm 604.89962
StreamLength (m)	4289421.19	302226.63 \pm 500983.26
Landcover		
Natl-AnnCrops (%)	0.00000	0.00000 \pm 0.00000
Natl-Barren (%)	0.00000	0.00000 \pm 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 \pm 0.00000
Natl-BroadleafOpen (%)	3.29522	1.19263 \pm 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 \pm 0.00000
Natl-Coniferous (%)	0.00000	0.00000 \pm 0.00000
Natl-ConiferousDense (%)	0.36107	0.64845 \pm 0.37668
Natl-ConiferousOpen (%)	48.11508	54.62780 \pm 18.30692
Natl-ConiferousSparse (%)	1.20271	0.94121 \pm 1.53621
Natl-Deciduous (%)	0.00000	0.00000 \pm 0.00000
Natl-Developed (%)	0.09726	0.00000 \pm 0.00000
Natl-ExposedLand (%)	17.93118	13.20054 \pm 11.11850
Natl-Grassland (%)	1.55726	1.87556 \pm 1.68508
Natl-Herb (%)	6.99990	5.75738 \pm 2.89836
Natl-MixedForest (%)	0.00000	0.00000 \pm 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 \pm 0.00000
Natl-MixedwoodOpen (%)	0.10073	0.04060 \pm 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 \pm 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 \pm 0.00000
Natl-Rock/Rubble (%)	0.55735	1.56403 \pm 2.75979
Natl-Shrubland (%)	0.00000	0.00000 \pm 0.00000
Natl-ShrubLow (%)	1.13178	4.98298 \pm 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 \pm 0.00000
Natl-SnowIce (%)	0.28557	0.08491 \pm 0.15475
Natl-Water (%)	4.56848	0.22916 \pm 0.36834
Natl-Wetland (%)	0.00000	0.00000 \pm 0.00000
Natl-WetlandHerb (%)	0.03308	0.12918 \pm 0.35193
Natl-WetlandShrub (%)	0.00798	0.00000 \pm 0.00000
Natl-WetlandTreed (%)	0.00132	0.00000 \pm 0.00000

Habitat Description

Variable	NJSLO02	Predicted Group Reference Mean \pm SD
Reg-Ice (%)	0.11972	0.02487 \pm 0.06034
Substrate Data		
%Bedrock (%)	0	0 \pm 0
%Boulder (%)	0	9 \pm 9
%Cobble (%)	68	51 \pm 15
%Gravel (%)	0	3 \pm 3
%Pebble (%)	32	37 \pm 20
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	0 \pm 0
D50 (cm)	8.00	15.12 \pm 14.26
Dg (cm)	7.5	8.2 \pm 2.8
Dominant-1st (Category(0-9))	6	7 \pm 1
Dominant-2nd (Category(0-9))	5	7 \pm 1
Embeddedness (Category(1-5))	4	5 \pm 1
PeriphytonCoverage (Category(1-5))	3	1 \pm 0
SurroundingMaterial (Category(0-9))	3	4 \pm 1
Topography		
ElevationMax (m)	3015.00000	2634.66667 \pm 309.54023
ElevationMin (m)	527.00000	913.41667 \pm 271.25180
ElevationStdev (m)	503.68703	349.02363 \pm 92.12445
Reg-SlopeLT30% (%)	21.69000	18.88386 \pm 9.29866
Slope30-50% (%)	26.50074	29.00215 \pm 6.33837
Slope50-60% (%)	14.01621	13.91808 \pm 1.91315
SlopeAvg (%)	51.10791	52.79851 \pm 8.68755
SlopeGT60% (%)	35.68147	35.47207 \pm 13.39684
SlopeLT30% (%)	23.80159	21.60770 \pm 8.54172
SlopeMax (%)	495.07895	298.94390 \pm 146.30679
SlopeMin (%)	0.00000	0.19777 \pm 0.29213
SlopeStdev (%)	28.75933	26.57529 \pm 4.62351
Water Chemistry		
General-DO (mg/L)	11.0000000	11.4175000 \pm 0.7986708
General-pH (pH)	6.2	7.9 \pm 0.4
General-SpCond (μ S/cm)	70.5000000	168.9833333 \pm 123.7858182
General-TempAir (Degrees Celsius)	8.0	26.0
General-TempWater (Degrees Celsius)	10.5000000	7.3183333 \pm 2.7240839
General-Turbidity (NTU)	0.2500000	0.2020000