

Site Description

Study Name	CBWQ-Central Kootenay
Site	NGJOS01
Sampling Date	Sep 26 2012
Know Your Watershed Basin	Central Kootenay
Province / Territory	British Columbia
Terrestrial Ecological Classification	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
Coordinates (decimal degrees)	49.45167 N, 115.68667 W
Altitude	3661
Local Basin Name	Joseph Creek
	St. Mary River
Stream Order	3



Figure 1. Location Map

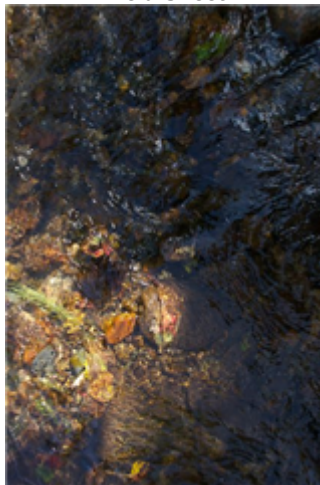
Across Reach
Aerial (No image found)



Down Stream



Field Sheet



Miscellaneous



Substrate



Up Stream

Cabin Assessment Results

Reference Model Summary					
Model	Columbia-Okanagan Preliminary March 2010				
Analysis Date	July 29, 2013				
Taxonomic Level	Family				
Predictive Model Variables	Depth-Avg Latitude Longitude Reg-Ice 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	0.0%	9.5%	76.3%	13.3%	0.8%
CABIN Assessment of NGJOS01 on Sep 26, 2012	Similar to Reference				

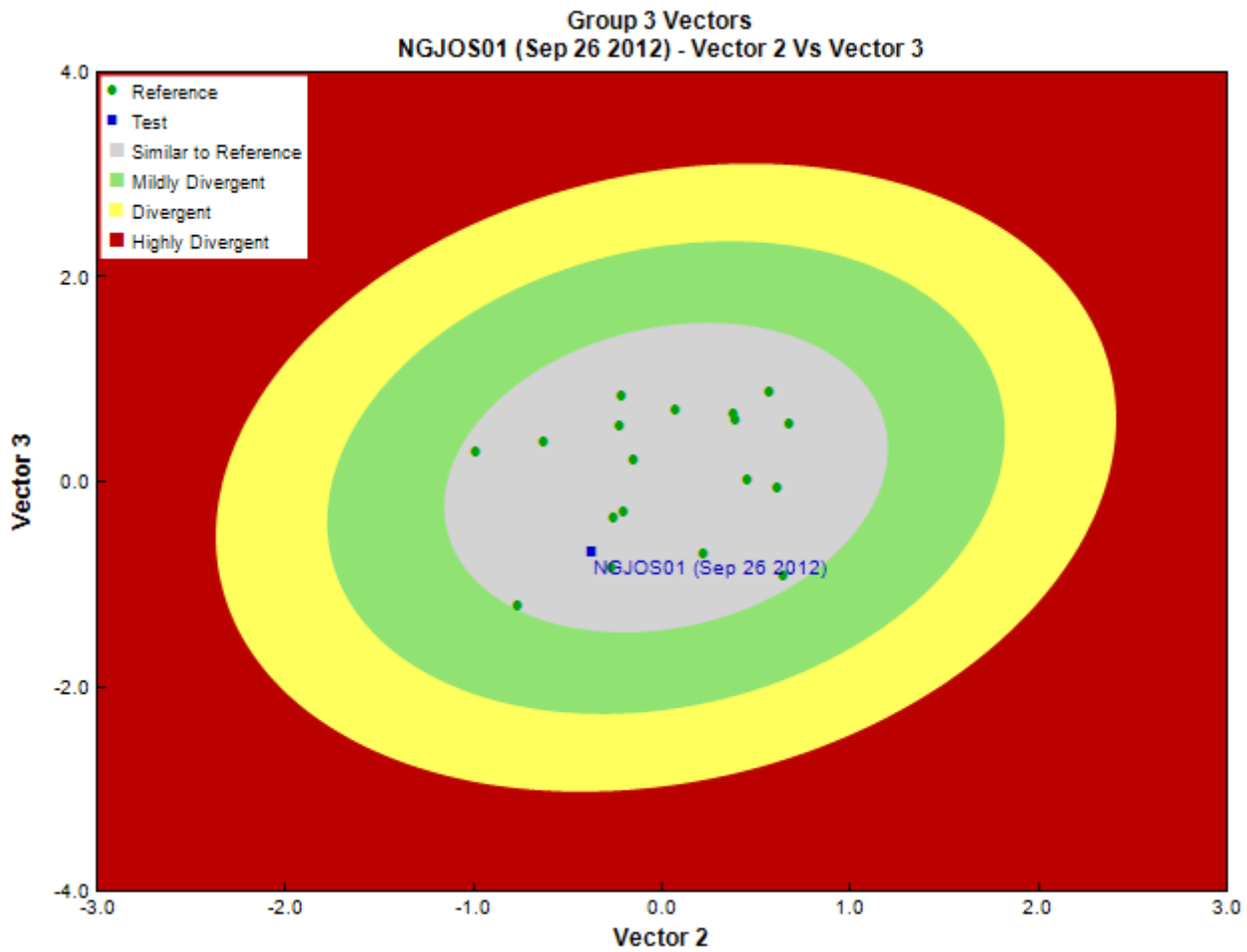


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Eco Analysts, EcoAnalysts
Date Taxonomy Completed	February 12, 2013
	Marchant Box
Sub-Sample Proportion	4/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count	
Arthropoda	Arachnida	Trombidiformes	Hydryphantidae	1	25.0	
	Insecta	Coleoptera	Elmidae	34	850.0	
			Chironomidae	42	1,050.0	
		Ephemeroptera	Simuliidae	1	25.0	
			Baetidae	105	2,625.0	
				Ephemerellidae	28	700.0
				Heptageniidae	49	1,225.0
				Leptophlebiidae	2	50.0
		Plecoptera	Capniidae	7	175.0	
				Chloroperlidae	12	300.0
				Nemouridae	28	700.0
				Perlidae	9	225.0
				Perlodidae	2	50.0
				Taeniopterygidae	17	425.0
		Trichoptera	Brachycentridae	2	50.0	

