

**Site Description**

<b>Study Name</b>	CBWQ-Central Kootenay
<b>Site</b>	NGJOS03
<b>Sampling Date</b>	Sep 26 2012
<b>Know Your Watershed Basin</b>	Central Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Southern Rocky Mountain Trench EcoRegion
<b>Coordinates (decimal degrees)</b>	49.51056 N, 115.75861 W
<b>Altitude</b>	2841
<b>Local Basin Name</b>	Joseph Creek St. Mary River
<b>Stream Order</b>	3

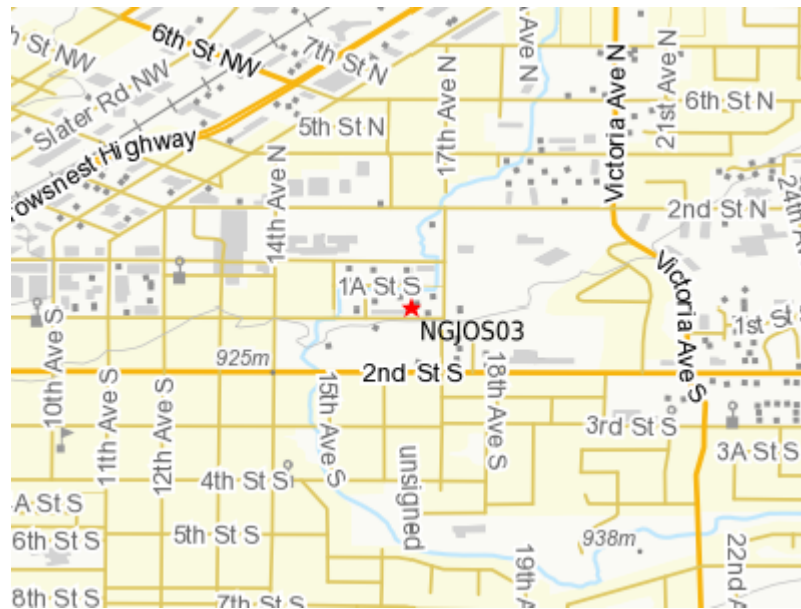


Figure 1. Location Map



Across Reach  
Aerial (No image found)



Down Stream



Field Sheet

Miscellaneous (No image found)



Substrate



Up Stream

**Cabin Assessment Results**

<b>Reference Model Summary</b>					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	July 29, 2013				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice SlopeLT30%				
<b>Reference Groups</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Number of Reference Sites</b>	9	43	17	12	33
<b>Group Error Rate</b>	22.2%	24.5%	22.2%	25.0%	32.4%
<b>Overall Model Error Rate</b>	26.4%				
<b>Probability of Group Membership</b>	0.0%	51.0%	47.5%	1.4%	0.1%
<b>CABIN Assessment of NGJOS03 on Sep 26, 2012</b>	Mildly Divergent				

