

Site Description

Study Name	CBWQ-Slocan
Site	NJBON01
Sampling Date	Sep 10 2014
Know Your Watershed Basin	Slocan
Province / Territory	British Columbia
Terrestrial Ecological Classification	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
Coordinates (decimal degrees)	50.10000 N, 117.48333 W
Altitude	1814
Local Basin Name	Slocan River
	Slocan
Stream Order	4



Figure 1. Location Map

Across Reach
Aerial (No image found)



Down Stream

Michelle
Field Crew: Sharon Borat Basic Site Code: BSH007A
Sampling Date: 10/03/2014
 Occupational Health & Safety: Site Inspection Sheet completed
PRIMARY SITE DATA
Stream Study Name: SLOCAN RIVER, Local Basin Name: COLUMBIA BASIN
Reach/Stream Name: SLOAN CREEK, Reach Order: (map scale 1:50,000) Spawning habitat!!
Select one: Test Site Reference Site
Geographical Description/Notes
Surrounding Land Use (check those present) Information Source
 Forest Pasture Agriculture Residential Other
 Logging Mining Commercial/Industrial
Digitized Surrounding Land Use (check one) Information Source
 Forest Pasture Agriculture Residential Other
 Logging Mining Commercial/Industrial
Location Data
Latitude: 52° 52' 00" N Longitude: 121° 02' 00" W
Elevation: 500 feet or less GPS Datum: NAD83
Site Location Map Drawing

Field Sheet

Miscellaneous (No image found)



Substrate



Up Stream

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	0.2%	11.4%	17.5%	53.1%	17.8%
CABIN Assessment of NJBON01 on Sep 10, 2014	Similar to Reference				

