

**Site Description**

<b>Study Name</b>	CBWQ-St. Mary
<b>Site</b>	NGSTM01
<b>Sampling Date</b>	Oct 04 2010
<b>Know Your Watershed Basin</b>	Lower Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.66971 N, 116.34550 W
<b>Altitude</b>	3307
<b>Local Basin Name</b>	St. Mary River
	St Mary
<b>Stream Order</b>	2



Figure 1. Location Map



Across Reach



Across Reach  
Aerial (No image found)



Down Stream



Down Stream

Field Crew V. Anderson, J. Hopper Site Code NCSM01  
Sampling Date (DMY) Oct 4/10 repeat site:  Yes  No WQM station  Yes  No  
p.p.  
OHS: Site Inspection Sheet Completed   
Primary Site Data  
Local Basin name St Mary R CABIN Study Name CRUG  
River/Stream Name St Mary R Ecoregion Southern Rocky Mtn Trench  
Stream Order (map scale 1:50,000)  
Select one: Test Site  Potential Reference Site  Confirmed  How?  
Geographical description/notes:  
Sounding Land Use: (check those present) information source:  
 Forest  Field/Pasture  Agriculture  Residential/Urban  
 Logging  Mining  Commercial/Industrial  Other  
Dominant surrounding Land Use:

Field Sheet

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 Logging  Mining  Commercial/Industrial  Other  
Dominant surrounding Land Use: (check one) information source:  
 Forest  Field/Pasture  Agriculture  Residential/Urban  
 Logging  Mining  Commercial/Industrial  Other  
Location Data  
Latitude 37.127 N Longitude 107.127 W (approximate or decimal deg)  
Elevation 2000 feet (approx) GPS Datum:  WGS84  NAD83  Other  
Site Location Map Drawing

Field Sheet

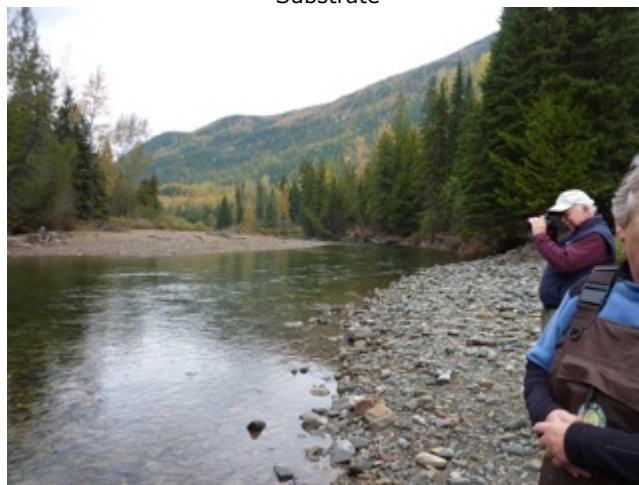
Miscellaneous (No image found)



Substrate



Substrate



Up Stream



Up Stream

**Cabin Assessment Results**

<b>Reference Model Summary</b>					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	October 25, 2017				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-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>	59.5%	0.2%	8.3%	29.6%	2.4%
<b>CABIN Assessment of NGSTM01 on Oct 04, 2010</b>	Similar to Reference				

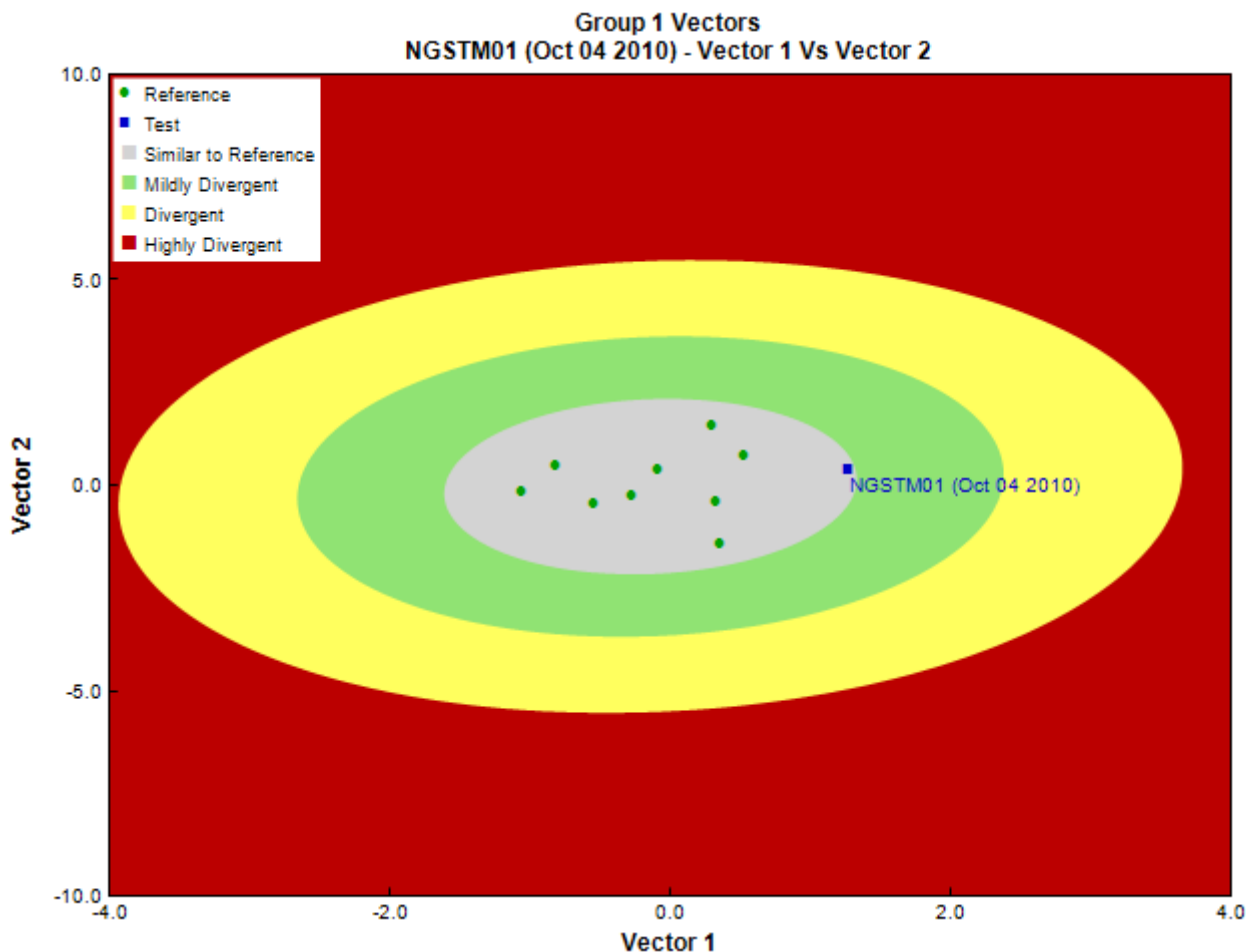


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Gary Lester, Ecoanalysts Inc.
<b>Date Taxonomy Completed</b>	March 09, 2011
	Marchant Box
<b>Sub-Sample Proportion</b>	19/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Arthropoda	Arachnida	Trombidiformes	Hydryphantidae	1	5.3
			Hygrobatidae	3	15.8
			Lebertiidae	11	57.9
			Torrenticolidae	1	5.3
	Insecta	Coleoptera	Dytiscidae	3	15.8
			Elmidae	2	10.5
			Diptera	Ceratopogonidae	2
Chironomidae	20	105.3			
			Empididae	2	10.5

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Simuliidae	1	5.3
			Tipulidae	3	15.8
		Ephemeroptera	Ameletidae	11	57.9
			Baetidae	101	531.6
			Ephemerellidae	26	136.8
			Heptageniidae	127	668.4
			Leptophlebiidae	10	52.6
		Plecoptera	Capniidae	11	57.9
			Chloroperlidae	10	52.6
			Nemouridae	7	36.8
			Perlidae	3	15.8
			Perlodidae	9	47.4
			Taeniopterygidae	11	57.9
		Trichoptera	Glossosomatidae	1	5.3
			Hydropsychidae	3	15.8
			Lepidostomatidae	3	15.8
			Limnephilidae	5	26.3
			Rhyacophilidae	1	5.3
			Total	388	2,042.2

## Metrics

Name	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.8	0.4 $\pm$ 0.2
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	3.7	3.3 $\pm$ 0.5
Intolerant taxa	--	1.0
Long-lived taxa	3.0	2.3 $\pm$ 1.5
Tolerant individuals (%)	0.8	
<b>Functional Measures</b>		
% Filterers	1.0	1.1 $\pm$ 1.5
% Gatherers	26.3	35.2 $\pm$ 11.4
% Predatores	18.0	16.9 $\pm$ 7.6
% Scrapers	67.0	60.6 $\pm$ 17.9
% Shredder	10.8	19.4 $\pm$ 13.9
No. Clinger Taxa	17.0	18.6 $\pm$ 4.2
<b>Number Of Individuals</b>		
% Chironomidae	5.2	8.1 $\pm$ 6.9
% Coleoptera	1.3	0.5 $\pm$ 1.7
% Diptera + Non-insects	11.3	11.2 $\pm$ 7.6
% Ephemeroptera	70.9	61.6 $\pm$ 17.6
% Ephemeroptera that are Baetidae	36.7	50.3 $\pm$ 24.0
% EPT Individuals	87.4	88.3 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	58.8	59.1 $\pm$ 14.3
% of 5 dominant taxa	73.5	84.1 $\pm$ 7.1
% of dominant taxa	32.7	41.5 $\pm$ 15.1
% Plecoptera	13.1	23.9 $\pm$ 14.1
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	23.1	12.9 $\pm$ 23.9
% Tricoptera	3.3	2.8 $\pm$ 2.9
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 $\pm$ 0.1
Total Abundance	2042.0	1453.9 $\pm$ 1355.4
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	2.0	0.2 $\pm$ 0.4
Diptera taxa	5.0	2.9 $\pm$ 1.0
Ephemeroptera taxa	5.0	3.6 $\pm$ 0.6
EPT Individuals (Sum)	1784.1	1288.9 $\pm$ 1149.7
EPT taxa (no)	16.0	11.1 $\pm$ 2.1
Odonata taxa	--	0.0 $\pm$ 0.0
Pielou's Evenness	0.7	0.7 $\pm$ 0.1

