

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Sep 14 2009
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.97944 N, 117.88417 W
<b>Altitude</b>	1446
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5

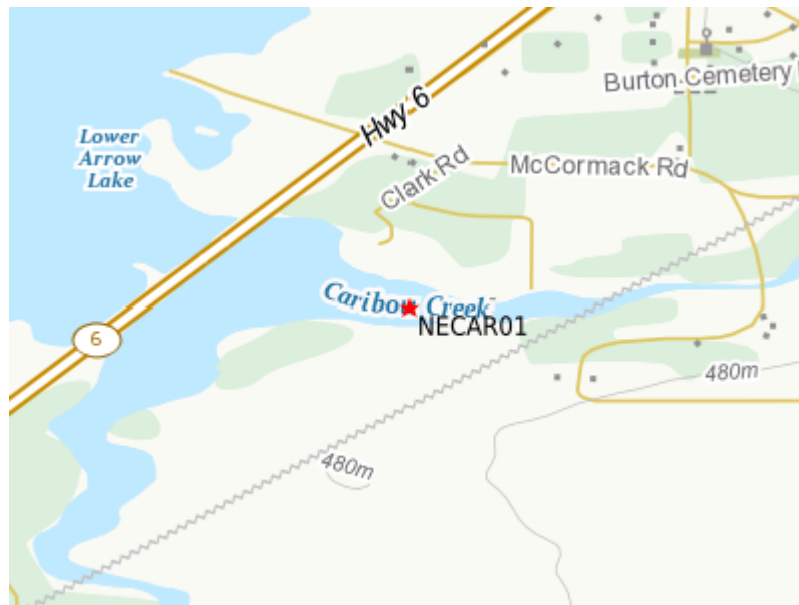


Figure 1. Location Map



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>	August 13, 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>	2.7%	6.9%	7.2%	68.9%	14.3%
<b>CABIN Assessment of NECAR01 on Sep 14, 2009</b>	Similar to Reference				

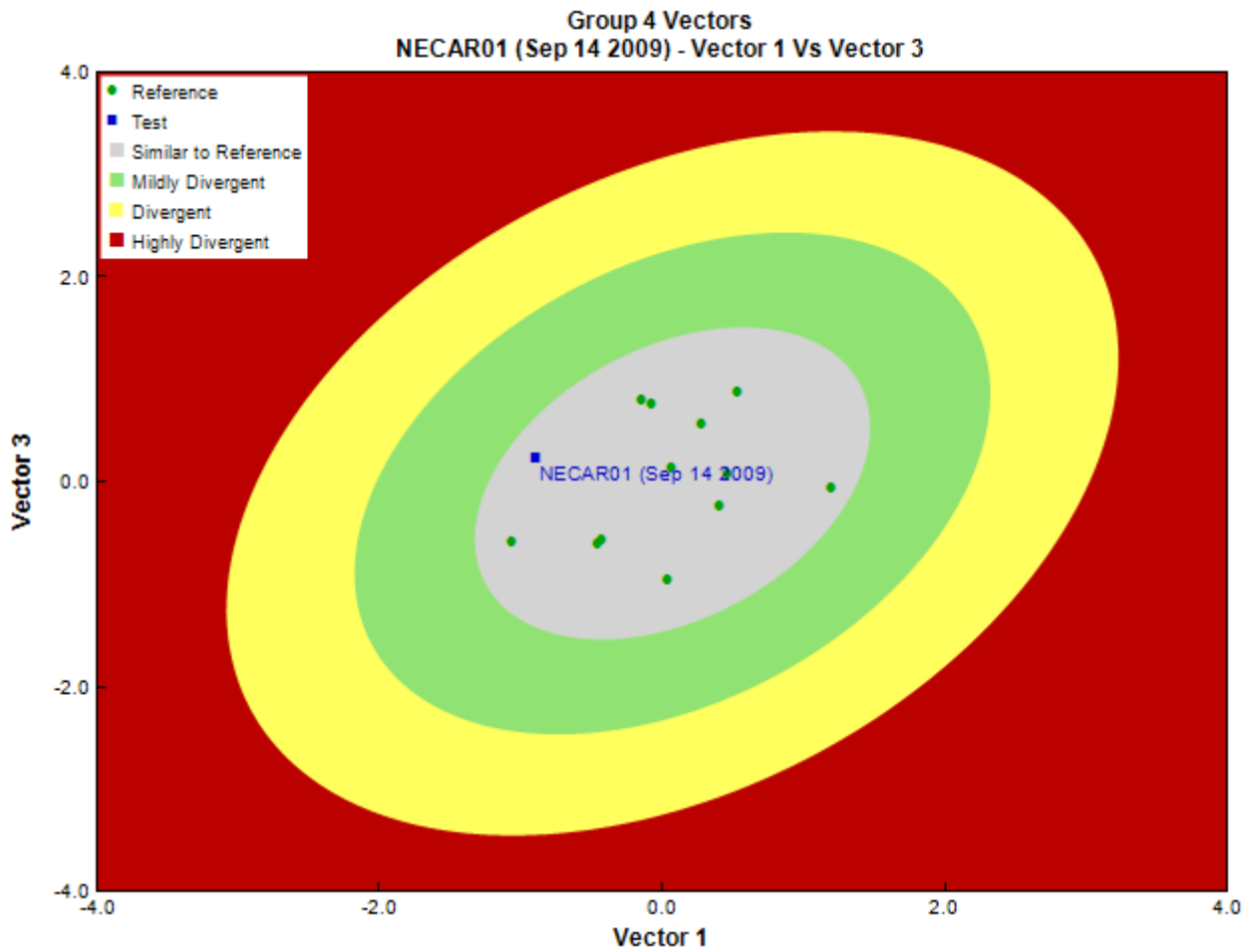


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Eco Analysts, EcoAnalysts
<b>Date Taxonomy Completed</b>	February 26, 2010
	Marchant Box
<b>Sub-Sample Proportion</b>	38/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count		
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	5	13.1		
			Sperchontidae	1	2.6		
	Insecta	Diptera	Ephemeroptera	Ceratopogonidae	1	2.6	
				Chironomidae	48	126.3	
				Empididae	1	2.6	
				Psychodidae	6	15.8	
				Ameletidae	1	2.6	
				Baetidae	137	360.5	
				Ephemerellidae	42	110.5	
				Heptageniidae	53	139.5	
				Leptophlebiidae	1	2.6	
				Plecoptera	Chloroperlidae	3	7.9
					Leuctridae	1	2.6
					Nemouridae	2	5.3
Perlidae	2	5.3					

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlodidae	5	13.1
			Taeniopterygidae	6	15.8
		Trichoptera	Glossosomatidae	1	2.6
			Rhyacophilidae	4	10.5
			Uenoidae	1	2.6
			Total	321	844.4

## Metrics

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.48	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	3.9	3.2 $\pm$ 0.3
Intolerant taxa	--	
Long-lived taxa	1.0	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
% Filterers	--	2.2 $\pm$ 1.8
% Gatherers	34.6	38.4 $\pm$ 12.4
% Predatores	21.8	19.0 $\pm$ 8.5
% Scrapers	62.9	63.2 $\pm$ 19.7
% Shredder	2.8	27.6 $\pm$ 15.2
No. Clinger Taxa	13.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
% Chironomidae	15.0	7.4 $\pm$ 6.4
% Coleoptera	0.0	1.5 $\pm$ 3.9
% Diptera + Non-insects	19.3	10.8 $\pm$ 7.6
% Ephemeroptera	72.9	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	58.5	40.6 $\pm$ 30.0
% EPT Individuals	80.7	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	59.2	57.9 $\pm$ 14.2
% of 5 dominant taxa	89.1	81.6 $\pm$ 7.9
% of dominant taxa	42.7	39.8 $\pm$ 14.9
% Plecoptera	5.9	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	0.0	27.0 $\pm$ 26.2
% Tricoptera	1.9	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.8	0.9 $\pm$ 0.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	0.0	0.4 $\pm$ 0.5
Diptera taxa	4.0	3.3 $\pm$ 1.0
Ephemeroptera taxa	5.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	681.5	526.0 $\pm$ 285.8
EPT taxa (no)	14.0	13.3 $\pm$ 2.7

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.82
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	100%	100%	100%	100%	0.99
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.88
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.78
Perlodidae	78%	78%	89%	92%	81%	0.89
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.90

## RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	14.07
RIVPACS : Observed taxa P>0.50	14.00
RIVPACS : O:E (p > 0.5)	1.00
RIVPACS : Expected taxa P>0.70	11.22
RIVPACS : Observed taxa P>0.70	10.00
RIVPACS : O:E (p > 0.7)	0.89

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	36.0	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	52.00	51.38 $\pm$ 29.42
Depth-Max (cm)	53.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	1.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	3	4 $\pm$ 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)	0.0099000	0.0546683 $\pm$ 0.0376269
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)	0.76	0.48 $\pm$ 0.22
Velocity-Max (m/s)	1.57	0.76 $\pm$ 0.36
Width-Bankfull (m)	19.6	13.4 $\pm$ 9.9
Width-Wetted (m)	10.4	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
Reg-NonprodForest (%)	30.00000	0.00000 $\pm$ 0.00000
Reg-Urban (%)	70.00000	0.00000 $\pm$ 0.00000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	2	9 $\pm$ 9
%Cobble (%)	58	51 $\pm$ 15
%Gravel (%)	12	3 $\pm$ 3
%Pebble (%)	27	37 $\pm$ 20
%Sand (%)	1	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
D50 (cm)	7.45	15.12 $\pm$ 14.26
Dg (cm)	5.7	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	5	7 $\pm$ 1
Embeddedness (Category(1-5))	4	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	3	1 $\pm$ 0
SurroundingMaterial (Category(0-9))	6	4 $\pm$ 1
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	439.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	415.94583	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	20.21000	18.88386 $\pm$ 9.29866
Slope30-50% (%)	28.63164	29.00215 $\pm$ 6.33837
Slope50-60% (%)	15.79183	13.91808 $\pm$ 1.91315
SlopeAvg (%)	50.07479	52.79851 $\pm$ 8.68755
SlopeGT60% (%)	33.33831	35.47207 $\pm$ 13.39684
SlopeLT30% (%)	22.23822	21.60770 $\pm$ 8.54172
SlopeMax (%)	215.77939	298.94390 $\pm$ 146.30679
SlopeMin (%)	0.00000	0.19777 $\pm$ 0.29213
SlopeStdev (%)	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
Ag (mg/L)	0.0000100	0.0000050
Al (mg/L)	0.0048000	0.0049000
As (mg/L)	0.0014000	0.0002700
B (mg/L)	0.0500000	0.0500000
Ba (mg/L)	0.0150000	0.0682000
Be (mg/L)	0.0005000	0.0000100
Bi (mg/L)	0.0005000	0.0000050
Ca (mg/L)	18.3000000	21.1083333 $\pm$ 16.8005659
Cd (mg/L)	0.0000300	0.0000050
Co (mg/L)	0.0002500	0.0000100
Cr (mg/L)	0.0005000	0.0001000
Cu (mg/L)	0.0006000	0.0001000
Fe (mg/L)	0.0600000	0.0080000
General-Alkalinity (mg/L)	48.0000000	71.7000000 $\pm$ 53.9231440
General-Conductivity ( $\mu$ S/cm)	108.0000000	121.8083333 $\pm$ 87.6800844
General-Hardness (mg/L)	52.1000000	84.2750000 $\pm$ 70.6251066
General-pH (pH)	7.9	7.9 $\pm$ 0.4
General-SolidsTSS (mg/L)	2.0000000	0.8849836 $\pm$ 1.2378575
General-TempAir (Degrees Celsius)	22.1	26.0
General-TempWater (Degrees Celsius)	12.6000000	7.3183333 $\pm$ 2.7240839
Hg (ng/L)	0.0100000	0.0000000 $\pm$ 0.0000000
K (mg/L)	1.3800000	0.6141667 $\pm$ 0.4056971
Li (mg/L)	0.0025000	0.0011000
Mg (mg/L)	1.5800000	7.6666667 $\pm$ 7.9748848
Mn (mg/L)	0.0030000	0.0006100
Mo (mg/L)	0.0020000	0.0006900
Na (mg/L)	1.5300000	1.5383333 $\pm$ 1.2751459
Ni (mg/L)	0.0010000	0.0003000
Nitrogen-TN (mg/L)	0.1300000	0.0883333 $\pm$ 0.0521943
Pb (mg/L)	0.0002000	0.0000520
Phosphorus-TP (mg/L)	0.0100000	0.0045833 $\pm$ 0.0049992
S (mg/L)	7.0000000	5.0000000
Se (mg/L)	0.0006000	0.0001200
Si (mg/L)	4.6700000	3.1516667 $\pm$ 1.2277017
Sn (mg/L)	0.0025000	0.0000100
Sr (mg/L)	0.0910000	0.0443000
Ti (mg/L)	0.0025000	0.0005000
Tl (mg/L)	0.0250000	0.0000020
U (mg/L)	0.0004000	0.0011700
V (mg/L)	0.0025000	0.0002000
Zn (mg/L)	0.0025000	0.0010000