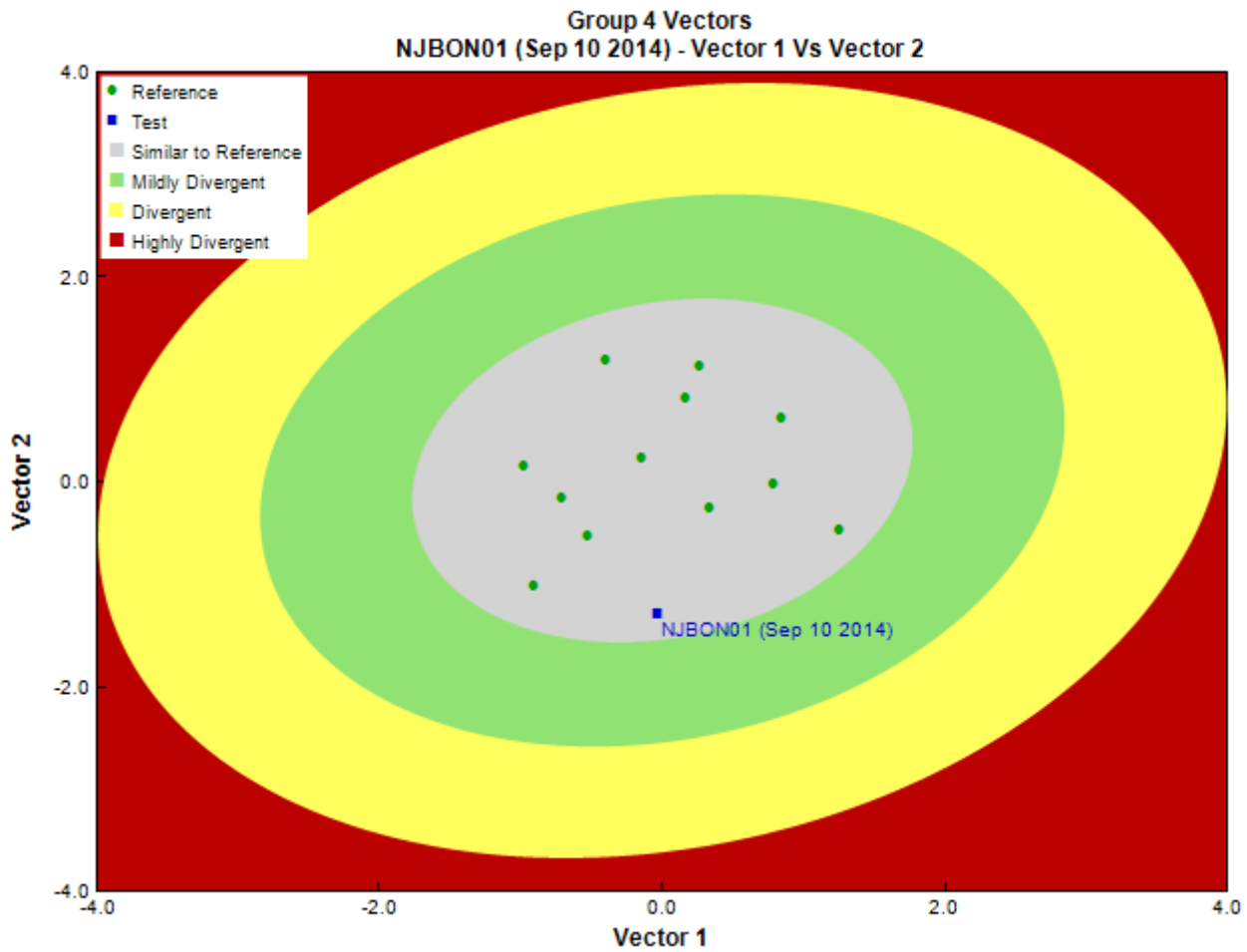


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Pina Viola, Consultant
Date Taxonomy Completed	January 21, 2015
	Marchant Box
Sub-Sample Proportion	24/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Enchytraeida	Enchytraeidae	2	8.3
Arthropoda	Arachnida	Sarcoptiformes		1	4.2
		Trombidiformes	Sperchontidae	3	12.5
	Insecta	Coleoptera	Elmidae	10	41.6
		Diptera	Ceratopogonidae	1	4.2
			Chironomidae	22	91.7
			Empididae	1	4.2
			Psychodidae	1	4.2
			Simuliidae	1	4.2
			Tipulidae	11	45.8
		Ephemeroptera	Ameletidae	1	4.2
			Baetidae	86	358.3
			Ephemerellidae	6	25.0
			Heptageniidae	25	104.2
		Plecoptera	Capniidae	1	4.2

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Chloroperlidae	3	12.5
			Nemouridae	8	33.4
			Perlidae	2	8.3
			Taeniopterygidae	1	4.2
		Trichoptera		1	4.2
			Brachycentridae	2	8.3
			Glossosomatidae	124	516.7
			Hydropsychidae	4	16.6
			Philopotamidae	4	16.7
			Rhyacophilidae	7	29.2
			Total	328	1,366.9

Metrics

Name	NJBON01	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.61	0.4 \pm 0.1
Biotic Indices		
Hilsenhoff Family index (North-West)	2.4	3.2 \pm 0.3
Intolerant taxa	--	
Long-lived taxa	4.0	2.1 \pm 1.0
Tolerant individuals (%)	--	0.8 \pm 0.3
Functional Measures		
% Filterers	3.4	2.2 \pm 1.8
% Gatherers	20.7	38.4 \pm 12.4
% Predatores	13.4	19.0 \pm 8.5
% Scrapers	76.5	63.2 \pm 19.7
% Shredder	10.1	27.6 \pm 15.2
No. Clinger Taxa	24.0	23.2 \pm 6.3
Number Of Individuals		
% Chironomidae	6.7	7.4 \pm 6.4
% Coleoptera	3.1	1.5 \pm 3.9
% Diptera + Non-insects	12.9	10.8 \pm 7.6
% Ephemeroptera	36.2	51.7 \pm 18.8
% Ephemeroptera that are Baetidae	72.9	40.6 \pm 30.0
% EPT Individuals	84.1	87.7 \pm 7.4
% Odonata	0.0	0.0 \pm 0.0
% of 2 dominant taxa	64.4	57.9 \pm 14.2
% of 5 dominant taxa	82.2	81.6 \pm 7.9
% of dominant taxa	38.0	39.8 \pm 14.9
% Plecoptera	4.6	31.4 \pm 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	2.8	27.0 \pm 26.2
% Tricoptera	43.3	4.5 \pm 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 \pm 0.1
Total Abundance	1366.5	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	6.0	3.3 \pm 1.0
Ephemeroptera taxa	4.0	3.8 \pm 0.8
EPT Individuals (Sum)	1141.6	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	2.0	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	23.0	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 NJBON01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.76
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.88
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.88
Rhyacophilidae	100%	92%	100%	100%	95%	0.98
Taeniopterygidae	89%	49%	100%	92%	97%	0.89