**Metrics**

Name	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Plecoptera taxa	6.0	5.1 $\pm$ 1.2
Shannon-Wiener Diversity	2.2	1.8 $\pm$ 0.4
Simpson's Diversity	0.8	0.7 $\pm$ 0.1
Simpson's Evenness	0.2	0.3 $\pm$ 0.1
Total No. of Taxa	27.0	16.3 $\pm$ 3.2
Trichoptera taxa	5.0	2.3 $\pm$ 1.3

**Frequency and Probability of Taxa Occurrence**

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGSTM01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.83
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Taeniopterygidae	89%	49%	100%	92%	97%	0.91

**RIVPACS Ratios**

RIVPACS : Expected taxa P>0.50	12.30
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	1.14
RIVPACS : Expected taxa P>0.70	9.26
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	1.08

**Habitat Description**

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	14.24221	13.40132 $\pm$ 26.65230
Metamorphic (%)	0.00000	0.73186 $\pm$ 1.11377
Sedimentary (%)	85.73329	85.86682 $\pm$ 26.25895
Ultramafic (%)	0.02450	0.00000 $\pm$ 0.00000
Volcanic (%)	0.00000	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	67.6	39.4 $\pm$ 23.6
Depth-BankfullMinusWetted (cm)	100.00	33.28 $\pm$ 13.75
Depth-Max (cm)	88.0	55.6 $\pm$ 30.6
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.67 $\pm$ 1.00
Reach-DomStreamsideVeg (Category (1-4))	4	3 $\pm$ 1
Reach-Riffles (Binary)	1	1 $\pm$ 1
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0200000	0.0440367 $\pm$ 0.0734738
Veg-Coniferous (Binary)	1	1 $\pm$ 0
Veg-Deciduous (Binary)	1	1 $\pm$ 0
Veg-Shrubs (Binary)	1	1 $\pm$ 0
Velocity-Avg (m/s)	0.77	0.64 $\pm$ 0.29
Velocity-Max (m/s)	1.04	0.81 $\pm$ 0.28
Width-Bankfull (m)	42.0	27.7 $\pm$ 17.6
Width-Wetted (m)	30.4	17.6 $\pm$ 11.6
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 1
<b>Climate</b>		
Precip01_JAN (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip02_FEB (mm)	99.39286	109.88064 $\pm$ 33.20254
Precip03_MAR (mm)	90.67857	99.70303 $\pm$ 25.98060
Precip04_APR (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip05_MAY (mm)	77.50000	73.20589 $\pm$ 7.25987
Precip06_JUN (mm)	82.71429	90.96448 $\pm$ 10.81805

## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Precip07_JUL (mm)	66.60714	86.58283 $\pm$ 13.49738
Precip08_AUG (mm)	61.85714	84.09596 $\pm$ 14.12059
Precip09_SEP (mm)	59.85714	75.27542 $\pm$ 14.70704
Precip10_OCT (mm)	70.17857	93.43771 $\pm$ 28.45319
Precip11_NOV (mm)	121.14286	147.35253 $\pm$ 38.45018
Precip12_DEC (mm)	132.39286	151.46044 $\pm$ 42.16075
PrecipTotal_ANNUAL (mm)	1054.78571	1223.65219 $\pm$ 273.62669
Temp01_JANMax (Degrees Celsius)	-6.03571	-6.88199 $\pm$ 1.93195
Temp01_JANmin (Degrees Celsius)	-12.39286	-13.71414 $\pm$ 2.38881
Temp02_FEBmax (Degrees Celsius)	-3.00000	-3.85034 $\pm$ 2.06368
Temp02_FEBmin (Degrees Celsius)	-10.46429	-11.56330 $\pm$ 2.44788
Temp03_MARmax (Degrees Celsius)	0.46429	0.01768 $\pm$ 2.47627
Temp03_MARmin (Degrees Celsius)	-7.32143	-8.72492 $\pm$ 2.28722
Temp04_APRmax (Degrees Celsius)	4.71429	3.78081 $\pm$ 3.17957
Temp04_APRmin (Degrees Celsius)	-3.71429	-4.54360 $\pm$ 1.94670
Temp05_MAYmax (Degrees Celsius)	9.67857	8.77003 $\pm$ 3.36878
Temp05_MAYmin (Degrees Celsius)	0.00000	-0.39933 $\pm$ 1.33596
Temp06_JUNMax (Degrees Celsius)	13.46429	12.51111 $\pm$ 3.51659
Temp06_JUNMin (Degrees Celsius)	2.82143	2.15774 $\pm$ 1.71410
Temp07_JULmax (Degrees Celsius)	17.21429	15.97172 $\pm$ 3.60230
Temp07_JULmin (Degrees Celsius)	5.25000	4.26852 $\pm$ 1.68829
Temp08_AUGmax (Degrees Celsius)	17.14286	15.95404 $\pm$ 3.61582
Temp08_AUGmin (Degrees Celsius)	4.96429	4.26852 $\pm$ 1.68829
Temp09_SEPmax (Degrees Celsius)	12.07143	10.75690 $\pm$ 3.16095
Temp09_SEPmin (Degrees Celsius)	0.92857	0.82828 $\pm$ 1.34778
Temp10_OCTmax (Degrees Celsius)	5.14286	3.78199 $\pm$ 2.61196
Temp10_OCTmin (Degrees Celsius)	-2.32143	-2.86650 $\pm$ 1.41557
Temp11_NOVmax (Degrees Celsius)	-2.50000	-3.03434 $\pm$ 2.15061
Temp11_NOVmin (Degrees Celsius)	-8.00000	-9.02744 $\pm$ 2.23762
Temp12_DECmax (Degrees Celsius)	-6.57143	-7.12424 $\pm$ 2.04773
Temp12_DECmin (Degrees Celsius)	-12.21429	-13.10724 $\pm$ 2.40381
TempANNUALmax (Degrees Celsius)	4.78571	3.82054 $\pm$ 2.80061
TempANNUALmean (Degrees Celsius)	0.50000	0.08754 $\pm$ 2.10549
TempANNUALmin (Degrees Celsius)	-3.21429	-4.01465 $\pm$ 1.92102
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	1672.70653	248.05797 $\pm$ 212.27501
Perimeter (Km)	335.30656	115.90189 $\pm$ 79.39444
StreamDensity (m/km <sup>2</sup> )	1944.56930	1641.77078 $\pm$ 689.92032
StreamLength (m)	3252693.77	386293.17 $\pm$ 275066.40
<b>Landcover</b>		
Natl-AnnCrops (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Barren (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafOpen (%)	0.24929	1.11783 $\pm$ 1.18871
Natl-BroadleafSparse (%)	0.00000	0.05014 $\pm$ 0.07576
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.43451	6.38699 $\pm$ 4.34837
Natl-ConiferousOpen (%)	54.56044	40.47833 $\pm$ 22.06760
Natl-ConiferousSparse (%)	0.00000	1.22915 $\pm$ 1.10282
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	12.43038	10.56536 $\pm$ 3.88369
Natl-Grassland (%)	1.91214	4.29128 $\pm$ 3.56936
Natl-Herb (%)	5.15613	1.97139 $\pm$ 2.48389
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.02198 $\pm$ 0.03299
Natl-MixedwoodOpen (%)	0.00000	0.99757 $\pm$ 1.29290
Natl-MixedwoodSparse (%)	0.00000	0.00671 $\pm$ 0.01007
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.93014	6.91669 $\pm$ 6.91715
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	5.84600	3.03173 $\pm$ 2.25077



## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Natl-ShrubTall (%)	0.00000	0.01289 $\pm$ 0.02622
Natl-SnowIce (%)	0.15673	12.85833 $\pm$ 16.61270
Natl-Water (%)	0.78974	0.57284 $\pm$ 0.84888
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.02461	0.00632 $\pm$ 0.00950
Natl-WetlandShrub (%)	0.03719	0.00789 $\pm$ 0.01184
Natl-WetlandTreed (%)	0.00000	0.00063 $\pm$ 0.00125
Reg-Ice (%)	0.08864	11.04418 $\pm$ 12.39512
<b>Substrate Data</b>		
%Bedrock (%)	0	1 $\pm$ 2
%Boulder (%)	5	1 $\pm$ 2
%Cobble (%)	85	55 $\pm$ 30
%Gravel (%)	0	2 $\pm$ 2
%Pebble (%)	10	40 $\pm$ 28
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 1
D50 (cm)	11.00	8.05 $\pm$ 3.69
Dg (cm)	10.9	7.5 $\pm$ 3.2
Dominant-1st (Category(0-9))	6	6 $\pm$ 2
Dominant-2nd (Category(0-9))	7	6 $\pm$ 1
Embeddedness (Category(1-5))	4	4 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	3 $\pm$ 1
SurroundingMaterial (Category(0-9))	3	3 $\pm$ 3
<b>Topography</b>		
ElevationMax (m)	2912.00000	3078.00000 $\pm$ 457.09463
ElevationMin (m)	946.00000	930.22222 $\pm$ 360.76162
ElevationStdev (m)	373.06891	413.05115 $\pm$ 88.46112
Reg-SlopeLT30% (%)	16.95839	27.80144 $\pm$ 15.50843
Slope30-50% (%)	28.02316	29.30660 $\pm$ 5.70051
Slope50-60% (%)	14.87296	12.36184 $\pm$ 3.15640
SlopeAvg (%)	52.98414	48.95258 $\pm$ 9.21336
SlopeGT60% (%)	36.47864	29.36303 $\pm$ 11.20971
SlopeLT30% (%)	20.62525	28.96853 $\pm$ 14.39762
SlopeMax (%)	384.10376	415.78743 $\pm$ 182.64978
SlopeMin (%)	0.00000	0.39554 $\pm$ 1.18662
SlopeStdev (%)	27.47387	29.25364 $\pm$ 5.81334
<b>Water Chemistry</b>		
General-Alkalinity (mg/L)	24.0000000	50.0555556 $\pm$ 32.0615467
General-DO (mg/L)	11.0000000	11.4277778 $\pm$ 1.0113454
General-pH (pH)	7.4	7.6 $\pm$ 0.6
General-SpCond ( $\mu$ S/cm)	44.5000000	121.1777778 $\pm$ 70.2563659
General-TempAir (Degrees Celsius)	14.0	4.2
General-TempWater (Degrees Celsius)	8.5000000	5.7844444 $\pm$ 2.4754197
General-Turbidity (NTU)	0.5500000	67.5295000 $\pm$ 95.4176962
Nitrogen-NO2 (mg/L)	0.0000000	0.0052222 $\pm$ 0.0048677
Nitrogen-NO2+NO3 (mg/L)	0.0900000	0.0000000 $\pm$ 0.0000000
Nitrogen-NO3 (mg/L)	0.0900000	0.1022222 $\pm$ 0.0873138
Phosphorus-OrthoP (mg/L)	0.0000000	0.0002000 $\pm$ 0.0004472

**Site Description**

<b>Study Name</b>	CBWQ-St. Mary
<b>Site</b>	NGSTM01
<b>Sampling Date</b>	Sep 22 2011
<b>Know Your Watershed Basin</b>	Lower Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.66969 N, 116.34550 W
<b>Altitude</b>	3307
<b>Local Basin Name</b>	St. Mary River
	St Mary
<b>Stream Order</b>	2

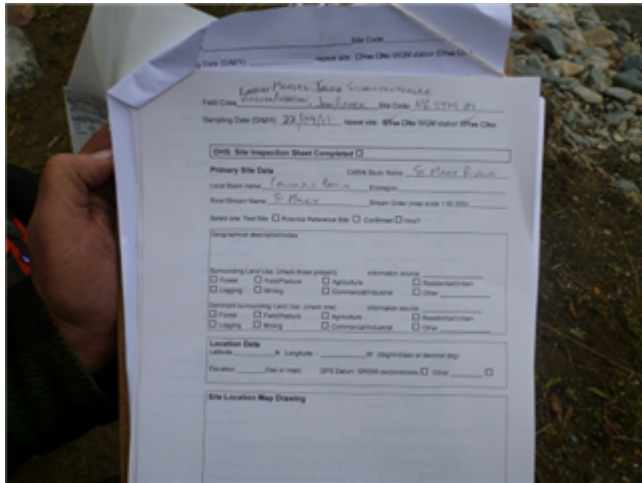


Figure 1. Location Map

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>	October 25, 2017				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-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>	94.1%	0.0%	1.1%	4.5%	0.3%
<b>CABIN Assessment of NGSTM01 on Sep 22, 2011</b>	Similar to Reference				

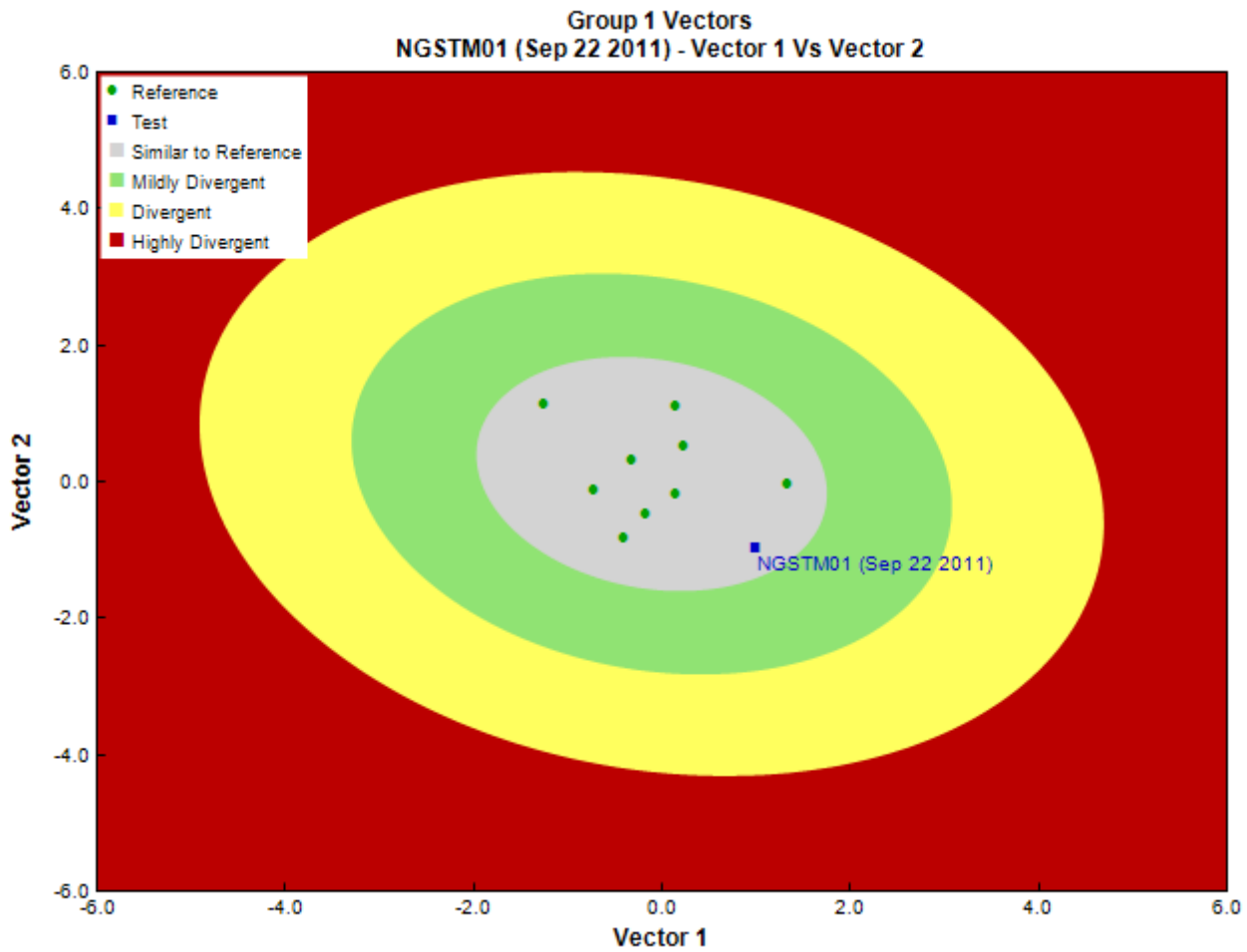


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<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>	January 27, 2012
	Marchant Box
<b>Sub-Sample Proportion</b>	100/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count	
Arthropoda	Arachnida	Trombidiformes	Aturidae	1	1.0	
			Hygrobatidae	5	5.0	
			Lebertiidae	6	6.0	
			Torrenticolidae	1	1.0	
	Insecta	Coleoptera	Dytiscidae	1	1.0	
			Elmidae	2	2.0	
			Diptera	Ceratopogonidae	6	6.0
				Chironomidae	48	48.0
				Psychodidae	1	1.0
			Ephemeroptera	Tipulidae	3	3.0
		Ameletidae		46	46.0	
		Ephemerellidae		6	6.0	
		Heptageniidae		9	9.0	
		Leptophlebiidae		3	3.0	
		Plecoptera		Capniidae	9	9.0

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Chloroperlidae	7	7.0
			Nemouridae	1	1.0
		Trichoptera	Apataniidae	1	1.0
			Hydroptilidae	1	1.0
			Lepidostomatidae	1	1.0
			Rhyacophilidae	2	2.0
			Uenoidae	1	1.0
			Total	161	161.0

## Metrics

Name	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.69	0.4 $\pm$ 0.2
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	4.6	3.3 $\pm$ 0.5
Intolerant taxa	--	1.0
Long-lived taxa	2.0	2.3 $\pm$ 1.5
Tolerant individuals (%)	0.6	
<b>Functional Measures</b>		
% Filterers	--	1.1 $\pm$ 1.5
% Gatherers	77.6	35.2 $\pm$ 11.4
% Predatores	47.8	16.9 $\pm$ 7.6
% Scrapers	16.8	60.6 $\pm$ 17.9
% Shredder	10.6	19.4 $\pm$ 13.9
No. Clinger Taxa	11.0	18.6 $\pm$ 4.2
<b>Number Of Individuals</b>		
% Chironomidae	29.8	8.1 $\pm$ 6.9
% Coleoptera	1.9	0.5 $\pm$ 1.7
% Diptera + Non-insects	44.1	11.2 $\pm$ 7.6
% Ephemeroptera	39.8	61.6 $\pm$ 17.6
% Ephemeroptera that are Baetidae	0.0	50.3 $\pm$ 24.0
% EPT Individuals	54.0	88.3 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	58.4	59.1 $\pm$ 14.3
% of 5 dominant taxa	73.9	84.1 $\pm$ 7.1
% of dominant taxa	29.8	41.5 $\pm$ 15.1
% Plecoptera	10.6	23.9 $\pm$ 14.1
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	0.0	12.9 $\pm$ 23.9
% Tricoptera	3.7	2.8 $\pm$ 2.9
No. EPT individuals/Chironomids+EPT Individuals	0.6	0.9 $\pm$ 0.1
Total Abundance	161.0	1453.9 $\pm$ 1355.4
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	2.0	0.2 $\pm$ 0.4
Diptera taxa	4.0	2.9 $\pm$ 1.0
Ephemeroptera taxa	4.0	3.6 $\pm$ 0.6
EPT Individuals (Sum)	87.0	1288.9 $\pm$ 1149.7
EPT taxa (no)	12.0	11.1 $\pm$ 2.1
Odonata taxa	--	0.0 $\pm$ 0.0
Pielou's Evenness	0.7	0.7 $\pm$ 0.1
Plecoptera taxa	3.0	5.1 $\pm$ 1.2
Shannon-Wiener Diversity	2.2	1.8 $\pm$ 0.4
Simpson's Diversity	0.8	0.7 $\pm$ 0.1
Simpson's Evenness	0.2	0.3 $\pm$ 0.1
Total No. of Taxa	22.0	16.3 $\pm$ 3.2
Trichoptera taxa	5.0	2.3 $\pm$ 1.3

### Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGSTM01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00
Lebertiidae	78%	65%	39%	58%	5%	0.76
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.79
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Sperchontidae	78%	63%	50%	42%	65%	0.76
Taeniopterygidae	89%	49%	100%	92%	97%	0.89

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	12.33
RIVPACS : Observed taxa P>0.50	10.00
RIVPACS : O:E (p > 0.5)	0.81
RIVPACS : Expected taxa P>0.70	10.56
RIVPACS : Observed taxa P>0.70	8.00
RIVPACS : O:E (p > 0.7)	0.76

### Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	14.24221	13.40132 $\pm$ 26.65230
Metamorphic (%)	0.00000	0.73186 $\pm$ 1.11377
Sedimentary (%)	85.73329	85.86682 $\pm$ 26.25895
Ultramafic (%)	0.02450	0.00000 $\pm$ 0.00000
Volcanic (%)	0.00000	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	81.9	39.4 $\pm$ 23.6
Depth-BankfullMinusWetted (cm)	152.00	33.28 $\pm$ 13.75
Depth-Max (cm)	111.2	55.6 $\pm$ 30.6
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.67 $\pm$ 1.00
Reach-DomStreamsideVeg (Category (1-4))	4	3 $\pm$ 1
Reach-Pools (Binary)	1	0 $\pm$ 1
Reach-Rapids (Binary)	1	0 $\pm$ 0
Reach-Riffles (Binary)	1	1 $\pm$ 1
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0200000	0.0440367 $\pm$ 0.0734738
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)	0.24	0.64 $\pm$ 0.29
Velocity-Max (m/s)	0.44	0.81 $\pm$ 0.28
Width-Bankfull (m)	49.0	27.7 $\pm$ 17.6
Width-Wetted (m)	24.1	17.6 $\pm$ 11.6
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 1
<b>Climate</b>		
Precip01_JAN (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip02_FEB (mm)	99.39286	109.88064 $\pm$ 33.20254
Precip03_MAR (mm)	90.67857	99.70303 $\pm$ 25.98060
Precip04_APR (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip05_MAY (mm)	77.50000	73.20589 $\pm$ 7.25987
Precip06_JUN (mm)	82.71429	90.96448 $\pm$ 10.81805
Precip07_JUL (mm)	66.60714	86.58283 $\pm$ 13.49738
Precip08_AUG (mm)	61.85714	84.09596 $\pm$ 14.12059
Precip09_SEP (mm)	59.85714	75.27542 $\pm$ 14.70704
Precip10_OCT (mm)	70.17857	93.43771 $\pm$ 28.45319
Precip11_NOV (mm)	121.14286	147.35253 $\pm$ 38.45018
Precip12_DEC (mm)	132.39286	151.46044 $\pm$ 42.16075

## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
PrecipTotal_ANNUAL (mm)	1054.78571	1223.65219 $\pm$ 273.62669
Temp01_JANMax (Degrees Celsius)	-6.03571	-6.88199 $\pm$ 1.93195
Temp01_JANmin (Degrees Celsius)	-12.39286	-13.71414 $\pm$ 2.38881
Temp02_FEBmax (Degrees Celsius)	-3.00000	-3.85034 $\pm$ 2.06368
Temp02_FEBmin (Degrees Celsius)	-10.46429	-11.56330 $\pm$ 2.44788
Temp03_MARmax (Degrees Celsius)	0.46429	0.01768 $\pm$ 2.47627
Temp03_MARmin (Degrees Celsius)	-7.32143	-8.72492 $\pm$ 2.28722
Temp04_APRmax (Degrees Celsius)	4.71429	3.78081 $\pm$ 3.17957
Temp04_APRmin (Degrees Celsius)	-3.71429	-4.54360 $\pm$ 1.94670
Temp05_MAYmax (Degrees Celsius)	9.67857	8.77003 $\pm$ 3.36878
Temp05_MAYmin (Degrees Celsius)	0.00000	-0.39933 $\pm$ 1.33596
Temp06_JUNMax (Degrees Celsius)	13.46429	12.51111 $\pm$ 3.51659
Temp06_JUNMin (Degrees Celsius)	2.82143	2.15774 $\pm$ 1.71410
Temp07_JULmax (Degrees Celsius)	17.21429	15.97172 $\pm$ 3.60230
Temp07_JULmin (Degrees Celsius)	5.25000	4.26852 $\pm$ 1.68829
Temp08_AUGmax (Degrees Celsius)	17.14286	15.95404 $\pm$ 3.61582
Temp08_AUGmin (Degrees Celsius)	4.96429	4.26852 $\pm$ 1.68829
Temp09_SEPmax (Degrees Celsius)	12.07143	10.75690 $\pm$ 3.16095
Temp09_SEPmin (Degrees Celsius)	0.92857	0.82828 $\pm$ 1.34778
Temp10_OCTmax (Degrees Celsius)	5.14286	3.78199 $\pm$ 2.61196
Temp10_OCTmin (Degrees Celsius)	-2.32143	-2.86650 $\pm$ 1.41557
Temp11_NOVmax (Degrees Celsius)	-2.50000	-3.03434 $\pm$ 2.15061
Temp11_NOVmin (Degrees Celsius)	-8.00000	-9.02744 $\pm$ 2.23762
Temp12_DECmax (Degrees Celsius)	-6.57143	-7.12424 $\pm$ 2.04773
Temp12_DECmin (Degrees Celsius)	-12.21429	-13.10724 $\pm$ 2.40381
TempANNUALmax (Degrees Celsius)	4.78571	3.82054 $\pm$ 2.80061
TempANNUALmean (Degrees Celsius)	0.50000	0.08754 $\pm$ 2.10549
TempANNUALmin (Degrees Celsius)	-3.21429	-4.01465 $\pm$ 1.92102
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	1672.70653	248.05797 $\pm$ 212.27501
Perimeter (Km)	335.30656	115.90189 $\pm$ 79.39444
StreamDensity (m/km <sup>2</sup> )	1944.56930	1641.77078 $\pm$ 689.92032
StreamLength (m)	3252693.77	386293.17 $\pm$ 275066.40
<b>Landcover</b>		
Natl-AnnCrops (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Barren (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafOpen (%)	0.24929	1.11783 $\pm$ 1.18871
Natl-BroadleafSparse (%)	0.00000	0.05014 $\pm$ 0.07576
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.43451	6.38699 $\pm$ 4.34837
Natl-ConiferousOpen (%)	54.56044	40.47833 $\pm$ 22.06760
Natl-ConiferousSparse (%)	0.00000	1.22915 $\pm$ 1.10282
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	12.43038	10.56536 $\pm$ 3.88369
Natl-Grassland (%)	1.91214	4.29128 $\pm$ 3.56936
Natl-Herb (%)	5.15613	1.97139 $\pm$ 2.48389
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.02198 $\pm$ 0.03299
Natl-MixedwoodOpen (%)	0.00000	0.99757 $\pm$ 1.29290
Natl-MixedwoodSparse (%)	0.00000	0.00671 $\pm$ 0.01007
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.93014	6.91669 $\pm$ 6.91715
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	5.84600	3.03173 $\pm$ 2.25077
Natl-ShrubTall (%)	0.00000	0.01289 $\pm$ 0.02622
Natl-SnowIce (%)	0.15673	12.85833 $\pm$ 16.61270
Natl-Water (%)	0.78974	0.57284 $\pm$ 0.84888
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.02461	0.00632 $\pm$ 0.00950
Natl-WetlandShrub (%)	0.03719	0.00789 $\pm$ 0.01184



## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Natl-WetlandTreed (%)	0.00000	0.00063 $\pm$ 0.00125
Reg-Ice (%)	0.09000	11.04418 $\pm$ 12.39512
<b>Substrate Data</b>		
%Bedrock (%)	0	1 $\pm$ 2
%Boulder (%)	0	1 $\pm$ 2
%Cobble (%)	81	55 $\pm$ 30
%Gravel (%)	0	2 $\pm$ 2
%Pebble (%)	19	40 $\pm$ 28
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 1
D50 (cm)	9.00	8.05 $\pm$ 3.69
Dg (cm)	8.4	7.5 $\pm$ 3.2
Dominant-1st (Category(0-9))	6	6 $\pm$ 2
Dominant-2nd (Category(0-9))	5	6 $\pm$ 1
Embeddedness (Category(1-5))	4	4 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	3 $\pm$ 1
SurroundingMaterial (Category(0-9))	3	3 $\pm$ 3
<b>Topography</b>		
ElevationMax (m)	2912.00000	3078.00000 $\pm$ 457.09463
ElevationMin (m)	946.00000	930.22222 $\pm$ 360.76162
ElevationStdev (m)	373.06891	413.05115 $\pm$ 88.46112
Reg-SlopeLT30% (%)	16.90000	27.80144 $\pm$ 15.50843
Slope30-50% (%)	28.02316	29.30660 $\pm$ 5.70051
Slope50-60% (%)	14.87296	12.36184 $\pm$ 3.15640
SlopeAvg (%)	52.98414	48.95258 $\pm$ 9.21336
SlopeGT60% (%)	36.47864	29.36303 $\pm$ 11.20971
SlopeLT30% (%)	20.62525	28.96853 $\pm$ 14.39762
SlopeMax (%)	384.10376	415.78743 $\pm$ 182.64978
SlopeMin (%)	0.00000	0.39554 $\pm$ 1.18662
SlopeStdev (%)	27.47387	29.25364 $\pm$ 5.81334
<b>Water Chemistry</b>		
General-Alkalinity (mg/L)	27.0000000	50.0555556 $\pm$ 32.0615467
General-DO (mg/L)	11.0000000	11.4277778 $\pm$ 1.0113454
General-pH (pH)	7.3	7.6 $\pm$ 0.6
General-SpCond ( $\mu$ S/cm)	43.4000000	121.1777778 $\pm$ 70.2563659
General-TempAir (Degrees Celsius)	10.0	4.2
General-TempWater (Degrees Celsius)	8.0000000	5.7844444 $\pm$ 2.4754197
General-Turbidity (NTU)	0.0390000	67.5295000 $\pm$ 95.4176962
Nitrogen-NO2 (mg/L)	0.0000000	0.0052222 $\pm$ 0.0048677
Nitrogen-NO2+NO3 (mg/L)	0.0700000	0.0000000 $\pm$ 0.0000000
Nitrogen-NO3 (mg/L)	0.0700000	0.1022222 $\pm$ 0.0873138
Phosphorus-OrthoP (mg/L)	0.0000000	0.0002000 $\pm$ 0.0004472

**Site Description**

<b>Study Name</b>	CBWQ-St. Mary
<b>Site</b>	NGSTM01
<b>Sampling Date</b>	Oct 01 2012
<b>Know Your Watershed Basin</b>	Lower Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.66971 N, 116.34550 W
<b>Altitude</b>	3307
<b>Local Basin Name</b>	St. Mary River
	St Mary
<b>Stream Order</b>	2

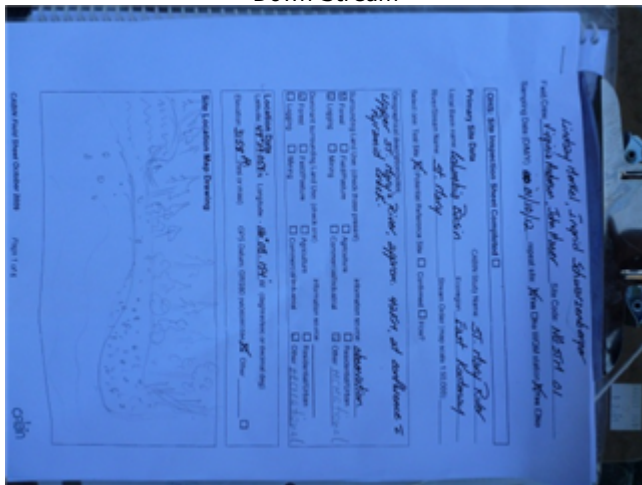


Figure 1. Location Map

Across Reach  
Aerial (No image found)



Down Stream



Field Sheet



Miscellaneous



Substrate



Up Stream

### Cabin Assessment Results

Reference Model Summary					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	October 25, 2017				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-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>	73.0%	0.1%	5.6%	19.8%	1.5%
<b>CABIN Assessment of NGSTM01 on Oct 01, 2012</b>	Similar to Reference				

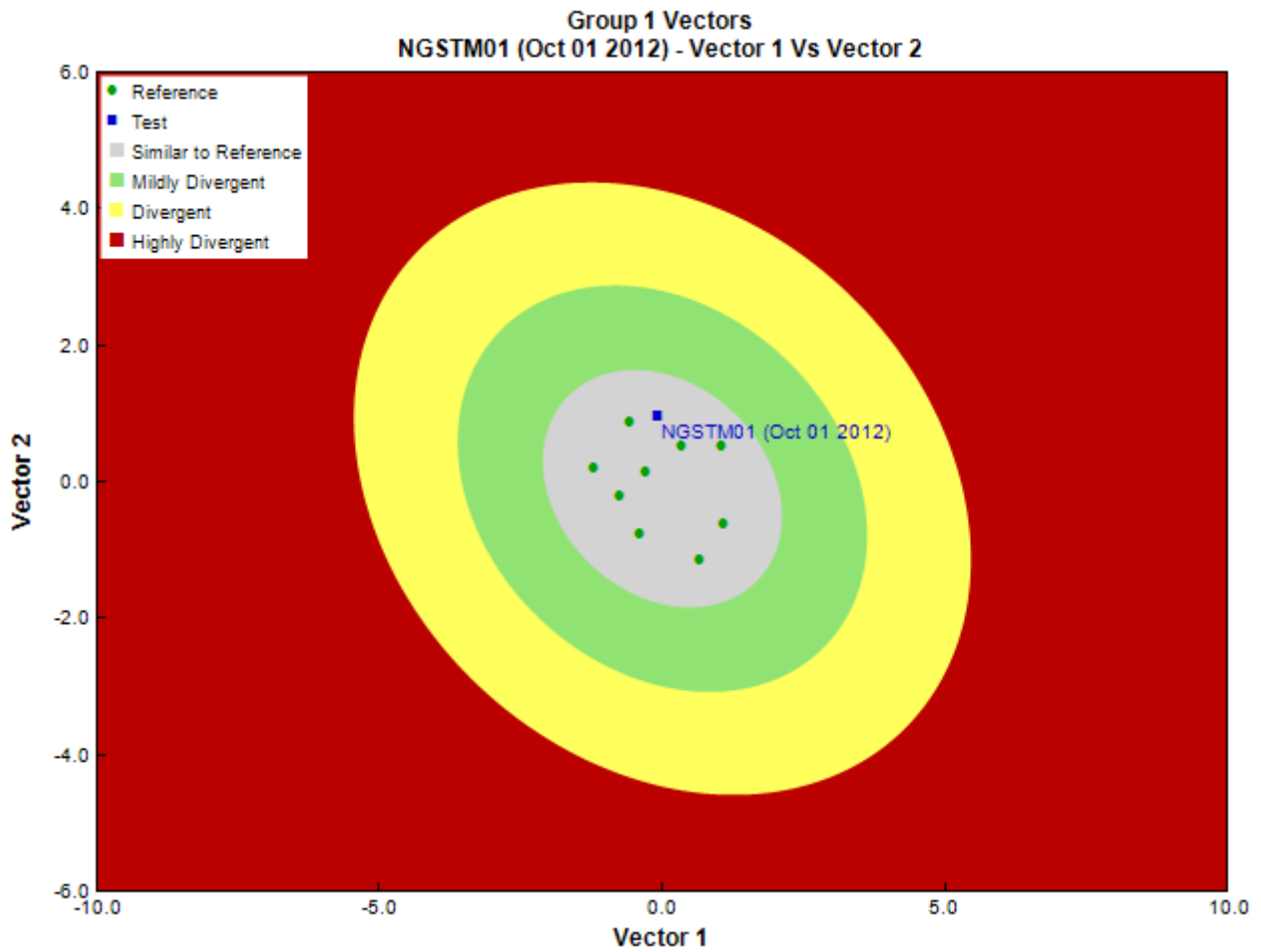


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<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 13, 2013
	Marchant Box
<b>Sub-Sample Proportion</b>	100/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count		
Arthropoda	Arachnida	Trombidiformes	Hydryphantidae	1	1.0		
			Hygrobatidae	1	1.0		
			Lebertiidae	26	26.0		
			Sperchontidae	3	3.0		
			Torrenticolidae	1	1.0		
	Insecta	Coleoptera		Elmidae	11	11.0	
				Diptera			
					Ceratopogonidae	4	4.0
					Chironomidae	16	16.0
					Empididae	1	1.0
					Psychodidae	1	1.0
					Tipulidae	2	2.0
			Ephemeroptera		Ameletidae	2	2.0
				Baetidae	92	92.0	
				Ephemerellidae	48	48.0	
			Heptageniidae	40	40.0		

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Leptophlebiidae	1	1.0
		Plecoptera	Chloroperlidae	14	14.0
			Nemouridae	8	8.0
			Perlidae	2	2.0
			Perlodidae	31	31.0
			Taeniopterygidae	51	51.0
		Trichoptera	Apataniidae	1	1.0
			Hydropsychidae	1	1.0
			Limnephilidae	2	2.0
			Rhyacophilidae	8	8.0
			Total	368	368.0