**Habitat Description**

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Zr (mg/L)	0.0002500	0.0000000 $\pm$ 0.0000000

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Oct 03 2010
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.98750 N, 117.89167 W
<b>Altitude</b>	1446
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5

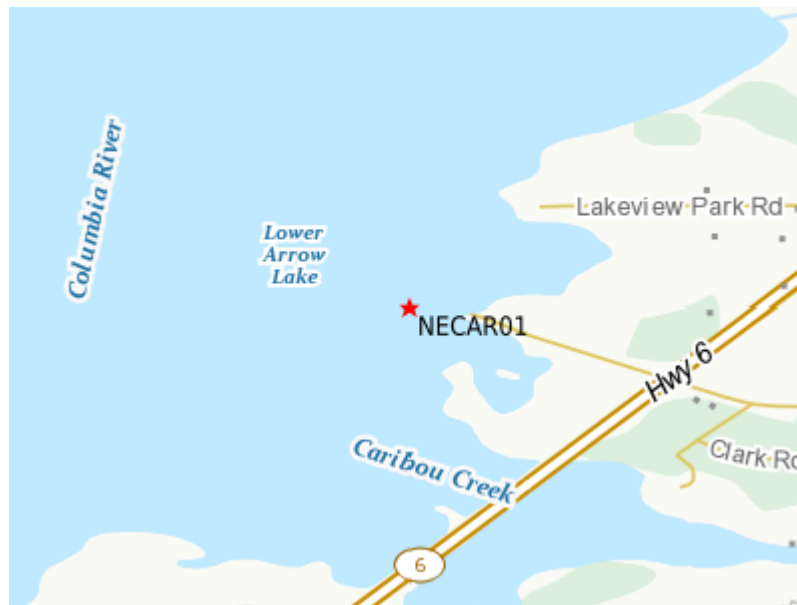
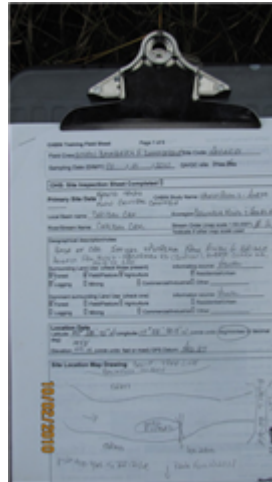


Figure 1. Location Map

Across Reach  
Aerial (No image found)



Down Stream



Field Sheet

Miscellaneous (No image found)



Substrate



Up Stream

**Cabin Assessment Results**

**Reference Model Summary**

**Cabin Assessment Results**

<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	August 13, 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>	1.8%	7.4%	7.3%	68.6%	14.9%
<b>CABIN Assessment of NECAR01 on Oct 03, 2010</b>	Mildly Divergent				

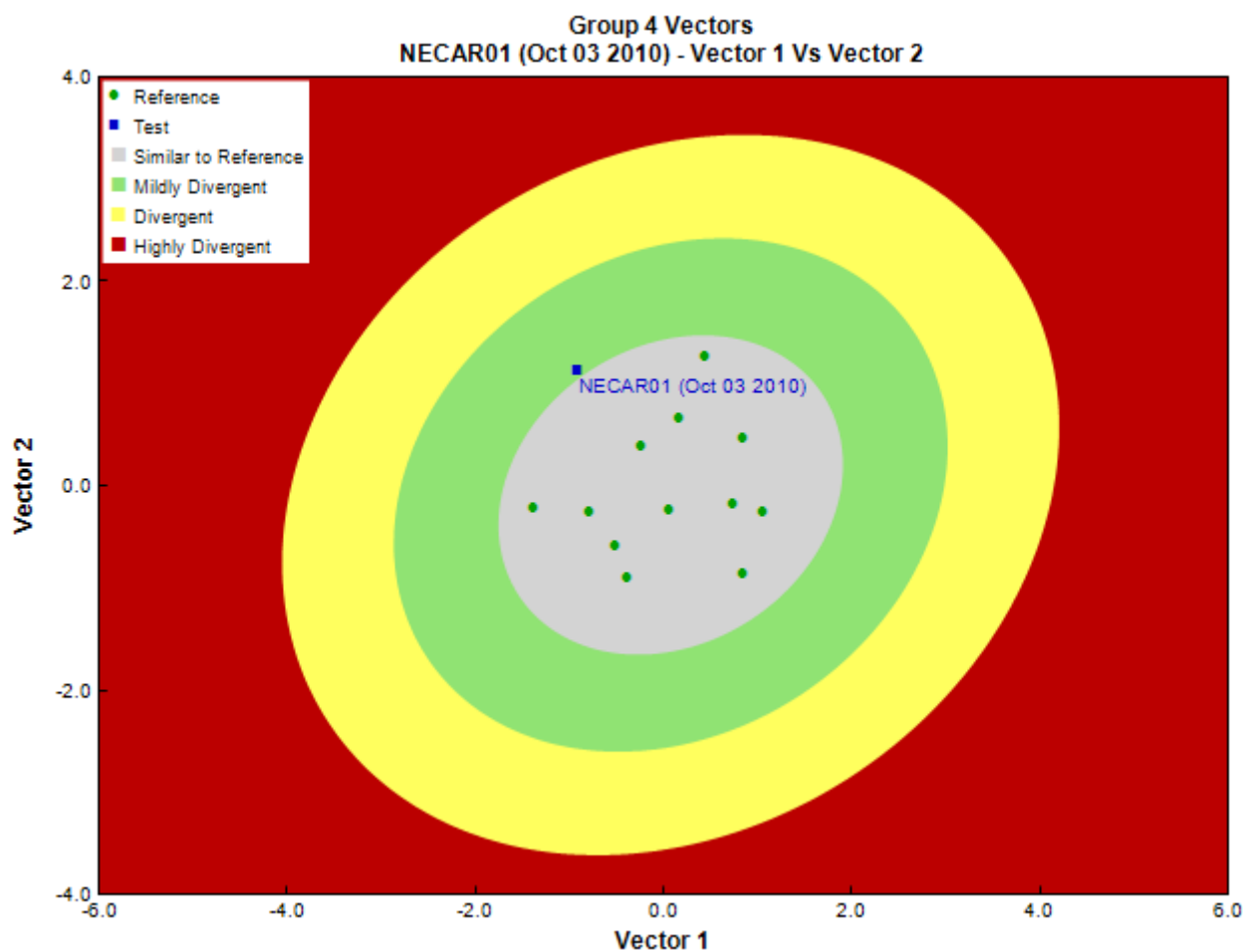


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

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

## Sample Information

<b>Sub-Sample Proportion</b>	45/100
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## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Tubificida	Naididae	2	4.4
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	2	4.4
			Lebertiidae	6	13.3
	Insecta	Diptera	Chironomidae	191	424.4
			Empididae	1	2.2
			Psychodidae	5	11.1
			Tipulidae	1	2.2
		Ephemeroptera	Ameletidae	1	2.2
			Baetidae	74	164.4
			Ephemerellidae	11	24.4
			Heptageniidae	25	55.5
		Plecoptera	Capniidae	3	6.7
			Chloroperlidae	46	102.2
			Leuctridae	1	2.2
			Nemouridae	3	6.7
			Perlodidae	6	13.3
			Taeniopterygidae	5	11.1
		Trichoptera	Glossosomatidae	1	2.2
			Lepidostomatidae	2	4.4
			Total	386	857.3

## Metrics

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bray-Curtis Distance</b>	0.59	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
<b>Hilsenhoff Family index (North-West)</b>	4.6	3.2 $\pm$ 0.3
<b>Intolerant taxa</b>	--	
<b>Long-lived taxa</b>	--	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
<b>% Filterers</b>	--	2.2 $\pm$ 1.8
<b>% Gatherers</b>	68.7	38.4 $\pm$ 12.4
<b>% Predatores</b>	65.3	19.0 $\pm$ 8.5
<b>% Scrapers</b>	39.1	63.2 $\pm$ 19.7
<b>% Shredder</b>	3.9	27.6 $\pm$ 15.2
<b>No. Clinger Taxa</b>	11.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
<b>% Chironomidae</b>	49.5	7.4 $\pm$ 6.4
<b>% Coleoptera</b>	0.0	1.5 $\pm$ 3.9
<b>% Diptera + Non-insects</b>	53.9	10.8 $\pm$ 7.6
<b>% Ephemeroptera</b>	28.8	51.7 $\pm$ 18.8
<b>% Ephemeroptera that are Baetidae</b>	66.7	40.6 $\pm$ 30.0
<b>% EPT Individuals</b>	46.1	87.7 $\pm$ 7.4
<b>% Odonata</b>	--	0.0 $\pm$ 0.0
<b>% of 2 dominant taxa</b>	68.7	57.9 $\pm$ 14.2
<b>% of 5 dominant taxa</b>	89.9	81.6 $\pm$ 7.9
<b>% of dominant taxa</b>	49.5	39.8 $\pm$ 14.9
<b>% Plecoptera</b>	16.6	31.4 $\pm$ 15.4
<b>% Tribe Tanyatarisini</b>	--	
<b>% Trichoptera that are Hydropsychida</b>	0.0	27.0 $\pm$ 26.2
<b>% Tricoptera</b>	0.8	4.5 $\pm$ 2.8
<b>No. EPT individuals/Chironomids+EPT Individuals</b>	0.5	0.9 $\pm$ 0.1
<b>Richness</b>		
<b>Chironomidae taxa (genus level only)</b>	1.0	1.0 $\pm$ 0.0
<b>Coleoptera taxa</b>	0.0	0.4 $\pm$ 0.5
<b>Diptera taxa</b>	4.0	3.3 $\pm$ 1.0
<b>Ephemeroptera taxa</b>	4.0	3.8 $\pm$ 0.8
<b>EPT Individuals (Sum)</b>	395.5	526.0 $\pm$ 285.8