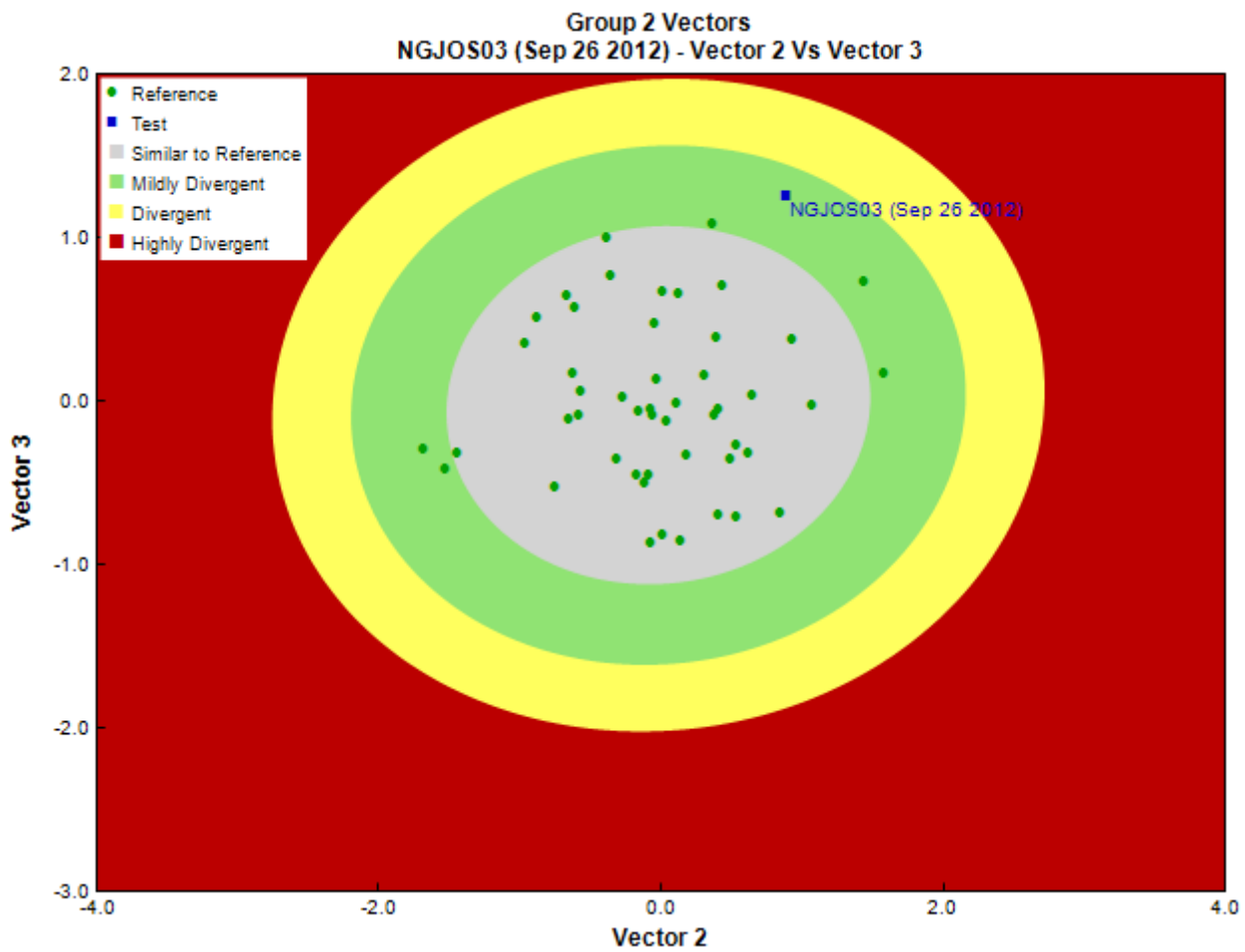


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

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

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Tubificida	Naididae	1	25.0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	2	50.0
		Insecta	Coleoptera	Elmidae	26
Diptera	Chironomidae		33	825.0	
			Empididae	3	75.0
			Psychodidae	2	50.0
			Simuliidae	1	25.0
			Tipulidae	7	175.0
		Ephemeroptera	Baetidae	7	175.0
			Ephemerellidae	140	3,500.0
			Heptageniidae	3	75.0
		Plecoptera	Capniidae	2	50.0
			Nemouridae	4	100.0
			Perlidae	8	200.0
			Perlodidae	4	100.0

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
		Trichoptera	Brachycentridae	9	225.0
			Glossosomatidae	5	125.0
			Hydropsychidae	6	150.0
			Lepidostomatidae	99	2,475.0
			Rhyacophilidae	1	25.0
Mollusca	Bivalvia	Veneroida	Pisidiidae	1	25.0
			Total	364	9,100.0

