

Site Description

Study Name	CBWQ-Central Kootenay
Site	NGJOS01
Sampling Date	Sep 19 2011
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

CABIN Training Field Sheet Page 1 of 6

Field Crew J. Davidson, L. Woods Site Code 1600001

Sampling Date (MM/YY) 10/09/2010 QA/QC site Yes No

OHS: Site Inspection Sheet Completed

CABIN Study Name Lead

Primary Site Data

Local Basin name Hay Ecoregion _____

River/Stream Name Hay Stream Order (map scale 1:50,000) _____
Indicate if other map scale used

Geographical Description/Notes
with evidence of heavy logging about 200m upstream

Surrounding Land Use (check those present) information source visual

<input type="checkbox"/> Forest	<input type="checkbox"/> Field/Pasture	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Residential/Urban
<input type="checkbox"/> Logging	<input type="checkbox"/> Mining	<input type="checkbox"/> Commercial/Industrial	<input type="checkbox"/> Other _____

Dominant surrounding Land Use (check one) information source visual

<input type="checkbox"/> Forest	<input type="checkbox"/> Field/Pasture	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Residential/Urban
<input type="checkbox"/> Logging	<input type="checkbox"/> Mining	<input type="checkbox"/> Commercial/Industrial	<input type="checkbox"/> Other _____

Location Data Latitude 41° 41' 28" N Longitude 107° 41' 28" W units: degrees/arc or decimal deg

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%	11.3%	75.7%	12.2%	0.9%
CABIN Assessment of NGJOS01 on Sep 19, 2011	Similar to Reference				