**Metrics**

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
EPT taxa (no)	12.0	13.3 $\pm$ 2.7

**Frequency and Probability of Taxa Occurrence**

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.82
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.88
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.78
Perlodidae	78%	78%	89%	92%	81%	0.89
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.90

**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	11.22
RIVPACS : Observed taxa P>0.70	9.00
RIVPACS : O:E (p > 0.7)	0.80

**Habitat Description**

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	33.3	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	54.00	51.38 $\pm$ 29.42
Depth-Max (cm)	40.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	0.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	1	4 $\pm$ 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)	0	1 $\pm$ 1
Slope (m/m)	0.0019952	0.0546683 $\pm$ 0.0376269
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)	0.65	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.89	0.76 $\pm$ 0.36
Width-Bankfull (m)	30.0	13.4 $\pm$ 9.9
Width-Wetted (m)	22.0	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Sediment Chemistry</b>		
Ag (ppm)	0.120	0.000
Al (ppm)	9570.000	0.005
As (ppm)	17.700	0.000
Ba (ppm)	62.600	0.068
Be (ppm)	0.300	0.000
Bi (ppm)	0.050	0.000
Ca (ppm)	3650.000	21.108 $\pm$ 16.801
Cd (ppm)	0.470	0.000
Co (ppm)	5.900	0.000
Cr (ppm)	17.000	0.000
Cu (ppm)	15.000	0.000
Fe (ppm)	21900.000	0.008
Hg (ppm)	0.025	0.000 $\pm$ 0.000
K (ppm)	1560.000	0.614 $\pm$ 0.406
Li (ppm)	18.000	0.001
Mg (ppm)	6590.000	7.667 $\pm$ 7.975
Mn (ppm)	306.000	0.001
Mo (ppm)	0.900	0.001
Na (ppm)	134.000	1.538 $\pm$ 1.275
Ni (ppm)	14.200	0.000
Pb (ppm)	9.700	0.000
Sb (ppm)	0.300	0.000
Se (ppm)	0.600	0.000
Sn (ppm)	0.200	0.000
Sr (ppm)	23.800	0.044
Ti (ppm)	621.000	0.001
Tl (ppm)	0.120	0.000
TP (ppm)	905.000	0.000 $\pm$ 0.000
U (ppm)	0.810	0.001
V (ppm)	43.000	0.000
Zn (ppm)	68.000	0.001
Zr (ppm)	0.600	0.000 $\pm$ 0.000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	2	9 $\pm$ 9
%Cobble (%)	73	51 $\pm$ 15
%Gravel (%)	1	3 $\pm$ 3
%Pebble (%)	24	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0
D50 (cm)	9.35	15.12 $\pm$ 14.26
Dg (cm)	8.3	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	7	7 $\pm$ 1
Embeddedness (Category(1-5))	4	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	3	1 $\pm$ 0
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023



**Habitat Description**

<b>Variable</b>	<b>NECAR01</b>	<b>Predicted Group Reference Mean <math>\pm</math>SD</b>
<b>ElevationMin (m)</b>	439.00000	913.41667 $\pm$ 271.25180
<b>ElevationStdev (m)</b>	415.94583	349.02363 $\pm$ 92.12445
<b>Reg-SlopeLT30% (%)</b>	20.21000	18.88386 $\pm$ 9.29866
<b>Slope30-50% (%)</b>	28.63164	29.00215 $\pm$ 6.33837
<b>Slope50-60% (%)</b>	15.79183	13.91808 $\pm$ 1.91315
<b>SlopeAvg (%)</b>	50.07479	52.79851 $\pm$ 8.68755
<b>SlopeGT60% (%)</b>	33.33831	35.47207 $\pm$ 13.39684
<b>SlopeLT30% (%)</b>	22.23822	21.60770 $\pm$ 8.54172
<b>SlopeMax (%)</b>	215.77939	298.94390 $\pm$ 146.30679
<b>SlopeMin (%)</b>	0.00000	0.19777 $\pm$ 0.29213
<b>SlopeStdev (%)</b>	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
<b>General-Alkalinity (mg/L)</b>	38.0000000	71.7000000 $\pm$ 53.9231440
<b>General-DO (mg/L)</b>	10.0000000	11.4175000 $\pm$ 0.7986708
<b>General-pH (pH)</b>	7.6	7.9 $\pm$ 0.4
<b>General-SpCond (<math>\mu</math>S/cm)</b>	94.8000000	168.9833333 $\pm$ 123.7858182
<b>General-TempAir (Degrees Celsius)</b>	14.0	26.0
<b>General-TempWater (Degrees Celsius)</b>	9.1000000	7.3183333 $\pm$ 2.7240839
<b>General-Turbidity (NTU)</b>	0.4700000	0.2020000
<b>Nitrogen-NO2 (mg/L)</b>	0.0025000	0.0027500 $\pm$ 0.0062831
<b>Nitrogen-NO2+NO3 (mg/L)</b>	0.0700000	0.0690000
<b>Nitrogen-NO3 (mg/L)</b>	0.0700000	0.0546667 $\pm$ 0.0498148
<b>Phosphorus-OrthoP (mg/L)</b>	0.0025000	0.0002727 $\pm$ 0.0004671

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Oct 10 2011
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.97944 N, 117.88417 W
<b>Altitude</b>	1450
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5

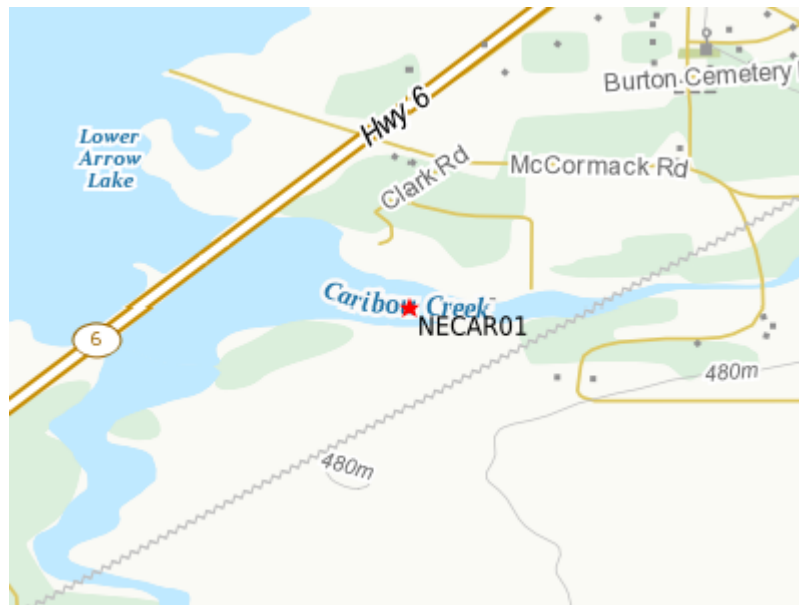


Figure 1. Location Map



Across Reach  
Aerial (No image found)



Down Stream



Field Sheet  
Miscellaneous (No image found)



Substrate



Up Stream

### Cabin Assessment Results

Reference Model Summary	
<b>Model</b>	Columbia-Okanagan Preliminary March 2010
<b>Analysis Date</b>	August 13, 2017
<b>Taxonomic Level</b>	Family

**Cabin Assessment Results**

<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>	0.4%	8.9%	7.7%	67.2%	15.9%
<b>CABIN Assessment of NECAR01 on Oct 10, 2011</b>	Mildly Divergent				

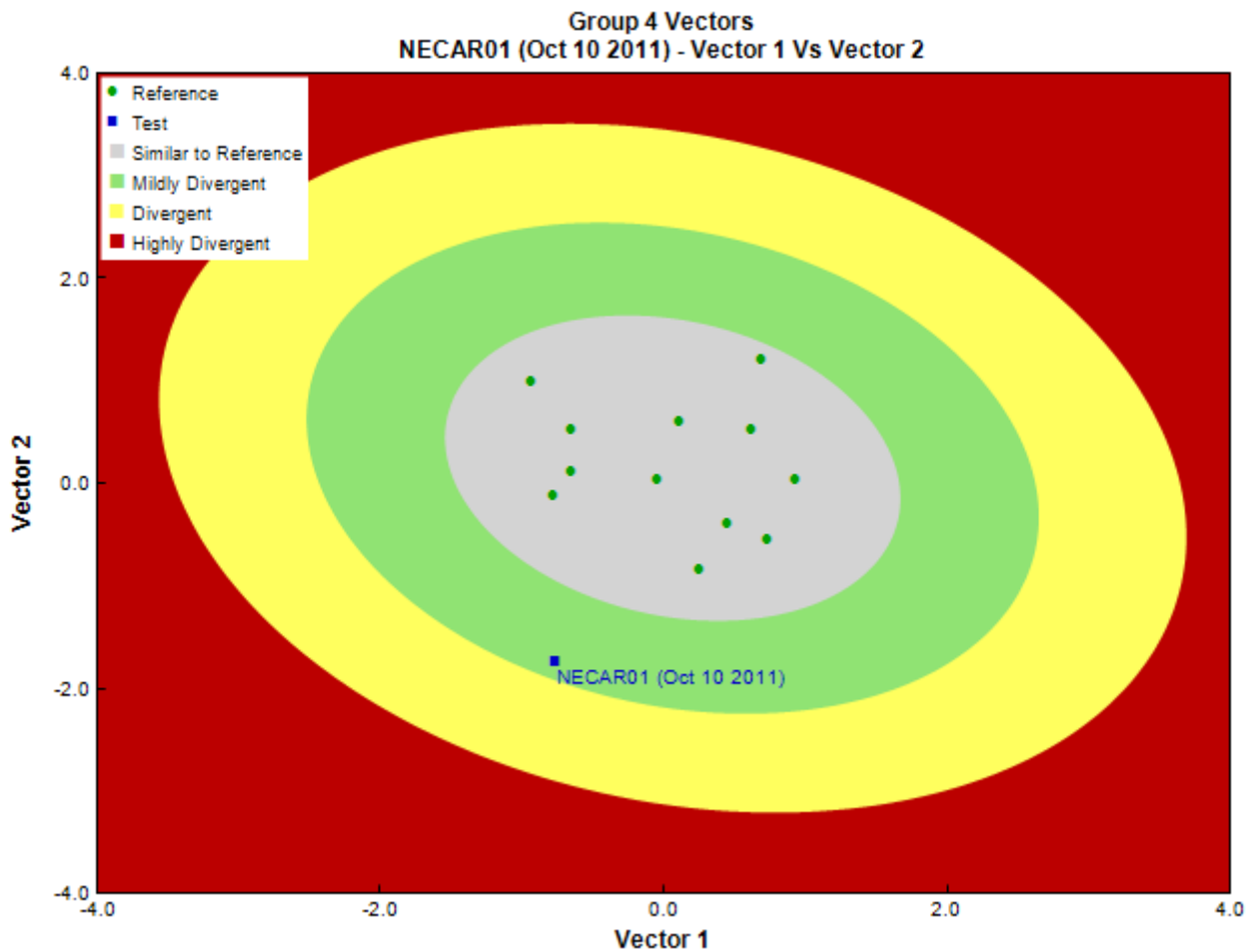


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Eco Analyts, EcoAnalysts
<b>Date Taxonomy Completed</b>	January 27, 2011
	Marchant Box
<b>Sub-Sample Proportion</b>	5/100