## Metrics

Name	NGJOS03	Predicted Group Reference Mean $\pm$ SD
<b>Bray-Curtis Distance</b>	0.83	0.5 $\pm$ 0.1
<b>Number Of Individuals</b>		
% Chironomidae	9.0	8.7 $\pm$ 10.4
% Ephemeroptera	41.1	45.6 $\pm$ 14.3
% Ephemeroptera that are Baetidae	4.7	44.5 $\pm$ 20.4
% of 2 dominant taxa	65.5	49.3 $\pm$ 10.5
% of dominant taxa	38.4	30.7 $\pm$ 8.9
% Plecoptera	4.9	23.3 $\pm$ 13.6
% Trichoptera	32.9	9.8 $\pm$ 7.1
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 $\pm$ 0.1
<b>Total Abundance</b>	9125.0	3016.9 $\pm$ 2496.0
<b>Richness</b>		
Ephemeroptera taxa	3.0	4.3 $\pm$ 0.6
EPT taxa (no)	12.0	14.0 $\pm$ 2.7
Plecoptera taxa	4.0	5.3 $\pm$ 1.7
Shannon-Wiener Diversity	1.9	2.2 $\pm$ 0.3
Simpson's Diversity	0.8	0.8 $\pm$ 0.1
Total No. of Taxa	22.0	21.8 $\pm$ 4.7
Trichoptera taxa	5.0	4.5 $\pm$ 1.5

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGJOS03
	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%	0.91
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.85
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.83
Psychodidae	22%	65%	94%	8%	11%	0.78
Rhyacophilidae	100%	92%	100%	100%	95%	0.96
Taeniopterygidae	89%	49%	100%	92%	97%	0.74

## RIVPACS Ratios

<b>RIVPACS : Expected taxa P&gt;0.50</b>	14.02
<b>RIVPACS : Observed taxa P&gt;0.50</b>	13.00
<b>RIVPACS : O:E (p &gt; 0.5)</b>	0.93
<b>RIVPACS : Expected taxa P&gt;0.70</b>	10.07
<b>RIVPACS : Observed taxa P&gt;0.70</b>	9.00
<b>RIVPACS : O:E (p &gt; 0.7)</b>	0.89

## Habitat Description

Variable	NGJOS03	Predicted Group Reference Mean $\pm$ SD
<b>Channel</b>		
<b>Depth-Avg (cm)</b>	15.1	18.0 $\pm$ 7.8

