

Site Description

Study Name	CBWQ-Central Kootenay
Site	NGJOS01
Sampling Date	Sep 21 2010
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 (No image found)
Miscellaneous (No image found)



Substrate



Up Stream

Cabin Assessment Results

Reference Model Summary	
Model	Columbia-Okanagan Preliminary March 2010
Analysis Date	July 29, 2013
Taxonomic Level	Family

Cabin Assessment Results

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%	9.7%	76.2%	13.2%	0.8%
CABIN Assessment of NGJOS01 on Sep 21, 2010	Similar to Reference				

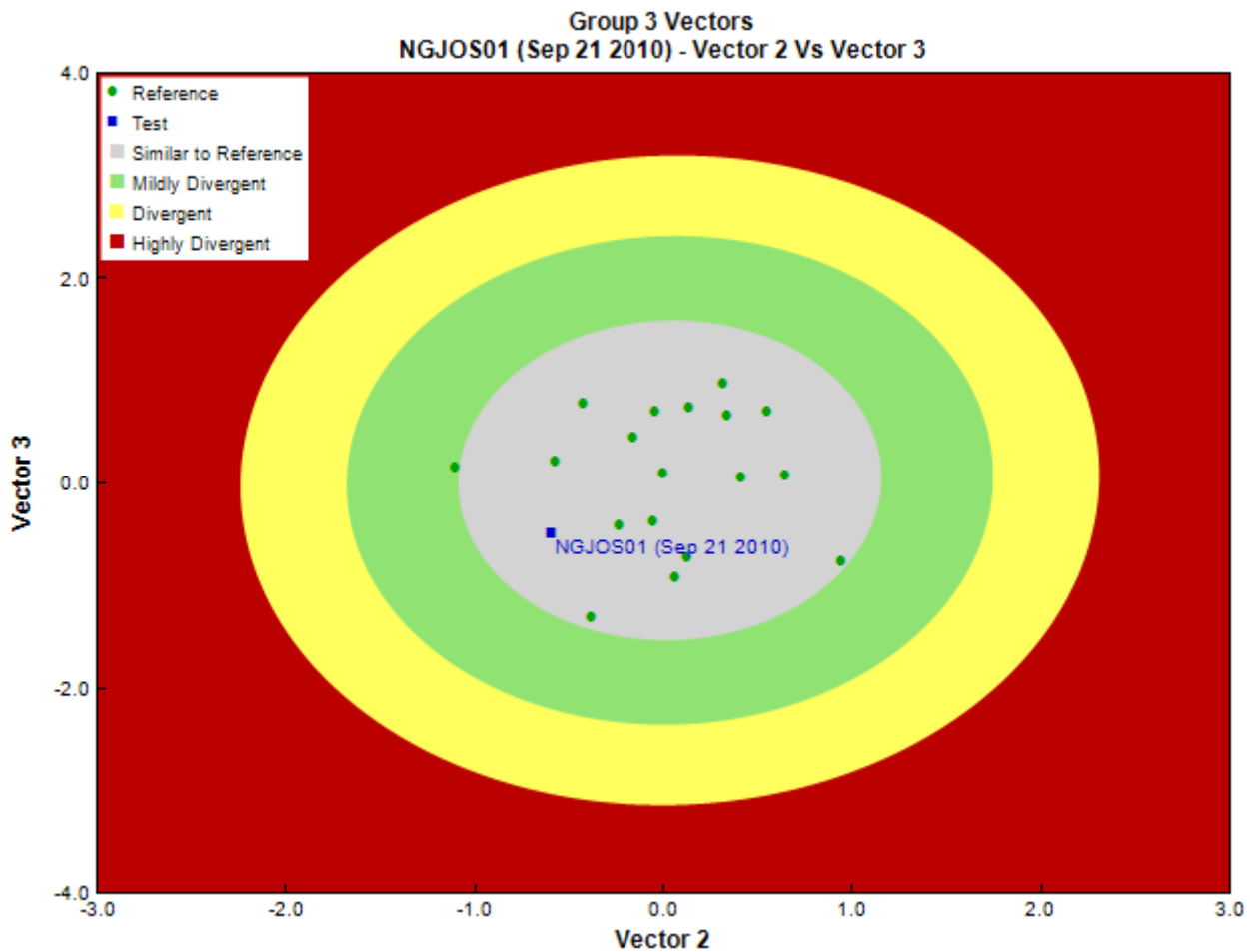


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Gary Lester, Ecoanalysts Inc.
Date Taxonomy Completed	March 09, 2011
	Marchant Box
Sub-Sample Proportion	6/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	1	16.7
	Insecta	Coleoptera	Elmidae	50	833.3
		Diptera	Chironomidae	35	583.3
			Empididae	1	16.7
			Pelecorhynchidae	10	166.7
			Psychodidae	1	16.7
			Tipulidae	1	16.7
		Ephemeroptera	Ameletidae	5	83.3
			Baetidae	75	1,250.0
			Ephemerellidae	35	583.3
			Heptageniidae	54	900.0
		Plecoptera	Chloroperlidae	20	333.3
			Leuctridae	2	33.3
			Nemouridae	20	333.3
			Peltoperlidae	1	16.7
			Perlidae	6	100.0
			Perlodidae	8	133.3
		Trichoptera	Brachycentridae	15	250.0
			Glossosomatidae	2	33.3
			Hydropsychidae	2	33.3
			Philopotamidae	1	16.7
			Rhyacophilidae	5	83.3
			Uenoidae	1	16.7
			Total	351	5,849.9

Metrics

Name	NGJOS01	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.51	0.4 \pm 0.2
Number Of Individuals		
% Chironomidae	10.0	8.2 \pm 13.6
% Ephemeroptera	48.1	43.5 \pm 15.9
% Ephemeroptera that are Baetidae	44.4	33.9 \pm 27.7
% of 2 dominant taxa	36.8	59.2 \pm 10.0
% of dominant taxa	21.4	39.7 \pm 10.9
% Plecoptera	16.2	34.8 \pm 17.8
% Trichoptera	7.4	6.9 \pm 8.6
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 \pm 0.1
Total Abundance	5849.9	5757.3 \pm 4889.9
Richness		
Ephemeroptera taxa	4.0	3.4 \pm 0.5
EPT taxa (no)	16.0	11.5 \pm 1.2
Plecoptera taxa	6.0	5.3 \pm 0.9
Shannon-Wiener Diversity	2.4	1.9 \pm 0.3
Simpson's Diversity	0.9	0.8 \pm 0.1
Total No. of Taxa	23.0	17.1 \pm 2.4