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	3	60.0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	4	80.0
			Sperchontidae	1	20.0
			Torrenticolidae	1	20.0
	Insecta	Coleoptera	Elmidae	1	20.0
		Diptera	Ceratopogonidae	2	40.0
			Chironomidae	153	3,060.0
			Psychodidae	1	20.0
			Tipulidae	2	40.0
		Ephemeroptera	Baetidae	12	240.0
			Ephemerellidae	26	520.0
			Heptageniidae	36	720.0
		Plecoptera	Capniidae	35	700.0
			Chloroperlidae	10	200.0
			Leuctridae	4	80.0
			Nemouridae	30	600.0
			Taeniopterygidae	14	280.0
		Trichoptera	Rhyacophilidae	2	40.0
			Total	337	6,740.0

## Metrics

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.87	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	4.1	3.2 $\pm$ 0.3
Intolerant taxa	--	
Long-lived taxa	1.0	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
% Filterers	--	2.2 $\pm$ 1.8
% Gatherers	71.8	38.4 $\pm$ 12.4
% Predatores	51.3	19.0 $\pm$ 8.5
% Scrapers	22.3	63.2 $\pm$ 19.7
% Shredder	25.5	27.6 $\pm$ 15.2
No. Clinger Taxa	10.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
% Chironomidae	45.4	7.4 $\pm$ 6.4
% Coleoptera	0.3	1.5 $\pm$ 3.9
% Diptera + Non-insects	49.6	10.8 $\pm$ 7.6
% Ephemeroptera	22.0	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	16.2	40.6 $\pm$ 30.0
% EPT Individuals	50.1	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	56.1	57.9 $\pm$ 14.2
% of 5 dominant taxa	83.1	81.6 $\pm$ 7.9
% of dominant taxa	45.4	39.8 $\pm$ 14.9
% Plecoptera	27.6	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	0.0	27.0 $\pm$ 26.2
% Tricoptera	0.6	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.5	0.9 $\pm$ 0.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	1.0	0.4 $\pm$ 0.5
Diptera taxa	4.0	3.3 $\pm$ 1.0
Ephemeroptera taxa	3.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	3380.0	526.0 $\pm$ 285.8
EPT taxa (no)	9.0	13.3 $\pm$ 2.7

### Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.81
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	100%	100%	100%	100%	1.00
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.90
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.78
Perlodidae	78%	78%	89%	92%	81%	0.88
Rhyacophilidae	100%	92%	100%	100%	95%	0.98
Taeniopterygidae	89%	49%	100%	92%	97%	0.89

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.56
RIVPACS : Observed taxa P>0.50	11.00
RIVPACS : O:E (p > 0.5)	0.81
RIVPACS : Expected taxa P>0.70	11.22
RIVPACS : Observed taxa P>0.70	9.00
RIVPACS : O:E (p > 0.7)	0.80

### Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	24.0	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	78.00	51.38 $\pm$ 29.42
Depth-Max (cm)	39.5	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	0.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	2	4 $\pm$ 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)	0.1259600	0.0546683 $\pm$ 0.0376269
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)	0.64	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.89	0.76 $\pm$ 0.36
Width-Bankfull (m)	40.0	13.4 $\pm$ 9.9
Width-Wetted (m)	17.7	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Sediment Chemistry</b>		
Ag (ppm)	0.150	0.000
Al (ppm)	7490.000	0.005
As (ppm)	12.600	0.000
Ba (ppm)	50.900	0.068
Be (ppm)	0.200	0.000
Bi (ppm)	0.050	0.000
Ca (ppm)	2710.000	21.108 $\pm$ 16.801
Cd (ppm)	0.490	0.000
Co (ppm)	4.600	0.000
Cr (ppm)	9.000	0.000
Cu (ppm)	10.400	0.000
Fe (ppm)	16900.000	0.008
Hg (ppm)	0.025	0.000 $\pm$ 0.000
K (ppm)	1130.000	0.614 $\pm$ 0.406
Li (ppm)	16.000	0.001
Mg (ppm)	4180.000	7.667 $\pm$ 7.975
Mn (ppm)	282.000	0.001
Mo (ppm)	1.300	0.001
Na (ppm)	50.000	1.538 $\pm$ 1.275
Ni (ppm)	9.100	0.000
Pb (ppm)	5.300	0.000
Sb (ppm)	0.400	0.000
Se (ppm)	0.250	0.000
Sn (ppm)	0.100	0.000
Sr (ppm)	16.000	0.044
Ti (ppm)	417.000	0.001
Tl (ppm)	0.100	0.000
TP (ppm)	658.000	0.000 $\pm$ 0.000
U (ppm)	0.550	0.001
V (ppm)	32.000	0.000
Zn (ppm)	60.000	0.001
Zr (ppm)	0.600	0.000 $\pm$ 0.000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	0	9 $\pm$ 9
%Cobble (%)	55	51 $\pm$ 15
%Gravel (%)	0	3 $\pm$ 3
%Pebble (%)	45	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0
D50 (cm)	6.70	15.12 $\pm$ 14.26
Dg (cm)	6.7	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	5	7 $\pm$ 1
Embeddedness (Category(1-5))	3	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	1 $\pm$ 0
SurroundingMaterial (Category(0-9))	6	4 $\pm$ 1
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	439.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	415.94583	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	20.21000	18.88386 $\pm$ 9.29866
Slope30-50% (%)	28.63164	29.00215 $\pm$ 6.33837
Slope50-60% (%)	15.79183	13.91808 $\pm$ 1.91315



**Habitat Description**

<b>Variable</b>	<b>NECAR01</b>	<b>Predicted Group Reference Mean <math>\pm</math>SD</b>
<b>SlopeAvg (%)</b>	50.07479	52.79851 $\pm$ 8.68755
<b>SlopeGT60% (%)</b>	33.33831	35.47207 $\pm$ 13.39684
<b>SlopeLT30% (%)</b>	22.23822	21.60770 $\pm$ 8.54172
<b>SlopeMax (%)</b>	215.77939	298.94390 $\pm$ 146.30679
<b>SlopeMin (%)</b>	0.00000	0.19777 $\pm$ 0.29213
<b>SlopeStdev (%)</b>	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
<b>General-Alkalinity (mg/L)</b>	37.0000000	71.7000000 $\pm$ 53.9231440
<b>General-DO (mg/L)</b>	10.0000000	11.4175000 $\pm$ 0.7986708
<b>General-pH (pH)</b>	7.2	7.9 $\pm$ 0.4
<b>General-SpCond (<math>\mu</math>S/cm)</b>	120.2000000	168.9833333 $\pm$ 123.7858182
<b>General-TempAir (Degrees Celsius)</b>	6.9	26.0
<b>General-TempWater (Degrees Celsius)</b>	8.8000000	7.3183333 $\pm$ 2.7240839
<b>General-Turbidity (NTU)</b>	0.4000000	0.2020000
<b>Nitrogen-NO2 (mg/L)</b>	0.0025000	0.0027500 $\pm$ 0.0062831
<b>Nitrogen-NO2+NO3 (mg/L)</b>	0.0100000	0.0690000
<b>Nitrogen-NO3 (mg/L)</b>	0.0100000	0.0546667 $\pm$ 0.0498148
<b>Phosphorus-OrthoP (mg/L)</b>	0.0025000	0.0002727 $\pm$ 0.0004671

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Oct 01 2012
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.97944 N, 117.88417 W
<b>Altitude</b>	1450
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5

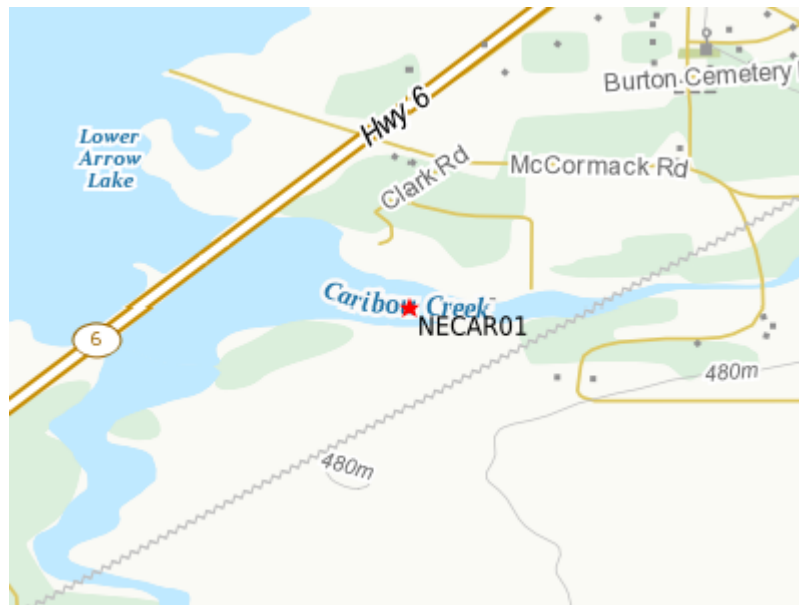


Figure 1. Location Map



Across Reach



Aerial



Down Stream

A handwritten field sheet on a blue background. The sheet contains several sections with checkboxes and handwritten text. The sections include:

- Occupational Health & Safety, Site Inspection Sheet (continued)**
- PROPERTY SITE DATA**: Includes site name, location, and stream name.
- Geographical Designation/Use**: Includes site use and information source.
- Land Use**: Includes land use type and information source.
- Location Data**: Includes latitude, longitude, and stream name.
- Site Location Map Drawing**: A hand-drawn map showing the site location relative to a road and a 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>	August 13, 2017
<b>Taxonomic Level</b>	Family

**Cabin Assessment Results**

<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>	1.0%	7.8%	7.4%	68.6%	15.2%
<b>CABIN Assessment of NECAR01 on Oct 01, 2012</b>	Mildly Divergent				

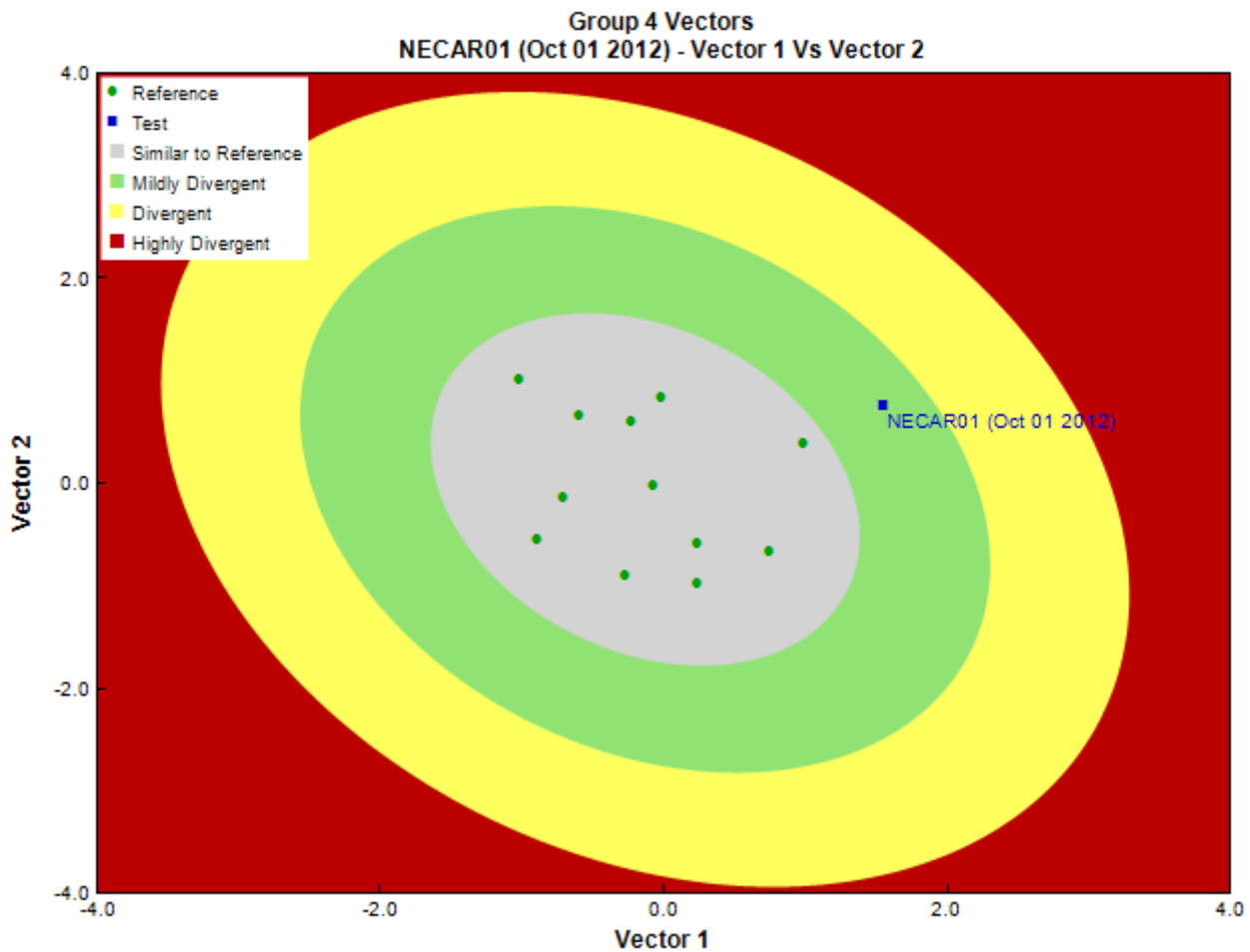


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Eco Analyts, EcoAnalysts
<b>Date Taxonomy Completed</b>	February 11, 2013
	Marchant Box
<b>Sub-Sample Proportion</b>	6/100

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	1	16.7
			Torrenticolidae	1	16.7
	Insecta	Diptera	Chironomidae	220	3,666.7
			Simuliidae	6	100.0
		Ephemeroptera	Baetidae	20	333.3
			Ephemerellidae	7	116.7
			Heptageniidae	40	666.7
		Plecoptera	Chloroperlidae	6	100.0
			Leuctridae	1	16.7
			Nemouridae	21	350.0
			Taeniopterygidae	59	983.3
		Trichoptera	Rhyacophilidae	3	50.0
			Total	385	6,416.8

## Metrics

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.87	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	4.6	3.2 $\pm$ 0.3
Intolerant taxa	--	
Long-lived taxa	--	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
% Filterers	1.6	2.2 $\pm$ 1.8
% Gatherers	81.3	38.4 $\pm$ 12.4
% Predatores	61.6	19.0 $\pm$ 8.5
% Scrapers	34.0	63.2 $\pm$ 19.7
% Shredder	21.0	27.6 $\pm$ 15.2
No. Clinger Taxa	9.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
% Chironomidae	57.1	7.4 $\pm$ 6.4
% Coleoptera	0.0	1.5 $\pm$ 3.9
% Diptera + Non-insects	59.2	10.8 $\pm$ 7.6
% Ephemeroptera	17.4	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	29.9	40.6 $\pm$ 30.0
% EPT Individuals	40.8	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	72.5	57.9 $\pm$ 14.2
% of 5 dominant taxa	93.5	81.6 $\pm$ 7.9
% of dominant taxa	57.1	39.8 $\pm$ 14.9
% Plecoptera	22.6	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	0.0	27.0 $\pm$ 26.2
% Tricoptera	0.8	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.4	0.9 $\pm$ 0.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	0.0	0.4 $\pm$ 0.5
Diptera taxa	2.0	3.3 $\pm$ 1.0
Ephemeroptera taxa	3.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	2616.6	526.0 $\pm$ 285.8
EPT taxa (no)	8.0	13.3 $\pm$ 2.7

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.82
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.98
Ephemerellidae	78%	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 NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.89
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.78
Perlodidae	78%	78%	89%	92%	81%	0.89
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.90

### RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.58
RIVPACS : Observed taxa P>0.50	9.00
RIVPACS : O:E (p > 0.5)	0.66
RIVPACS : Expected taxa P>0.70	11.23
RIVPACS : Observed taxa P>0.70	8.00
RIVPACS : O:E (p > 0.7)	0.71

### Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	29.8	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	29.83	51.38 $\pm$ 29.42
Depth-Max (cm)	44.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	0.00	1.33 $\pm$ 0.78
Reach-%Logging (PercentRange)	0	0 $\pm$ 0
Reach-DomStreamsideVeg (Category (1-4))	2	4 $\pm$ 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)	0.0036000	0.0546683 $\pm$ 0.0376269
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)	0.56	0.48 $\pm$ 0.22
Velocity-Max (m/s)	1.17	0.76 $\pm$ 0.36
Width-Bankfull (m)	30.0	13.4 $\pm$ 9.9
Width-Wetted (m)	11.0	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193



## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Sediment Chemistry</b>		
Ag (ppm)	0.130	0.000
Al (ppm)	10200.000	0.005
As (ppm)	11.400	0.000
Ba (ppm)	68.200	0.068
Be (ppm)	0.200	0.000
Bi (ppm)	0.050	0.000
Ca (ppm)	4500.000	21.108 $\pm$ 16.801
Cd (ppm)	0.520	0.000
Co (ppm)	5.780	0.000
Cr (ppm)	17.900	0.000
Cu (ppm)	13.800	0.000
Fe (ppm)	20300.000	0.008
Hg (ppm)	0.025	0.000 $\pm$ 0.000
K (ppm)	1510.000	0.614 $\pm$ 0.406
Li (ppm)	19.300	0.001
Mg (ppm)	6580.000	7.667 $\pm$ 7.975
Mn (ppm)	361.000	0.001
Mo (ppm)	0.800	0.001
Na (ppm)	168.000	1.538 $\pm$ 1.275
Ni (ppm)	14.900	0.000
Pb (ppm)	6.520	0.000
Sb (ppm)	0.300	0.000
Se (ppm)	0.250	0.000
Sn (ppm)	0.240	0.000
Sr (ppm)	35.200	0.044
Ti (ppm)	779.000	0.001
Tl (ppm)	0.090	0.000
TP (ppm)	752.000	0.000 $\pm$ 0.000
U (ppm)	0.810	0.001
V (ppm)	38.400	0.000
Zn (ppm)	66.800	0.001
Zr (ppm)	1.540	0.000 $\pm$ 0.000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	2	9 $\pm$ 9
%Cobble (%)	80	51 $\pm$ 15
%Gravel (%)	0	3 $\pm$ 3
%Pebble (%)	18	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0
D50 (cm)	9.25	15.12 $\pm$ 14.26
Dg (cm)	9.1	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	7	7 $\pm$ 1
Embeddedness (Category(1-5))	3	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	3	1 $\pm$ 0
SurroundingMaterial (Category(0-9))	6	4 $\pm$ 1
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	439.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	415.94583	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	20.01000	18.88386 $\pm$ 9.29866
Slope30-50% (%)	28.63164	29.00215 $\pm$ 6.33837
Slope50-60% (%)	15.79183	13.91808 $\pm$ 1.91315
SlopeAvg (%)	50.07479	52.79851 $\pm$ 8.68755
SlopeGT60% (%)	33.33831	35.47207 $\pm$ 13.39684
SlopeLT30% (%)	22.23822	21.60770 $\pm$ 8.54172
SlopeMax (%)	215.77939	298.94390 $\pm$ 146.30679

**Habitat Description**

<b>Variable</b>	<b>NECAR01</b>	<b>Predicted Group Reference Mean <math>\pm</math>SD</b>
<b>SlopeMin (%)</b>	0.00000	0.19777 $\pm$ 0.29213
<b>SlopeStdev (%)</b>	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
<b>General-Alkalinity (mg/L)</b>	46.5000000	71.7000000 $\pm$ 53.9231440
<b>General-DO (mg/L)</b>	11.0000000	11.4175000 $\pm$ 0.7986708
<b>General-pH (pH)</b>	7.9	7.9 $\pm$ 0.4
<b>General-SpCond (<math>\mu</math>S/cm)</b>	119.3000000	168.9833333 $\pm$ 123.7858182
<b>General-TempAir (Degrees Celsius)</b>	4.7	26.0
<b>General-TempWater (Degrees Celsius)</b>	8.2000000	7.3183333 $\pm$ 2.7240839
<b>General-Turbidity (NTU)</b>	1.0500000	0.2020000
<b>Nitrogen-NO2 (mg/L)</b>	0.0025000	0.0027500 $\pm$ 0.0062831
<b>Nitrogen-NO2+NO3 (mg/L)</b>	0.0310000	0.0690000
<b>Nitrogen-NO3 (mg/L)</b>	0.0310000	0.0546667 $\pm$ 0.0498148
<b>Phosphorus-OrthoP (mg/L)</b>	0.0025000	0.0002727 $\pm$ 0.0004671