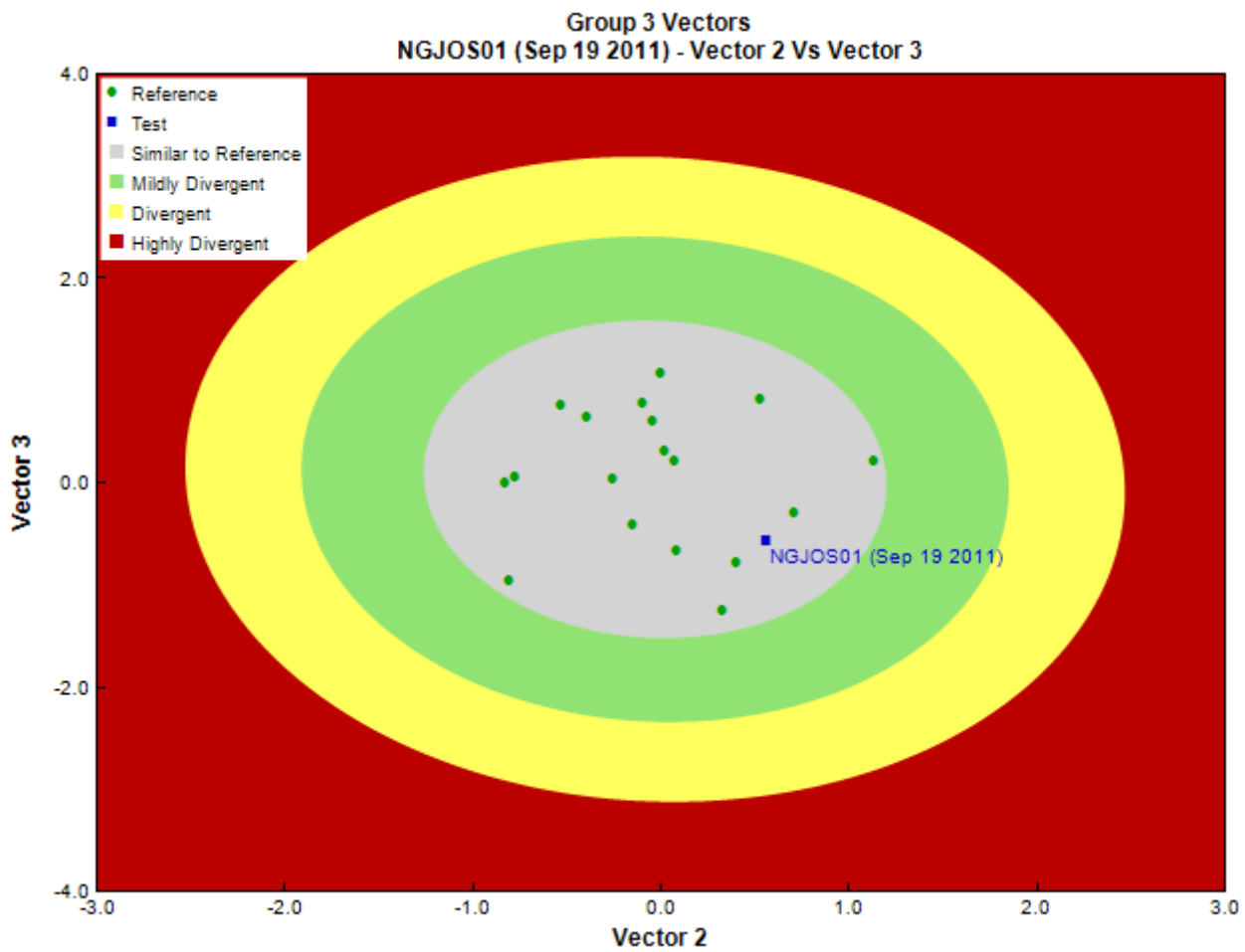


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

Sample Information

Sampling Device	Kick Net
Mesh Size	400
Sampling Time	3
Taxonomist	Eco Analsyts, EcoAnalysts
Date Taxonomy Completed	January 27, 2012
	Marchant Box
Sub-Sample Proportion	4/100

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count		
Arthropoda	Arachnida	Trombidiformes	Hydryphantidae	1	25.0		
			Lebertiidae	2	50.0		
				Torrenticolidae	1	25.0	
	Insecta	Coleoptera		Elmidae	44	1,100.0	
				Diptera	Chironomidae	27	675.0
					Pelecorynchidae	7	175.0
				Psychodidae	1	25.0	
				Tipulidae	1	25.0	
			Ephemeroptera	Baetidae	61	1,525.0	
				Ephemerellidae	22	550.0	
				Heptageniidae	55	1,375.0	
			Plecoptera		Capniidae	3	75.0
		Chloroperlidae			13	325.0	
		Nemouridae			33	825.0	
Perlidae		10			250.0		

Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlodidae	2	50.0
			Taeniopterygidae	4	100.0
		Trichoptera	Brachycentridae	2	50.0
			Hydropsychidae	3	75.0
			Limnephilidae	1	25.0
			Philopotamidae	3	75.0
			Rhyacophilidae	20	500.0
			Uenoidae	7	175.0
			Total	323	8,075.0

Metrics

Name	NGJOS01	Predicted Group Reference Mean \pm SD
Bray-Curtis Distance	0.52	0.4 \pm 0.2
Number Of Individuals		
% Chironomidae	8.4	8.2 \pm 13.6
% Ephemeroptera	42.7	43.5 \pm 15.9
% Ephemeroptera that are Baetidae	44.2	33.9 \pm 27.7
% of 2 dominant taxa	35.9	59.2 \pm 10.0
% of dominant taxa	18.9	39.7 \pm 10.9
% Plecoptera	20.1	34.8 \pm 17.8
% Trichoptera	11.1	6.9 \pm 8.6
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 \pm 0.1
Total Abundance	8075.0	5757.3 \pm 4889.9
Richness		
Ephemeroptera taxa	3.0	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	2.5	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%	0.94
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
Taeniopterygidae	89%	49%	100%	92%	97%	0.93

RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.57
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	11.00
RIVPACS : O:E (p > 0.7)	1.06

Habitat Description

Variable	NGJOS01	Predicted Group Reference Mean \pm SD
Channel		
Depth-Avg (cm)	9.1	22.5 \pm 10.5
Depth-Max (cm)	19.0	32.9 \pm 17.9
Macrophyte (PercentRange)	0	0 \pm 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.94 \pm 0.80
Reach-%Logging (PercentRange)	0	0 \pm 0
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)	0.36	0.51 \pm 0.25
Velocity-Max (m/s)	0.42	0.75 \pm 0.28
Width-Bankfull (m)	6.0	15.6 \pm 12.8
Width-Wetted (m)	4.0	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 (%)	80	61 \pm 27
%Gravel (%)	0	1 \pm 2
%Pebble (%)	19	31 \pm 28
%Sand (%)	0	0 \pm 0
%Silt+Clay (%)	0	1 \pm 3
D50 (cm)	10.00	79.45 \pm 47.98
Dg (cm)	9.4	73.9 \pm 48.0
Dominant-1st (Category(0-9))	6	6 \pm 2
Dominant-2nd (Category(0-9))	7	6 \pm 2
Embeddedness (Category(1-5))	4	4 \pm 1
PeriphytonCoverage (Category(1-5))	2	2 \pm 1
Topography		
SlopeLT30% (%)	54.84000	27.92073 \pm 14.83033
Water Chemistry		
General-Alkalinity (mg/L)	120.0000000	121.5944444 \pm 36.7225924
General-DO (mg/L)	10.0000000	10.4922222 \pm 0.8833463
General-pH (pH)	8.8	8.0 \pm 0.6
General-SpCond (μ S/cm)	203.4000000	214.2437500 \pm 77.1891440
General-TempAir (Degrees Celsius)	8.5	10.5 \pm 4.2
General-TempWater (Degrees Celsius)	7.5000000	6.8794444 \pm 1.7335020
General-Turbidity (NTU)	0.7200000	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
Nitrogen-NO3 (mg/L)	0.0100000	0.0245003 \pm 0.0229452
Phosphorus-OrthoP (mg/L)	0.0025000	0.0035000 \pm 0.0018292