## Metrics

Name	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.38	0.4 $\pm$ 0.2
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	3.3	3.3 $\pm$ 0.5
Intolerant taxa	--	1.0
Long-lived taxa	2.0	2.3 $\pm$ 1.5
Tolerant individuals (%)	--	
<b>Functional Measures</b>		
% Filterers	0.3	1.1 $\pm$ 1.5
% Gatherers	42.9	35.2 $\pm$ 11.4
% Predatores	29.6	16.9 $\pm$ 7.6
% Scrapers	58.4	60.6 $\pm$ 17.9
% Shredder	20.4	19.4 $\pm$ 13.9
No. Clinger Taxa	13.0	18.6 $\pm$ 4.2
<b>Number Of Individuals</b>		
% Chironomidae	4.3	8.1 $\pm$ 6.9
% Coleoptera	3.0	0.5 $\pm$ 1.7
% Diptera + Non-insects	15.2	11.2 $\pm$ 7.6
% Ephemeroptera	49.7	61.6 $\pm$ 17.6
% Ephemeroptera that are Baetidae	50.3	50.3 $\pm$ 24.0
% EPT Individuals	81.8	88.3 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	38.9	59.1 $\pm$ 14.3
% of 5 dominant taxa	71.2	84.1 $\pm$ 7.1
% of dominant taxa	25.0	41.5 $\pm$ 15.1
% Plecoptera	28.8	23.9 $\pm$ 14.1
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	8.3	12.9 $\pm$ 23.9
% Tricoptera	3.3	2.8 $\pm$ 2.9
No. EPT individuals/Chironomids+EPT Individuals	0.9	0.9 $\pm$ 0.1
Total Abundance	368.0	1453.9 $\pm$ 1355.4
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	1.0	0.2 $\pm$ 0.4
Diptera taxa	5.0	2.9 $\pm$ 1.0
Ephemeroptera taxa	5.0	3.6 $\pm$ 0.6
EPT Individuals (Sum)	301.0	1288.9 $\pm$ 1149.7
EPT taxa (no)	14.0	11.1 $\pm$ 2.1
Odonata taxa	--	0.0 $\pm$ 0.0
Pielou's Evenness	0.7	0.7 $\pm$ 0.1
Plecoptera taxa	5.0	5.1 $\pm$ 1.2
Shannon-Wiener Diversity	2.4	1.8 $\pm$ 0.4
Simpson's Diversity	0.9	0.7 $\pm$ 0.1
Simpson's Evenness	0.3	0.3 $\pm$ 0.1
Total No. of Taxa	25.0	16.3 $\pm$ 3.2
Trichoptera taxa	4.0	2.3 $\pm$ 1.3

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGSTM01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00
Lebertiidae	78%	65%	39%	58%	5%	0.71
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.81
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Taeniopterygidae	89%	49%	100%	92%	97%	0.90

## RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	12.31
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	1.14
RIVPACS : Expected taxa P>0.70	9.88
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	1.01

## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	14.24221	13.40132 $\pm$ 26.65230
Metamorphic (%)	0.00000	0.73186 $\pm$ 1.11377
Sedimentary (%)	85.73329	85.86682 $\pm$ 26.25895
Ultramafic (%)	0.02450	0.00000 $\pm$ 0.00000
Volcanic (%)	0.00000	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	71.3	39.4 $\pm$ 23.6
Depth-BankfullMinusWetted (cm)	145.00	33.28 $\pm$ 13.75
Depth-Max (cm)	115.6	55.6 $\pm$ 30.6
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.67 $\pm$ 1.00
Reach-DomStreamsideVeg (Category (1-4))	1	3 $\pm$ 1
Reach-Pools (Binary)	1	0 $\pm$ 1
Reach-Riffles (Binary)	1	1 $\pm$ 1
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0200000	0.0440367 $\pm$ 0.0734738
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)	0.46	0.64 $\pm$ 0.29
Velocity-Max (m/s)	0.74	0.81 $\pm$ 0.28
Width-Bankfull (m)	53.0	27.7 $\pm$ 17.6
Width-Wetted (m)	22.0	17.6 $\pm$ 11.6
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 1
<b>Climate</b>		
Precip01_JAN (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip02_FEB (mm)	99.39286	109.88064 $\pm$ 33.20254
Precip03_MAR (mm)	90.67857	99.70303 $\pm$ 25.98060
Precip04_APR (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip05_MAY (mm)	77.50000	73.20589 $\pm$ 7.25987
Precip06_JUN (mm)	82.71429	90.96448 $\pm$ 10.81805
Precip07_JUL (mm)	66.60714	86.58283 $\pm$ 13.49738
Precip08_AUG (mm)	61.85714	84.09596 $\pm$ 14.12059
Precip09_SEP (mm)	59.85714	75.27542 $\pm$ 14.70704
Precip10_OCT (mm)	70.17857	93.43771 $\pm$ 28.45319
Precip11_NOV (mm)	121.14286	147.35253 $\pm$ 38.45018
Precip12_DEC (mm)	132.39286	151.46044 $\pm$ 42.16075
PrecipTotal_ANNUAL (mm)	1054.78571	1223.65219 $\pm$ 273.62669
Temp01_JANMax (Degrees Celsius)	-6.03571	-6.88199 $\pm$ 1.93195

## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
Temp01_JANmin (Degrees Celsius)	-12.39286	-13.71414 $\pm$ 2.38881
Temp02_FEBmax (Degrees Celsius)	-3.00000	-3.85034 $\pm$ 2.06368
Temp02_FEBmin (Degrees Celsius)	-10.46429	-11.56330 $\pm$ 2.44788
Temp03_MARmax (Degrees Celsius)	0.46429	0.01768 $\pm$ 2.47627
Temp03_MARmin (Degrees Celsius)	-7.32143	-8.72492 $\pm$ 2.28722
Temp04_APRmax (Degrees Celsius)	4.71429	3.78081 $\pm$ 3.17957
Temp04_APRmin (Degrees Celsius)	-3.71429	-4.54360 $\pm$ 1.94670
Temp05_MAYmax (Degrees Celsius)	9.67857	8.77003 $\pm$ 3.36878
Temp05_MAYmin (Degrees Celsius)	0.00000	-0.39933 $\pm$ 1.33596
Temp06_JUNMax (Degrees Celsius)	13.46429	12.51111 $\pm$ 3.51659
Temp06_JUNMin (Degrees Celsius)	2.82143	2.15774 $\pm$ 1.71410
Temp07_JULmax (Degrees Celsius)	17.21429	15.97172 $\pm$ 3.60230
Temp07_JULmin (Degrees Celsius)	5.25000	4.26852 $\pm$ 1.68829
Temp08_AUGmax (Degrees Celsius)	17.14286	15.95404 $\pm$ 3.61582
Temp08_AUGmin (Degrees Celsius)	4.96429	4.26852 $\pm$ 1.68829
Temp09_SEPmax (Degrees Celsius)	12.07143	10.75690 $\pm$ 3.16095
Temp09_SEPmin (Degrees Celsius)	0.92857	0.82828 $\pm$ 1.34778
Temp10_OCTmax (Degrees Celsius)	5.14286	3.78199 $\pm$ 2.61196
Temp10_OCTmin (Degrees Celsius)	-2.32143	-2.86650 $\pm$ 1.41557
Temp11_NOVmax (Degrees Celsius)	-2.50000	-3.03434 $\pm$ 2.15061
Temp11_NOVmin (Degrees Celsius)	-8.00000	-9.02744 $\pm$ 2.23762
Temp12_DECmax (Degrees Celsius)	-6.57143	-7.12424 $\pm$ 2.04773
Temp12_DECmin (Degrees Celsius)	-12.21429	-13.10724 $\pm$ 2.40381
TempANNUALmax (Degrees Celsius)	4.78571	3.82054 $\pm$ 2.80061
TempANNUALmean (Degrees Celsius)	0.50000	0.08754 $\pm$ 2.10549
TempANNUALmin (Degrees Celsius)	-3.21429	-4.01465 $\pm$ 1.92102
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	1672.70653	248.05797 $\pm$ 212.27501
Perimeter (Km)	335.30656	115.90189 $\pm$ 79.39444
StreamDensity (m/km <sup>2</sup> )	1944.56930	1641.77078 $\pm$ 689.92032
StreamLength (m)	3252693.77	386293.17 $\pm$ 275066.40
<b>Landcover</b>		
Natl-AnnCrops (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Barren (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafOpen (%)	0.24929	1.11783 $\pm$ 1.18871
Natl-BroadleafSparse (%)	0.00000	0.05014 $\pm$ 0.07576
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.43451	6.38699 $\pm$ 4.34837
Natl-ConiferousOpen (%)	54.56044	40.47833 $\pm$ 22.06760
Natl-ConiferousSparse (%)	0.00000	1.22915 $\pm$ 1.10282
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	12.43038	10.56536 $\pm$ 3.88369
Natl-Grassland (%)	1.91214	4.29128 $\pm$ 3.56936
Natl-Herb (%)	5.15613	1.97139 $\pm$ 2.48389
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.02198 $\pm$ 0.03299
Natl-MixedwoodOpen (%)	0.00000	0.99757 $\pm$ 1.29290
Natl-MixedwoodSparse (%)	0.00000	0.00671 $\pm$ 0.01007
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.93014	6.91669 $\pm$ 6.91715
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	5.84600	3.03173 $\pm$ 2.25077
Natl-ShrubTall (%)	0.00000	0.01289 $\pm$ 0.02622
Natl-SnowIce (%)	0.15673	12.85833 $\pm$ 16.61270
Natl-Water (%)	0.78974	0.57284 $\pm$ 0.84888
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.02461	0.00632 $\pm$ 0.00950
Natl-WetlandShrub (%)	0.03719	0.00789 $\pm$ 0.01184
Natl-WetlandTreed (%)	0.00000	0.00063 $\pm$ 0.00125
Reg-Ice (%)	0.05000	11.04418 $\pm$ 12.39512



## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Substrate Data</b>		
%Bedrock (%)	0	1 $\pm$ 2
%Boulder (%)	0	1 $\pm$ 2
%Cobble (%)	66	55 $\pm$ 30
%Gravel (%)	0	2 $\pm$ 2
%Pebble (%)	34	40 $\pm$ 28
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 1
D50 (cm)	8.00	8.05 $\pm$ 3.69
Dg (cm)	7.5	7.5 $\pm$ 3.2
Dominant-1st (Category(0-9))	6	6 $\pm$ 2
Dominant-2nd (Category(0-9))	5	6 $\pm$ 1
Embeddedness (Category(1-5))	4	4 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	3 $\pm$ 1
SurroundingMaterial (Category(0-9))	3	3 $\pm$ 3
<b>Topography</b>		
ElevationMax (m)	2912.00000	3078.00000 $\pm$ 457.09463
ElevationMin (m)	946.00000	930.22222 $\pm$ 360.76162
ElevationStdev (m)	373.06891	413.05115 $\pm$ 88.46112
Reg-SlopeLT30% (%)	17.40000	27.80144 $\pm$ 15.50843
Slope30-50% (%)	28.02316	29.30660 $\pm$ 5.70051
Slope50-60% (%)	14.87296	12.36184 $\pm$ 3.15640
SlopeAvg (%)	52.98414	48.95258 $\pm$ 9.21336
SlopeGT60% (%)	36.47864	29.36303 $\pm$ 11.20971
SlopeLT30% (%)	20.62525	28.96853 $\pm$ 14.39762
SlopeMax (%)	384.10376	415.78743 $\pm$ 182.64978
SlopeMin (%)	0.00000	0.39554 $\pm$ 1.18662
SlopeStdev (%)	27.47387	29.25364 $\pm$ 5.81334
<b>Water Chemistry</b>		
General-Alkalinity (mg/L)	30.5000000	50.0555556 $\pm$ 32.0615467
General-DO (mg/L)	10.3000000	11.4277778 $\pm$ 1.0113454
General-pH (pH)	6.5	7.6 $\pm$ 0.6
General-SpCond ( $\mu$ S/cm)	46.9000000	121.1777778 $\pm$ 70.2563659
General-TempAir (Degrees Celsius)	8.0	4.2
General-TempWater (Degrees Celsius)	6.0000000	5.7844444 $\pm$ 2.4754197
General-Turbidity (NTU)	1.1100000	67.5295000 $\pm$ 95.4176962
Nitrogen-NO2+NO3 (mg/L)	0.0950000	0.0000000 $\pm$ 0.0000000
Phosphorus-OrthoP (mg/L)	0.0025000	0.0002000 $\pm$ 0.0004472

**Site Description**

<b>Study Name</b>	CBWQ-St. Mary
<b>Site</b>	NGSTM01
<b>Sampling Date</b>	Sep 22 2014
<b>Know Your Watershed Basin</b>	Lower Kootenay
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.66971 N, 116.34550 W
<b>Altitude</b>	3307
<b>Local Basin Name</b>	St. Mary River
	St Mary
<b>Stream Order</b>	2



Figure 1. Location Map

Across Reach  
Aerial (No image found)



Down Stream

Field Date: 10/25/17 Site Code: 210-0101  
Sampling Date: 10/25/17

Occupational Health & Safety: Site Inspection Sheet completed

**PRIMARY SITE DATA**

CABIN Study Name: \_\_\_\_\_ Local Basin Name: \_\_\_\_\_  
River/Stream Name: \_\_\_\_\_ Stream Order (map scale 1:50,000): \_\_\_\_\_

Selected one:  Test Site  Potential Reference Site

**Geographical Description/Notes**

Surrounding Land Use (check those present)		Information Source	
<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	
<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 _____

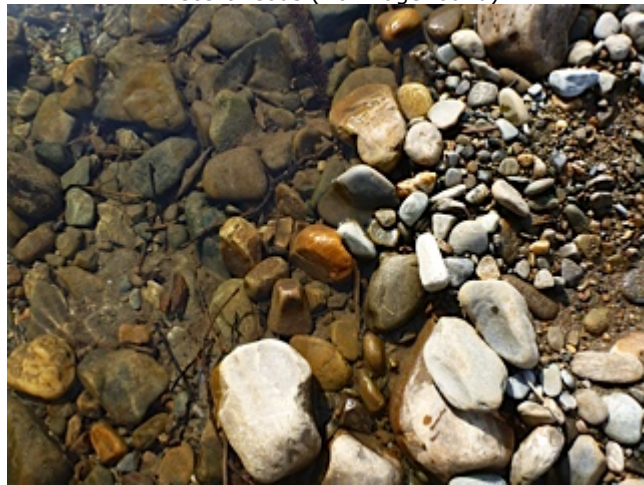
**Location Data**

Latitude: \_\_\_\_\_°N Longitude: \_\_\_\_\_°W (DMS or DD)  
Elevation: \_\_\_\_\_ (ft or m) GPS Datum:  GRS80  NAD83  Other \_\_\_\_\_

Site Location Map Drawing

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>	October 25, 2017				
<b>Taxonomic Level</b>	Family				
<b>Predictive Model Variables</b>	Depth-Avg Latitude Longitude Reg-Ice Reg-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>	74.6%	0.1%	5.1%	18.7%	1.5%
<b>CABIN Assessment of NGSTM01 on Sep 22, 2014</b>	Similar to Reference				

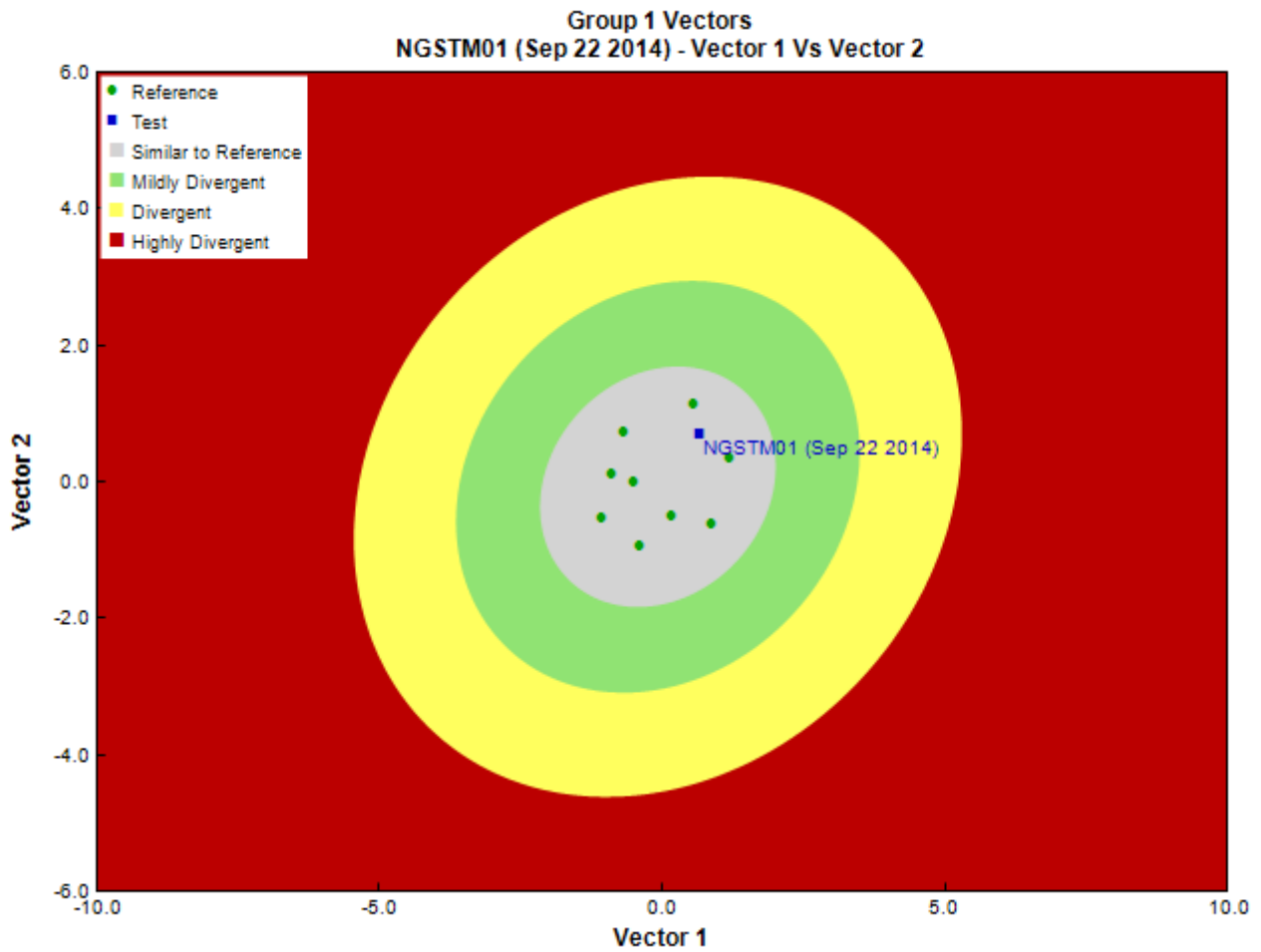


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Pina Viola, Consultant
<b>Date Taxonomy Completed</b>	November 03, 2014
	Marchant Box
<b>Sub-Sample Proportion</b>	28/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	4	14.3
		Insecta	Coleoptera	Elmidae	1
	Diptera			Chironomidae	6
			Psychodidae	1	3.6
			Simuliidae	2	7.1
			Tipulidae	1	3.6
	Ephemeroptera		Ameletidae	2	7.1
			Baetidae	140	500.0
			Ephemerellidae	10	35.7
			Heptageniidae	86	307.1
			Leptophlebiidae	1	3.6
	Plecoptera			1	3.6
			Capniidae	2	7.1
			Nemouridae	2	7.1
			Perlodidae	10	35.7

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Taeniopterygidae	37	132.1
		Trichoptera		2	7.1
			Apataniidae	1	3.6
			Hydropsychidae	1	3.6
			Limnephilidae	1	3.6
			Rhyacophilidae	3	10.7
			Total	314	1,121.3