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Hydropsychidae	1	25.0
			Limnephilidae	1	25.0
			Rhyacophilidae	8	200.0
			Uenoidae	3	75.0
			Total	352	8,800.0

Metrics

Name	NGJOS01	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.51	0.4 \pm 0.2
Number Of Individuals		
% Chironomidae	11.9	8.2 \pm 13.6
% Ephemeroptera	52.3	43.5 \pm 15.9
% Ephemeroptera that are Baetidae	57.1	33.9 \pm 27.7
% of 2 dominant taxa	43.8	59.2 \pm 10.0
% of dominant taxa	29.8	39.7 \pm 10.9
% Plecoptera	21.3	34.8 \pm 17.8
% Tricoptera	4.3	6.9 \pm 8.6
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 \pm 0.1
Total Abundance	8800.0	5757.3 \pm 4889.9
Richness		
Ephemeroptera taxa	4.0	3.4 \pm 0.5
EPT taxa (no)	15.0	11.5 \pm 1.2
Plecoptera taxa	6.0	5.3 \pm 0.9
Shannon-Wiener Diversity	2.2	1.9 \pm 0.3
Simpson's Diversity	0.9	0.8 \pm 0.1
Total No. of Taxa	19.0	17.1 \pm 2.4
Trichoptera taxa	5.0	2.8 \pm 1.0

Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGJOS01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Chironomidae	100%	100%	100%	100%	95%	1.00
Chloroperlidae	78%	88%	94%	100%	100%	0.95
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.81
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.88
Psychodidae	22%	65%	94%	8%	11%	0.79
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.94

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.58
RIVPACS : Observed taxa P>0.50	12.00
RIVPACS : O:E (p > 0.5)	0.88
RIVPACS : Expected taxa P>0.70	10.36
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	0.96

Habitat Description

Variable	NGJOS01	Predicted Group Reference Mean \pm SD
Channel		
Depth-Avg (cm)	20.1	22.5 \pm 10.5
Depth-BankfullMinusWetted (cm)	17.50	26.00 \pm 4.24
Depth-Max (cm)	28.6	32.9 \pm 17.9

Habitat Description

Variable	NGJOS01	Predicted Group Reference Mean \pm SD
Macrophyte (PercentRange)	0	0 \pm 0
Reach-%CanopyCoverage (PercentRange)	3.00	0.94 \pm 0.80
Reach-DomStreamsideVeg (Category (1-4))	4	3 \pm 1
Reach-Pools (Binary)	1	0 \pm 1
Reach-Rapids (Binary)	0	0 \pm 1
Reach-Riffles (Binary)	1	1 \pm 0
Reach-StraightRun (Binary)	1	1 \pm 0
Slope (m/m)	0.220000	0.0235102 \pm 0.0284557
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)	0.27	0.51 \pm 0.25
Velocity-Max (m/s)	0.37	0.75 \pm 0.28
Width-Bankfull (m)	4.6	15.6 \pm 12.8
Width-Wetted (m)	3.3	10.2 \pm 7.0
XSEC-VelMethod (Category (1-3))	1	2 \pm 1
Landcover		
Reg-Ice (%)	0.00000	0.46949 \pm 1.15785
Substrate Data		
%Bedrock (%)	0	0 \pm 0
%Boulder (%)	0	6 \pm 7
%Cobble (%)	59	61 \pm 27
%Gravel (%)	3	1 \pm 2
%Pebble (%)	38	31 \pm 28
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	1 \pm 3
D50 (cm)	7.35	79.45 \pm 47.98
Dg (cm)	6.7	73.9 \pm 48.0
Dominant-1st (Category(0-9))	6	6 \pm 2
Dominant-2nd (Category(0-9))	5	6 \pm 2
Embeddedness (Category(1-5))	3	4 \pm 1
PeriphytonCoverage (Category(1-5))	1	2 \pm 1
SurroundingMaterial (Category(0-9))	2	4 \pm 2
Topography		
SlopeLT30% (%)	54.84400	27.92073 \pm 14.83033
Water Chemistry		
General-Alkalinity (mg/L)	123.000000	121.5944444 \pm 36.7225924
General-DO (mg/L)	10.000000	10.4922222 \pm 0.8833463
General-pH (pH)	8.9	8.0 \pm 0.6
General-SpCond (μ S/cm)	209.800000	214.2437500 \pm 77.1891440
General-TempAir (Degrees Celsius)	13.0	10.5 \pm 4.2
General-TempWater (Degrees Celsius)	8.000000	6.8794444 \pm 1.7335020
General-Turbidity (NTU)	0.510000	0.0000000 \pm 0.0000000
Nitrogen-NO2 (mg/L)	0.002500	0.0023889 \pm 0.0063351
Nitrogen-NO2+NO3 (mg/L)	0.010000	0.0130000 \pm 0.0088111
Nitrogen-NO3 (mg/L)	0.010000	0.0245003 \pm 0.0229452
Phosphorus-OrthoP (mg/L)	0.002500	0.0035000 \pm 0.0018292