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Sep 24 2013
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.97944 N, 117.88417 W
<b>Altitude</b>	1450
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5



Figure 1. Location Map



Across Reach  
Aerial (No image found)



Down Stream



Field Sheet

Miscellaneous (No image found)



Substrate



Up Stream

### Cabin Assessment Results

Reference Model Summary					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	August 13, 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>	43.1%	0.2%	1.3%	46.5%	8.8%
<b>CABIN Assessment of NECAR01 on Sep 24, 2013</b>	Divergent				

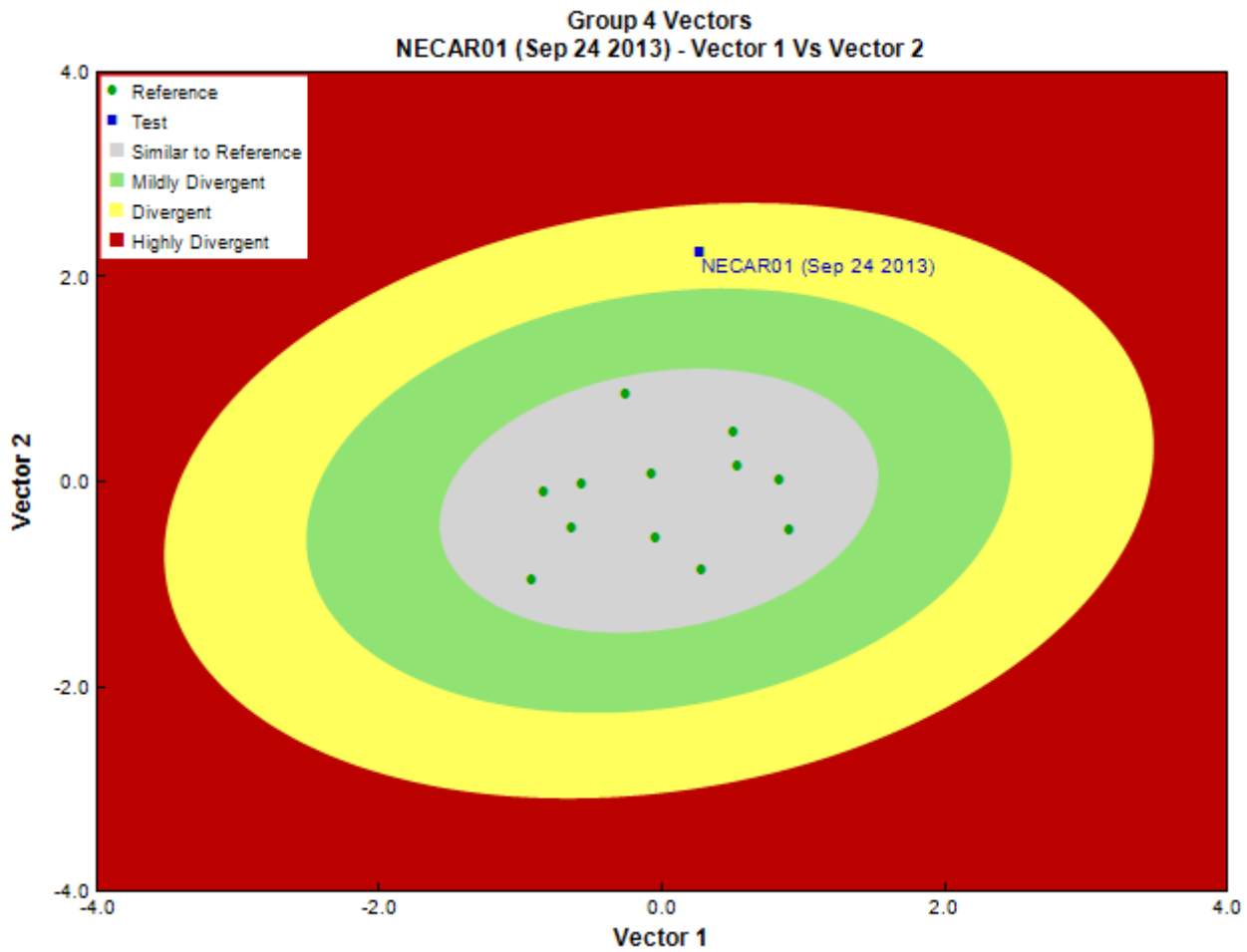


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	Pina Viola, Consultant
<b>Date Taxonomy Completed</b>	January 03, 2014
	Marchant Box
<b>Sub-Sample Proportion</b>	22/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Tubificida	Naididae	7	31.8
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	2	9.1
	Insecta	Diptera	Chironomidae	283	1,286.4
			Psychodidae	1	4.5
		Ephemeroptera	Ameletidae	1	4.5
			Baetidae	4	18.2
			Ephemerellidae	5	22.7
			Heptageniidae	5	22.7
		Plecoptera		1	4.5
			Capniidae	1	4.5
			Chloroperlidae	6	27.3
			Perlodidae	1	4.5
			Total	317	1,440.7

**Metrics**

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
Bray-Curtis Distance	0.88	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
Hilsenhoff Family index (North-West)	5.8	3.2 $\pm$ 0.3
Intolerant taxa	--	
Long-lived taxa	--	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
% Filterers	--	2.2 $\pm$ 1.8
% Gatherers	95.6	38.4 $\pm$ 12.4
% Predatores	92.1	19.0 $\pm$ 8.5
% Scrapers	4.7	63.2 $\pm$ 19.7
% Shredder	0.3	27.6 $\pm$ 15.2
No. Clinger Taxa	7.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
% Chironomidae	89.6	7.4 $\pm$ 6.4
% Coleoptera	0.0	1.5 $\pm$ 3.9
% Diptera + Non-insects	92.7	10.8 $\pm$ 7.6
% Ephemeroptera	4.7	51.7 $\pm$ 18.8
% Ephemeroptera that are Baetidae	26.7	40.6 $\pm$ 30.0
% EPT Individuals	7.3	87.7 $\pm$ 7.4
% Odonata	--	0.0 $\pm$ 0.0
% of 2 dominant taxa	91.8	57.9 $\pm$ 14.2
% of 5 dominant taxa	96.8	81.6 $\pm$ 7.9
% of dominant taxa	89.6	39.8 $\pm$ 14.9
% Plecoptera	2.5	31.4 $\pm$ 15.4
% Tribe Tanyatarisini	--	
% Trichoptera that are Hydropsychida	--	27.0 $\pm$ 26.2
% Tricoptera	0.0	4.5 $\pm$ 2.8
No. EPT individuals/Chironomids+EPT Individuals	0.1	0.9 $\pm$ 0.1
<b>Richness</b>		
Chironomidae taxa (genus level only)	1.0	1.0 $\pm$ 0.0
Coleoptera taxa	0.0	0.4 $\pm$ 0.5
Diptera taxa	2.0	3.3 $\pm$ 1.0
Ephemeroptera taxa	4.0	3.8 $\pm$ 0.8
EPT Individuals (Sum)	104.5	526.0 $\pm$ 285.8
EPT taxa (no)	7.0	13.3 $\pm$ 2.7

**Frequency and Probability of Taxa Occurrence**

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.83
Chironomidae	100%	100%	100%	100%	95%	1.00
Chloroperlidae	78%	88%	94%	100%	100%	0.90
Ephemerellidae	78%	100%	100%	100%	100%	0.90
Heptageniidae	100%	100%	100%	100%	100%	1.00
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlodidae	78%	78%	89%	92%	81%	0.85
Rhyacophilidae	100%	92%	100%	100%	95%	1.00
Taeniopterygidae	89%	49%	100%	92%	97%	0.91

**RIVPACS Ratios**

RIVPACS : Expected taxa P>0.50	13.46
RIVPACS : Observed taxa P>0.50	9.00
RIVPACS : O:E (p > 0.5)	0.67
RIVPACS : Expected taxa P>0.70	9.38
RIVPACS : Observed taxa P>0.70	7.00
RIVPACS : O:E (p > 0.7)	0.75

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	59.0	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	59.00	51.38 $\pm$ 29.42
Depth-Max (cm)	88.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	0.00	1.33 $\pm$ 0.78
Reach-%Logging (PercentRange)	1	0 $\pm$ 0
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)	0.0030000	0.0546683 $\pm$ 0.0376269
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)	0.45	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.63	0.76 $\pm$ 0.36
Width-Bankfull (m)	24.0	13.4 $\pm$ 9.9
Width-Wetted (m)	14.0	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316



## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Sediment Chemistry</b>		
Ag (ppm)	0.160	0.000
Al (ppm)	8110.000	0.005
As (ppm)	36.300	0.000
Ba (ppm)	65.700	0.068
Be (ppm)	0.200	0.000
Bi (ppm)	0.050	0.000
Ca (ppm)	3340.000	21.108 $\pm$ 16.801
Cd (ppm)	0.544	0.000
Co (ppm)	4.950	0.000
Cr (ppm)	12.600	0.000
Cu (ppm)	11.700	0.000
Fe (ppm)	18100.000	0.008
Hg (ppm)	0.025	0.000 $\pm$ 0.000
K (ppm)	1180.000	0.614 $\pm$ 0.406
Li (ppm)	15.700	0.001
Mg (ppm)	4670.000	7.667 $\pm$ 7.975
Mn (ppm)	305.000	0.001
Mo (ppm)	0.770	0.001