## Metrics

Name	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Bray-Curtis Distance</b>	0.7	0.4 $\pm$ 0.2
<b>Biotic Indices</b>		
<b>Hilsenhoff Family index (North-West)</b>	3.6	3.3 $\pm$ 0.5
<b>Intolerant taxa</b>	--	1.0
<b>Long-lived taxa</b>	1.0	2.3 $\pm$ 1.5
<b>Tolerant individuals (%)</b>	--	
<b>Functional Measures</b>		
<b>% Filterers</b>	1.0	1.1 $\pm$ 1.5
<b>% Gatherers</b>	19.4	35.2 $\pm$ 11.4
<b>% Predators</b>	8.3	16.9 $\pm$ 7.6
<b>% Scrapers</b>	85.4	60.6 $\pm$ 17.9
<b>% Shredder</b>	14.3	19.4 $\pm$ 13.9
<b>No. Clinger Taxa</b>	20.0	18.6 $\pm$ 4.2
<b>Number Of Individuals</b>		
<b>% Chironomidae</b>	1.9	8.1 $\pm$ 6.9
<b>% Coleoptera</b>	0.3	0.5 $\pm$ 1.7
<b>% Diptera + Non-insects</b>	4.5	11.2 $\pm$ 7.6
<b>% Ephemeroptera</b>	76.8	61.6 $\pm$ 17.6
<b>% Ephemeroptera that are Baetidae</b>	58.6	50.3 $\pm$ 24.0
<b>% EPT Individuals</b>	95.2	88.3 $\pm$ 7.4
<b>% Odonata</b>	--	0.0 $\pm$ 0.0
<b>% of 2 dominant taxa</b>	72.7	59.1 $\pm$ 14.3
<b>% of 5 dominant taxa</b>	91.0	84.1 $\pm$ 7.1
<b>% of dominant taxa</b>	45.0	41.5 $\pm$ 15.1
<b>% Plecoptera</b>	16.4	23.9 $\pm$ 14.1
<b>% Tribe Tanyatarisini</b>	--	
<b>% Trichoptera that are Hydropsychida</b>	16.7	12.9 $\pm$ 23.9
<b>% Tricoptera</b>	1.9	2.8 $\pm$ 2.9
<b>No. EPT individuals/Chironomids+EPT Individuals</b>	1.0	0.9 $\pm$ 0.1
<b>Total Abundance</b>	1121.4	1453.9 $\pm$ 1355.4
<b>Richness</b>		
<b>Chironomidae taxa (genus level only)</b>	1.0	1.0 $\pm$ 0.0
<b>Coleoptera taxa</b>	1.0	0.2 $\pm$ 0.4
<b>Diptera taxa</b>	4.0	2.9 $\pm$ 1.0
<b>Ephemeroptera taxa</b>	5.0	3.6 $\pm$ 0.6
<b>EPT Individuals (Sum)</b>	1057.1	1288.9 $\pm$ 1149.7
<b>EPT taxa (no)</b>	13.0	11.1 $\pm$ 2.1
<b>Odonata taxa</b>	--	0.0 $\pm$ 0.0
<b>Pielou's Evenness</b>	0.6	0.7 $\pm$ 0.1
<b>Plecoptera taxa</b>	4.0	5.1 $\pm$ 1.2
<b>Shannon-Wiener Diversity</b>	1.6	1.8 $\pm$ 0.4
<b>Simpson's Diversity</b>	0.7	0.7 $\pm$ 0.1
<b>Simpson's Evenness</b>	0.2	0.3 $\pm$ 0.1
<b>Total No. of Taxa</b>	19.0	16.3 $\pm$ 3.2
<b>Trichoptera taxa</b>	4.0	2.3 $\pm$ 1.3

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGSTM01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00

### Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NGSTM01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Lebertiidae	78%	65%	39%	58%	5%	0.71
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.81
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Taeniopterygidae	89%	49%	100%	92%	97%	0.90

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	12.31
RIVPACS : Observed taxa P>0.50	12.00
RIVPACS : O:E (p > 0.5)	0.97
RIVPACS : Expected taxa P>0.70	9.87
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	1.01

### Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	14.24221	13.40132 $\pm$ 26.65230
Metamorphic (%)	0.00000	0.73186 $\pm$ 1.11377
Sedimentary (%)	85.73329	85.86682 $\pm$ 26.25895
Ultramafic (%)	0.02450	0.00000 $\pm$ 0.00000
Volcanic (%)	0.00000	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	71.9	39.4 $\pm$ 23.6
Depth-BankfullMinusWetted (cm)	168.00	33.28 $\pm$ 13.75
Depth-Max (cm)	93.0	55.6 $\pm$ 30.6
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	0.67 $\pm$ 1.00
Reach-DomStreamsideVeg (Category (1-4))	2	3 $\pm$ 1
Reach-Pools (Binary)	1	0 $\pm$ 1
Reach-Rapids (Binary)	1	0 $\pm$ 0
Reach-Riffles (Binary)	1	1 $\pm$ 1
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0200000	0.0440367 $\pm$ 0.0734738
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)	0.42	0.64 $\pm$ 0.29
Velocity-Max (m/s)	0.83	0.81 $\pm$ 0.28
Width-Bankfull (m)	54.0	27.7 $\pm$ 17.6
Width-Wetted (m)	24.0	17.6 $\pm$ 11.6
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 1
<b>Climate</b>		
Precip01_JAN (mm)	118.64286	135.62744 $\pm$ 42.73491
Precip02_FEB (mm)	99.39286	109.88064 $\pm$ 33.20254
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TempANNUALmin (Degrees Celsius)	-3.21429	-4.01465 $\pm$ 1.92102
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	1672.70653	248.05797 $\pm$ 212.27501
Perimeter (Km)	335.30656	115.90189 $\pm$ 79.39444
StreamDensity (m/km <sup>2</sup> )	1944.56930	1641.77078 $\pm$ 689.92032
StreamLength (m)	3252693.77	386293.17 $\pm$ 275066.40
<b>Landcover</b>		
Natl-AnnCrops (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Barren (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-BroadleafOpen (%)	0.24929	1.11783 $\pm$ 1.18871
Natl-BroadleafSparse (%)	0.00000	0.05014 $\pm$ 0.07576
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.43451	6.38699 $\pm$ 4.34837
Natl-ConiferousOpen (%)	54.56044	40.47833 $\pm$ 22.06760
Natl-ConiferousSparse (%)	0.00000	1.22915 $\pm$ 1.10282
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	12.43038	10.56536 $\pm$ 3.88369
Natl-Grassland (%)	1.91214	4.29128 $\pm$ 3.56936
Natl-Herb (%)	5.15613	1.97139 $\pm$ 2.48389
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.02198 $\pm$ 0.03299
Natl-MixedwoodOpen (%)	0.00000	0.99757 $\pm$ 1.29290
Natl-MixedwoodSparse (%)	0.00000	0.00671 $\pm$ 0.01007
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.93014	6.91669 $\pm$ 6.91715
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	5.84600	3.03173 $\pm$ 2.25077
Natl-ShrubTall (%)	0.00000	0.01289 $\pm$ 0.02622
Natl-SnowIce (%)	0.15673	12.85833 $\pm$ 16.61270
Natl-Water (%)	0.78974	0.57284 $\pm$ 0.84888
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.02461	0.00632 $\pm$ 0.00950
Natl-WetlandShrub (%)	0.03719	0.00789 $\pm$ 0.01184
Natl-WetlandTreed (%)	0.00000	0.00063 $\pm$ 0.00125
Reg-Ice (%)	0.05000	11.04418 $\pm$ 12.39512



## Habitat Description

Variable	NGSTM01	Predicted Group Reference Mean $\pm$ SD
<b>Substrate Data</b>		
%Bedrock (%)	0	1 $\pm$ 2
%Boulder (%)	0	1 $\pm$ 2
%Cobble (%)	81	55 $\pm$ 30
%Gravel (%)	0	2 $\pm$ 2
%Pebble (%)	19	40 $\pm$ 28
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 1
D50 (cm)	9.00	8.05 $\pm$ 3.69
Dg (cm)	8.7	7.5 $\pm$ 3.2
Dominant-1st (Category(0-9))	6	6 $\pm$ 2
Dominant-2nd (Category(0-9))	5	6 $\pm$ 1
Embeddedness (Category(1-5))	4	4 $\pm$ 1
PeriphytonCoverage (Category(1-5))	3	3 $\pm$ 1
SurroundingMaterial (Category(0-9))	5	3 $\pm$ 3
<b>Topography</b>		
ElevationMax (m)	2912.00000	3078.00000 $\pm$ 457.09463
ElevationMin (m)	946.00000	930.22222 $\pm$ 360.76162
ElevationStdev (m)	373.06891	413.05115 $\pm$ 88.46112
Reg-SlopeLT30% (%)	16.90000	27.80144 $\pm$ 15.50843
Slope30-50% (%)	28.02316	29.30660 $\pm$ 5.70051
Slope50-60% (%)	14.87296	12.36184 $\pm$ 3.15640
SlopeAvg (%)	52.98414	48.95258 $\pm$ 9.21336
SlopeGT60% (%)	36.47864	29.36303 $\pm$ 11.20971
SlopeLT30% (%)	20.62525	28.96853 $\pm$ 14.39762
SlopeMax (%)	384.10376	415.78743 $\pm$ 182.64978
SlopeMin (%)	0.00000	0.39554 $\pm$ 1.18662
SlopeStdev (%)	27.47387	29.25364 $\pm$ 5.81334
<b>Water Chemistry</b>		
General-DO (mg/L)	9.6000000	11.4277778 $\pm$ 1.0113454
General-pH (pH)	6.2	7.6 $\pm$ 0.6
General-SpCond ( $\mu$ S/cm)	52.9000000	121.1777778 $\pm$ 70.2563659
General-TempAir (Degrees Celsius)	15.8	4.2
General-TempWater (Degrees Celsius)	8.5000000	5.7844444 $\pm$ 2.4754197
General-Turbidity (NTU)	1.8000000	67.5295000 $\pm$ 95.4176962