## Habitat Description

Variable	NGJOS03	Predicted Group Reference Mean $\pm$ SD
Depth-BankfullMinusWetted (cm)	21.80	46.83 $\pm$ 22.81
Depth-Max (cm)	22.1	23.9 $\pm$ 11.0
Macrophyte (PercentRange)	0	0 $\pm$ 1
Reach-%CanopyCoverage (PercentRange)	1.00	2.37 $\pm$ 1.20
Reach-DomStreamsideVeg (Category (1-4))	1	3 $\pm$ 1
Reach-Pools (Binary)	0	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)	0.0120000	0.1020758 $\pm$ 0.3184460
Veg-Coniferous (Binary)	1	1 $\pm$ 0
Veg-Deciduous (Binary)	0	1 $\pm$ 0
Veg-GrassesFerns (Binary)	1	1 $\pm$ 0
Veg-Shrubs (Binary)	1	1 $\pm$ 0
Velocity-Avg (m/s)	0.41	0.36 $\pm$ 0.17
Velocity-Max (m/s)	0.54	0.48 $\pm$ 0.22
Width-Bankfull (m)	5.9	10.4 $\pm$ 7.4
Width-Wetted (m)	5.5	5.6 $\pm$ 3.7
XSEC-VelMethod (Category (1-3))	1	2 $\pm$ 1
<b>Landcover</b>		
Reg-Ice (%)	0.00000	0.00000 $\pm$ 0.00000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	1	11 $\pm$ 9
%Cobble (%)	34	58 $\pm$ 15
%Gravel (%)	8	3 $\pm$ 5
%Pebble (%)	57	27 $\pm$ 14
%Sand (%)	0	1 $\pm$ 1
%Silt+Clay (%)	0	1 $\pm$ 2
D50 (cm)	4.80	20.95 $\pm$ 30.90
Dg (cm)	4.3	16.7 $\pm$ 27.3
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	5	6 $\pm$ 1
Embeddedness (Category(1-5))	4	4 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	2 $\pm$ 1
<b>Topography</b>		
SlopeLT30% (%)	85.87000	56.46157 $\pm$ 21.18067
<b>Water Chemistry</b>		
Ag (mg/L)	0.0530000	0.0000071 $\pm$ 0.0000039
Al (mg/L)	7260.0000000	0.0203857 $\pm$ 0.0252665
As (mg/L)	2.0600000	0.0005171 $\pm$ 0.0007540
Ba (mg/L)	26.7000000	0.0389286 $\pm$ 0.0177357
Be (mg/L)	0.2000000	0.0000114 $\pm$ 0.0000038
Ca (mg/L)	5080.0000000	22.5624250 $\pm$ 16.5307245
Cd (mg/L)	0.0550000	0.0000051 $\pm$ 0.0000029
Co (mg/L)	4.7700000	0.0000191 $\pm$ 0.0000250
Cr (mg/L)	9.6000000	0.0001429 $\pm$ 0.0000787
Cu (mg/L)	4.5700000	0.0005714 $\pm$ 0.0006419
Fe (mg/L)	13700.0000000	0.1625000 $\pm$ 0.2029396
General-Alkalinity (mg/L)	124.0000000	74.2090909 $\pm$ 49.2896792
General-DO (mg/L)	9.0000000	10.6191111 $\pm$ 0.7107705
General-pH (pH)	8.6	7.9 $\pm$ 0.4
General-SpCond ( $\mu$ S/cm)	37.0000000	143.9481481 $\pm$ 95.8528053
General-TempAir (Degrees Celsius)	8.0	16.9 $\pm$ 5.3
General-TempWater (Degrees Celsius)	10.5000000	9.5837917 $\pm$ 2.8075507
General-Turbidity (NTU)	317.5000000	0.3928571 $\pm$ 0.4025218
Hg (ng/L)	0.0250000	0.0000000 $\pm$ 0.0000000
K (mg/L)	437.0000000	1.3021622 $\pm$ 0.6781926
Li (mg/L)	11.1000000	0.0007150 $\pm$ 0.0007595
Mg (mg/L)	7490.0000000	4.8150000 $\pm$ 3.9874418
Mn (mg/L)	199.0000000	0.0048270 $\pm$ 0.0093216
Mo (mg/L)	0.0500000	0.0003543 $\pm$ 0.0001658

**Habitat Description**

<b>Variable</b>	<b>NGJOS03</b>	<b>Predicted Group Reference Mean ±SD</b>
<b>Na (mg/L)</b>	50.000000	3.8905405 ± 3.6065003
<b>Ni (mg/L)</b>	7.5600000	0.0002171 ± 0.0003655
<b>Nitrogen-NO2 (mg/L)</b>	0.0355000	0.0061486 ± 0.0067934
<b>Nitrogen-NO2+NO3 (mg/L)</b>	0.5260000	0.0178069 ± 0.0412372
<b>Nitrogen-NO3 (mg/L)</b>	0.4910000	0.0258108 ± 0.0256957
<b>Pb (mg/L)</b>	7.2600000	0.0000217 ± 0.0000292
<b>Phosphorus-OrthoP (mg/L)</b>	0.0000459	0.0078875 ± 0.0114003
<b>Sb (mg/L)</b>	0.0500000	0.0000327 ± 0.0000172
<b>Se (mg/L)</b>	0.2500000	0.0003229 ± 0.0001776
<b>Sn (mg/L)</b>	0.2300000	0.0000100 ± 0.0000071
<b>Sr (mg/L)</b>	9.2800000	0.0810571 ± 0.0366920
<b>Ti (mg/L)</b>	136.0000000	0.0010000 ± 0.0002828
<b>Tl (mg/L)</b>	0.0250000	0.0000013 ± 0.0000010
<b>U (mg/L)</b>	0.3190000	0.0001454 ± 0.0001004
<b>V (mg/L)</b>	7.7000000	0.0002957 ± 0.0001416
<b>Zn (mg/L)</b>	40.6000000	0.0005857 ± 0.0003388
<b>Zr (mg/L)</b>	1.2300000	0.0000000 ± 0.0000000