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Na (ppm)	117.000	1.538 $\pm$ 1.275
Ni (ppm)	10.200	0.000
Pb (ppm)	7.860	0.000
Sb (ppm)	0.510	0.000
Se (ppm)	0.250	0.000
Sn (ppm)	0.180	0.000
Sr (ppm)	24.300	0.044
Ti (ppm)	506.000	0.001
Tl (ppm)	0.101	0.000
U (ppm)	0.681	0.001
V (ppm)	33.800	0.000
Zn (ppm)	54.100	0.001
Zr (ppm)	1.260	0.000 $\pm$ 0.000
<b>Substrate Data</b>		
%Bedrock (%)	0	0 $\pm$ 0
%Boulder (%)	1	9 $\pm$ 9
%Cobble (%)	82	51 $\pm$ 15
%Gravel (%)	0	3 $\pm$ 3
%Pebble (%)	17	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0
D50 (cm)	9.80	15.12 $\pm$ 14.26
Dg (cm)	9.5	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	7	7 $\pm$ 1
Embeddedness (Category(1-5))	4	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	2	1 $\pm$ 0
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	439.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	415.94583	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	0.00360	18.88386 $\pm$ 9.29866
Slope30-50% (%)	28.63164	29.00215 $\pm$ 6.33837
Slope50-60% (%)	15.79183	13.91808 $\pm$ 1.91315
SlopeAvg (%)	50.07479	52.79851 $\pm$ 8.68755
SlopeGT60% (%)	33.33831	35.47207 $\pm$ 13.39684
SlopeLT30% (%)	22.23822	21.60770 $\pm$ 8.54172
SlopeMax (%)	215.77939	298.94390 $\pm$ 146.30679
SlopeMin (%)	0.00000	0.19777 $\pm$ 0.29213
SlopeStdev (%)	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
General-Alkalinity (mg/L)	42.0000000	71.7000000 $\pm$ 53.9231440
General-DO (mg/L)	9.0000000	11.4175000 $\pm$ 0.7986708
General-pH (pH)	7.8	7.9 $\pm$ 0.4
General-SpCond ( $\mu$ S/cm)	104.3000000	168.9833333 $\pm$ 123.7858182
General-TempAir (Degrees Celsius)	14.0	26.0
General-TempWater (Degrees Celsius)	10.7000000	7.3183333 $\pm$ 2.7240839
General-Turbidity (NTU)	1.3000000	0.2020000
Phosphorus-OrthoP (mg/L)	0.0025000	0.0002727 $\pm$ 0.0004671

**Site Description**

<b>Study Name</b>	CBWQ-Arrow
<b>Site</b>	NECAR01
<b>Sampling Date</b>	Sep 21 2014
<b>Know Your Watershed Basin</b>	Central Columbia
<b>Province / Territory</b>	British Columbia
<b>Terrestrial Ecological Classification</b>	Montane Cordillera EcoZone Columbia Mountains and Highlands EcoRegion
<b>Coordinates (decimal degrees)</b>	49.97944 N, 117.88417 W
<b>Altitude</b>	1450
<b>Local Basin Name</b>	Caribou Cr.
	Columbia River
<b>Stream Order</b>	5



Figure 1. Location Map



Across Reach  
Aerial (No image found)



Down Stream



Field Sheet

Miscellaneous (No image found)



Substrate



Up Stream

### Cabin Assessment Results

Reference Model Summary					
<b>Model</b>	Columbia-Okanagan Preliminary March 2010				
<b>Analysis Date</b>	August 13, 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>	3.0%	3.8%	5.6%	72.3%	15.4%
<b>CABIN Assessment of NECAR01 on Sep 21, 2014</b>	Similar to Reference				

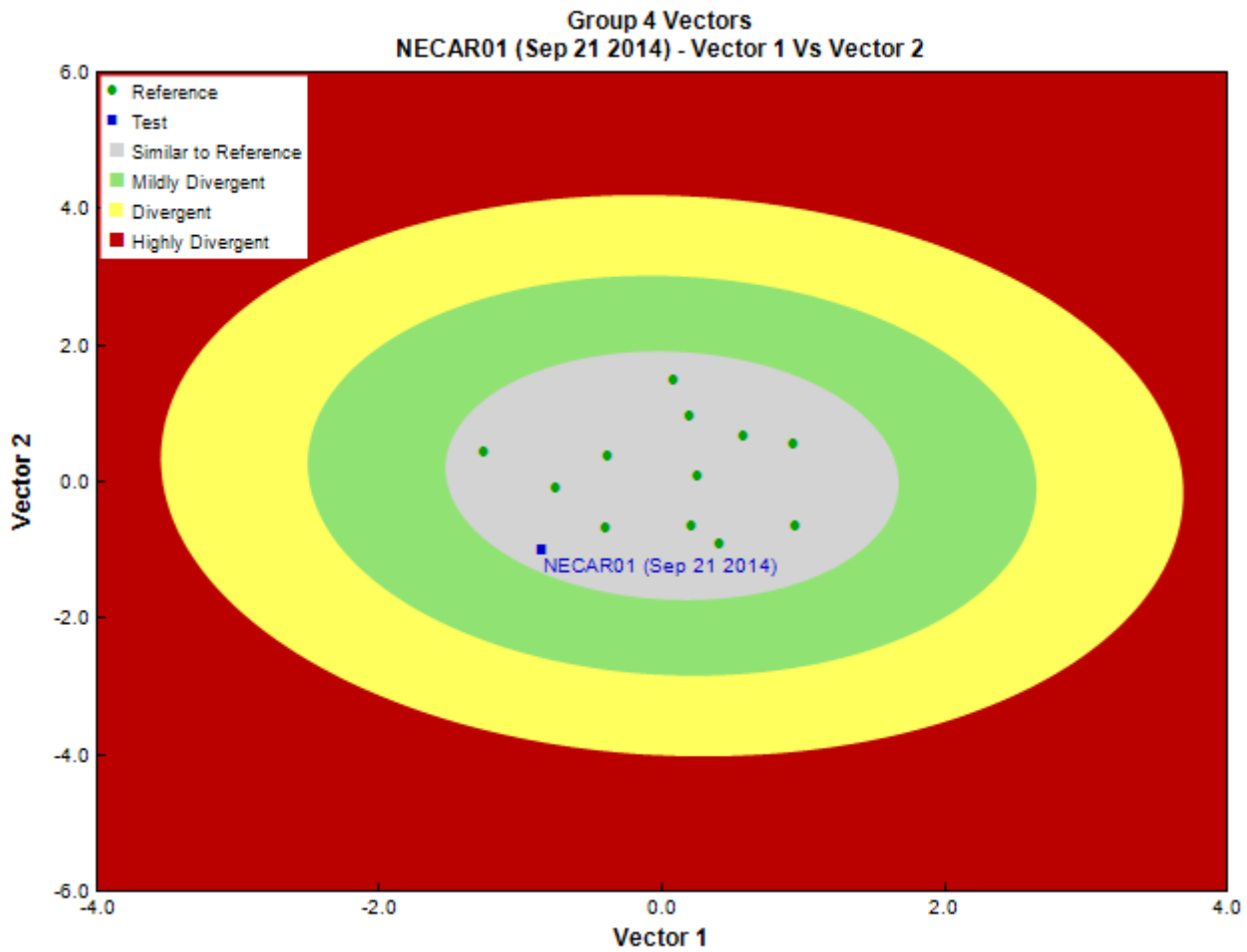


Figure 3. CABIN ordination assessment of the test site with the predicted group of reference sites. Each axis represents the relative abundance of the entire benthic invertebrate community with different organisms weighted differently on each axis.

**Sample Information**

<b>Sampling Device</b>	Kick Net
<b>Mesh Size</b>	400
<b>Sampling Time</b>	3
<b>Taxonomist</b>	-
<b>Date Taxonomy Completed</b>	-
	-
<b>Sub-Sample Proportion</b>	48/100

**Community Structure**

Phylum	Class	Order	Family	Raw Count	Total Count
Annelida	Oligochaeta	Tubificida	Naididae	1	2.1
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	5	10.4
			Sperchontidae	1	2.1
			Torrenticolidae	4	8.3
	Insecta	Diptera	Ceratopogonidae	1	2.1
			Chironomidae	128	266.7
			Empididae	2	4.2
			Psychodidae	3	6.3
			Tipulidae	3	6.3
		Ephemeroptera	Ameletidae	5	10.4
			Baetidae	25	52.1
			Ephemerellidae	26	54.2
			Heptageniidae	90	187.6
			Leptophlebiidae	1	2.1
		Plecoptera	Chloroperlidae	11	22.9

## Community Structure

Phylum	Class	Order	Family	Raw Count	Total Count
			Perlodidae	4	8.4
		Trichoptera	Rhyacophilidae	1	2.1
			Total	311	648.3

## Metrics

Name	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bray-Curtis Distance</b>	0.56	0.4 $\pm$ 0.1
<b>Biotic Indices</b>		
<b>Hilsenhoff Family index (North-West)</b>	4.6	3.2 $\pm$ 0.3
<b>Intolerant taxa</b>	--	
<b>Long-lived taxa</b>	--	2.1 $\pm$ 1.0
<b>Functional Measures</b>		
<b>% Filterers</b>	--	2.2 $\pm$ 1.8
<b>% Gatherers</b>	57.6	38.4 $\pm$ 12.4
<b>% Predatores</b>	50.5	19.0 $\pm$ 8.5
<b>% Scrapers</b>	40.8	63.2 $\pm$ 19.7
<b>% Shredder</b>	1.0	27.6 $\pm$ 15.2
<b>No. Clinger Taxa</b>	13.0	23.2 $\pm$ 6.3
<b>Number Of Individuals</b>		
<b>% Chironomidae</b>	41.2	7.4 $\pm$ 6.4
<b>% Coleoptera</b>	0.0	1.5 $\pm$ 3.9
<b>% Diptera + Non-insects</b>	47.6	10.8 $\pm$ 7.6
<b>% Ephemeroptera</b>	47.3	51.7 $\pm$ 18.8
<b>% Ephemeroptera that are Baetidae</b>	17.0	40.6 $\pm$ 30.0
<b>% EPT Individuals</b>	52.4	87.7 $\pm$ 7.4
<b>% Odonata</b>	--	0.0 $\pm$ 0.0
<b>% of 2 dominant taxa</b>	70.1	57.9 $\pm$ 14.2
<b>% of 5 dominant taxa</b>	90.0	81.6 $\pm$ 7.9
<b>% of dominant taxa</b>	41.2	39.8 $\pm$ 14.9
<b>% Plecoptera</b>	4.8	31.4 $\pm$ 15.4
<b>% Tribe Tanyatarisini</b>	--	
<b>% Trichoptera that are Hydropsychida</b>	0.0	27.0 $\pm$ 26.2
<b>% Tricoptera</b>	0.3	4.5 $\pm$ 2.8
<b>No. EPT individuals/Chironomids+EPT Individuals</b>	0.6	0.9 $\pm$ 0.1
<b>Richness</b>		
<b>Chironomidae taxa (genus level only)</b>	1.0	1.0 $\pm$ 0.0
<b>Coleoptera taxa</b>	0.0	0.4 $\pm$ 0.5
<b>Diptera taxa</b>	5.0	3.3 $\pm$ 1.0
<b>Ephemeroptera taxa</b>	5.0	3.8 $\pm$ 0.8
<b>EPT Individuals (Sum)</b>	339.6	526.0 $\pm$ 285.8
<b>EPT taxa (no)</b>	8.0	13.3 $\pm$ 2.7