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	12.79
RIVPACS : Observed taxa P>0.50	13.00
RIVPACS : O:E (p > 0.5)	1.02
RIVPACS : Expected taxa P>0.70	10.35
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	0.97

Habitat Description

Variable	NJBON01	Predicted Group Reference Mean \pm SD
Channel		
Depth-Avg (cm)	18.5	23.6 \pm 11.1
Depth-BankfullMinusWetted (cm)	68.00	51.38 \pm 29.42
Depth-Max (cm)	38.0	34.6 \pm 12.3
Macrophyte (PercentRange)	1	0 \pm 0
Reach-%CanopyCoverage (PercentRange)	3.00	1.33 \pm 0.78
Reach-DomStreamsideVeg (Category (1-4))	2	4 \pm 1
Reach-Pools (Binary)	1	1 \pm 0
Reach-Rapids (Binary)	0	0 \pm 0
Reach-Riffles (Binary)	1	1 \pm 0
Reach-StraightRun (Binary)	1	1 \pm 1
Slope (m/m)	0.0960000	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)	0.43	0.48 \pm 0.22
Velocity-Max (m/s)	0.77	0.76 \pm 0.36
Width-Bankfull (m)	12.0	13.4 \pm 9.9
Width-Wetted (m)	10.0	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 (%)	2	9 \pm 9
%Cobble (%)	96	51 \pm 15
%Gravel (%)	0	3 \pm 3
%Pebble (%)	2	37 \pm 20
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	0 \pm 0
D50 (cm)	13.00	15.12 \pm 14.26
Dg (cm)	13.2	8.2 \pm 2.8
Dominant-1st (Category(0-9))	7	7 \pm 1
Dominant-2nd (Category(0-9))	6	7 \pm 1
Embeddedness (Category(1-5))	5	5 \pm 1
PeriphytonCoverage (Category(1-5))	2	1 \pm 0

Habitat Description

Variable	NJBON01	Predicted Group Reference Mean \pm SD
SurroundingMaterial (Category(0-9))	2	4 \pm 1
Topography		
Reg-SlopeLT30% (%)	28.34000	18.88386 \pm 9.29866
Water Chemistry		
CO3 (mg/L)	0.2500000	0.0000000 \pm 0.0000000
General-Alkalinity (mg/L)	65.4000000	71.7000000 \pm 53.9231440
General-Conductivity (μ S/cm)	15.0000000	121.8083333 \pm 87.6800844
General-DO (mg/L)	12.0000000	11.4175000 \pm 0.7986708
General-TempAir (Degrees Celsius)	12.0	26.0
General-TempWater (Degrees Celsius)	7.0000000	7.3183333 \pm 2.7240839
HCO3 (mg/L)	79.7000000	0.0000000 \pm 0.0000000
Nitrogen-NO2 (mg/L)	0.0025000	0.0027500 \pm 0.0062831
Nitrogen-NO2+NO3 (mg/L)	0.0250000	0.0690000
Nitrogen-NO3 (mg/L)	0.0250000	0.0546667 \pm 0.0498148
Phosphorus-OrthoP (mg/L)	0.0025000	0.0002727 \pm 0.0004671
Phosphorus-TP (mg/L)	0.0025000	0.0045833 \pm 0.0049992