Trichoptera taxa	6.0	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%	0.80
Rhyacophilidae	100%	92%	100%	100%	95%	0.99

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	
Taeniopterygidae	89%	49%	100%	92%	97%	0.94

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.58
RIVPACS : Observed taxa P>0.50	13.00
RIVPACS : O:E (p > 0.5)	0.96
RIVPACS : Expected taxa P>0.70	10.36
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	0.97

Habitat Description

Variable	NGJOS01	Predicted Group Reference Mean \pm SD
Channel		
Depth-Avg (cm)	18.8	22.5 \pm 10.5
Depth-Max (cm)	26.0	32.9 \pm 17.9
Macrophyte (PercentRange)	0	0 \pm 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.94 \pm 0.80
Reach-Pools (Binary)	0	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)	0.0220000	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)	0.44	0.51 \pm 0.25
Velocity-Max (m/s)	0.70	0.75 \pm 0.28
Width-Bankfull (m)	4.9	15.6 \pm 12.8
Width-Wetted (m)	3.6	10.2 \pm 7.0
Landcover		
Reg-Ice (%)	0.00000	0.46949 \pm 1.15785
Substrate Data		
%Bedrock (%)	0	0 \pm 0
%Boulder (%)	1	6 \pm 7
%Cobble (%)	74	61 \pm 27
%Gravel (%)	0	1 \pm 2
%Pebble (%)	25	31 \pm 28
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	1 \pm 3
D50 (cm)	8.70	79.45 \pm 47.98
Dg (cm)	8.3	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))	4	4 \pm 1
PeriphytonCoverage (Category(1-5))	2	2 \pm 1
SurroundingMaterial (Category(0-9))	3	4 \pm 2
Topography		
SlopeLT30% (%)	54.84441	27.92073 \pm 14.83033
Water Chemistry		
General-Alkalinity (mg/L)	110.0000000	121.5944444 \pm 36.7225924
General-DO (mg/L)	16.0000000	10.4922222 \pm 0.8833463
General-pH (pH)	8.8	8.0 \pm 0.6
General-SpCond (μ S/cm)	138.9000000	214.2437500 \pm 77.1891440
General-TempAir (Degrees Celsius)	9.0	10.5 \pm 4.2
General-TempWater (Degrees Celsius)	7.0000000	6.8794444 \pm 1.7335020
General-Turbidity (NTU)	1.4600000	0.0000000 \pm 0.0000000
Nitrogen-NO2 (mg/L)	0.0025000	0.0023889 \pm 0.0063351
Nitrogen-NO2+NO3 (mg/L)	0.0100000	0.0130000 \pm 0.0088111

Habitat Description

Variable	NGJOS01	Predicted Group Reference Mean \pmSD
Nitrogen-NO3 (mg/L)	0.0100000	0.0245003 \pm 0.0229452
Phosphorus-OrthoP (mg/L)	2.5000000	0.0035000 \pm 0.0018292