## Frequency and Probability of Taxa Occurrence

Reference Model Taxa	Frequency of Occurrence in Reference Sites					Probability Of Occurrence at NECAR01
	Group 1	Group 2	Group 3	Group 4	Group 5	
Baetidae	100%	100%	100%	100%	97%	1.00
Capniidae	78%	55%	50%	92%	68%	0.84
Chironomidae	100%	100%	100%	100%	95%	0.99
Chloroperlidae	78%	88%	94%	100%	100%	0.99
Ephemerellidae	78%	100%	100%	100%	100%	0.99
Heptageniidae	100%	100%	100%	100%	100%	1.00
Hydropsychidae	11%	92%	78%	92%	86%	0.88
Nemouridae	100%	100%	100%	100%	100%	1.00
Perlidae	11%	84%	33%	100%	3%	0.78
Perlodidae	78%	78%	89%	92%	81%	0.89
Rhyacophilidae	100%	92%	100%	100%	95%	0.99
Taeniopterygidae	89%	49%	100%	92%	97%	0.91

## RIVPACS Ratios

RIVPACS : Expected taxa P>0.50	13.62
RIVPACS : Observed taxa P>0.50	10.00
RIVPACS : O:E (p > 0.5)	0.73
RIVPACS : Expected taxa P>0.70	11.25
RIVPACS : Observed taxa P>0.70	7.00
RIVPACS : O:E (p > 0.7)	0.62

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
<b>Bedrock Geology</b>		
Alluvium (%)	0.00000	0.00000 $\pm$ 0.00000
Intrusive (%)	50.53120	11.07346 $\pm$ 28.63466
Metamorphic (%)	0.00000	17.96649 $\pm$ 35.53463
Sedimentary (%)	45.39122	70.96005 $\pm$ 44.90394
Ultramafic (%)	0.00000	0.00000 $\pm$ 0.00000
Volcanic (%)	4.07758	0.00000 $\pm$ 0.00000
<b>Channel</b>		
Depth-Avg (cm)	37.4	23.6 $\pm$ 11.1
Depth-BankfullMinusWetted (cm)	30.00	51.38 $\pm$ 29.42
Depth-Max (cm)	84.0	34.6 $\pm$ 12.3
Macrophyte (PercentRange)	0	0 $\pm$ 0
Reach-%CanopyCoverage (PercentRange)	0.00	1.33 $\pm$ 0.78
Reach-DomStreamsideVeg (Category (1-4))	2	4 $\pm$ 1
Reach-Pools (Binary)	1	1 $\pm$ 0
Reach-Rapids (Binary)	0	0 $\pm$ 0
Reach-Riffles (Binary)	0	1 $\pm$ 0
Reach-StraightRun (Binary)	1	1 $\pm$ 1
Slope (m/m)	0.0030000	0.0546683 $\pm$ 0.0376269
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)	0.25	0.48 $\pm$ 0.22
Velocity-Max (m/s)	0.63	0.76 $\pm$ 0.36
Width-Bankfull (m)	18.0	13.4 $\pm$ 9.9
Width-Wetted (m)	15.0	8.5 $\pm$ 5.8
XSEC-VelMethod (Category (1-3))	1	1 $\pm$ 0
<b>Climate</b>		
Precip01_JAN (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip02_FEB (mm)	105.66667	83.66667 $\pm$ 27.10278
Precip03_MAR (mm)	93.33333	77.23611 $\pm$ 27.15950
Precip04_APR (mm)	132.00000	104.85000 $\pm$ 26.28129
Precip05_MAY (mm)	80.00000	71.65833 $\pm$ 17.81753
Precip06_JUN (mm)	92.33333	78.56667 $\pm$ 15.58521
Precip07_JUL (mm)	74.33333	64.39167 $\pm$ 10.41611
Precip08_AUG (mm)	71.33333	60.53056 $\pm$ 10.43373
Precip09_SEP (mm)	68.33333	56.91944 $\pm$ 10.91783
Precip10_OCT (mm)	83.66667	65.08056 $\pm$ 14.41229
Precip11_NOV (mm)	127.33333	105.93889 $\pm$ 25.04104
Precip12_DEC (mm)	144.33333	116.84444 $\pm$ 29.80954
PrecipTotal_ANNUAL (mm)	1149.66667	952.64722 $\pm$ 226.04690
Temp01_JANMax (Degrees Celsius)	-4.33333	-4.39167 $\pm$ 2.51268
Temp01_JANmin (Degrees Celsius)	-10.33333	-11.40833 $\pm$ 3.53951
Temp02_FEBmax (Degrees Celsius)	-1.33333	-1.70000 $\pm$ 2.12945
Temp02_FEBmin (Degrees Celsius)	-8.33333	-9.17500 $\pm$ 3.33361
Temp03_MARmax (Degrees Celsius)	2.00000	2.50556 $\pm$ 2.87525
Temp03_MARmin (Degrees Celsius)	-5.66667	-6.14167 $\pm$ 2.98556
Temp04_APRmax (Degrees Celsius)	7.00000	7.12222 $\pm$ 3.48771
Temp04_APRmin (Degrees Celsius)	-2.33333	-2.71667 $\pm$ 2.22785
Temp05_MAYmax (Degrees Celsius)	11.66667	12.03889 $\pm$ 3.55434
Temp05_MAYmin (Degrees Celsius)	0.66667	1.04722 $\pm$ 2.08663
Temp06_JUNMax (Degrees Celsius)	15.33333	15.72500 $\pm$ 3.40030



## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Temp06_JUNMin (Degrees Celsius)	3.66667	4.00278 $\pm$ 2.41085
Temp07_JULmax (Degrees Celsius)	19.33333	19.56111 $\pm$ 3.47275
Temp07_JULmin (Degrees Celsius)	6.66667	6.35833 $\pm$ 2.28332
Temp08_AUGmax (Degrees Celsius)	19.00000	19.52222 $\pm$ 3.51100
Temp08_AUGmin (Degrees Celsius)	6.66667	6.19167 $\pm$ 2.34422
Temp09_SEPmax (Degrees Celsius)	13.66667	14.04444 $\pm$ 3.03456
Temp09_SEPmin (Degrees Celsius)	2.66667	2.04722 $\pm$ 2.37208
Temp10_OCTmax (Degrees Celsius)	6.33333	6.88889 $\pm$ 2.71577
Temp10_OCTmin (Degrees Celsius)	-1.33333	-1.46111 $\pm$ 1.64316
Temp11_NOVmax (Degrees Celsius)	-0.66667	-0.79722 $\pm$ 2.43512
Temp11_NOVmin (Degrees Celsius)	-6.33333	-6.68056 $\pm$ 2.97163
Temp12_DECmax (Degrees Celsius)	-4.33333	-4.66389 $\pm$ 2.69757
Temp12_DECmin (Degrees Celsius)	-10.00000	-10.65833 $\pm$ 3.71739
TempANNUALmax (Degrees Celsius)	6.33333	6.96389 $\pm$ 3.06157
TempANNUALmean (Degrees Celsius)	2.33333	2.25278 $\pm$ 2.66574
TempANNUALmin (Degrees Celsius)	-1.33333	-2.18056 $\pm$ 2.41152
<b>Hydrology</b>		
Drainage-Area (km <sup>2</sup> )	237.82223	124.42081 $\pm$ 200.99192
Perimeter (Km)	107.64410	64.71360 $\pm$ 56.15436
StreamDensity (m/km <sup>2</sup> )	3675.02753	2246.06682 $\pm$ 604.89962
StreamLength (m)	874003.24	302226.63 $\pm$ 500983.26
<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 (%)	3.68838	1.19263 $\pm$ 2.03874
Natl-BroadleafSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Coniferous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ConiferousDense (%)	0.54200	0.64845 $\pm$ 0.37668
Natl-ConiferousOpen (%)	62.36723	54.62780 $\pm$ 18.30692
Natl-ConiferousSparse (%)	2.24822	0.94121 $\pm$ 1.53621
Natl-Deciduous (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Developed (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ExposedLand (%)	8.74200	13.20054 $\pm$ 11.11850
Natl-Grassland (%)	0.00000	1.87556 $\pm$ 1.68508
Natl-Herb (%)	7.85241	5.75738 $\pm$ 2.89836
Natl-MixedForest (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodDense (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-MixedwoodOpen (%)	0.09597	0.04060 $\pm$ 0.10208
Natl-MixedwoodSparse (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-PerennCropsPast (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-Rock/Rubble (%)	0.25364	1.56403 $\pm$ 2.75979
Natl-Shrubland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-ShrubLow (%)	0.65271	4.98298 $\pm$ 3.22579
Natl-ShrubTall (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-SnowIce (%)	0.00794	0.08491 $\pm$ 0.15475
Natl-Water (%)	0.04197	0.22916 $\pm$ 0.36834
Natl-Wetland (%)	0.00000	0.00000 $\pm$ 0.00000
Natl-WetlandHerb (%)	0.07541	0.12918 $\pm$ 0.35193
Natl-WetlandShrub (%)	0.00858	0.00000 $\pm$ 0.00000
Natl-WetlandTreed (%)	0.00000	0.00000 $\pm$ 0.00000
Reg-Ice (%)	0.00000	0.02487 $\pm$ 0.06034
<b>Sediment Chemistry</b>		
Ag (ppm)	0.125	0.000
Al (ppm)	8550.000	0.005
As (ppm)	12.300	0.000
Ba (ppm)	48.700	0.068
Be (ppm)	0.400	0.000
Bi (ppm)	0.100	0.000
Ca (ppm)	3340.000	21.108 $\pm$ 16.801
Cd (ppm)	0.424	0.000
Co (ppm)	5.030	0.000

## Habitat Description

Variable	NECAR01	Predicted Group Reference Mean $\pm$ SD
Cr (ppm)	15.000	0.000
Cu (ppm)	10.700	0.000
Fe (ppm)	17100.000	0.008
Hg (ppm)	0.050	0.000 $\pm$ 0.000
K (ppm)	1290.000	0.614 $\pm$ 0.406
Li (ppm)	17.000	0.001
Mg (ppm)	5640.000	7.667 $\pm$ 7.975
Mn (ppm)	348.000	0.001
Mo (ppm)	0.580	0.001
Na (ppm)	114.000	1.538 $\pm$ 1.275
Ni (ppm)	12.400	0.000
Pb (ppm)	7.180	0.000
Sb (ppm)	0.330	0.000
Se (ppm)	0.500	0.000
Sn (ppm)	0.180	0.000
Sr (ppm)	22.600	0.044
Ti (ppm)	579.000	0.001
Tl (ppm)	0.093	0.000
U (ppm)	0.662	0.001
V (ppm)	39.000	0.000
Zn (ppm)	53.000	0.001
Zr (ppm)	1.400	0.000 $\pm$ 0.000
<b>Substrate Data</b>		
%Bedrock (%)	1	0 $\pm$ 0
%Boulder (%)	0	9 $\pm$ 9
%Cobble (%)	82	51 $\pm$ 15
%Gravel (%)	0	3 $\pm$ 3
%Pebble (%)	17	37 $\pm$ 20
%Sand (%)	0	0 $\pm$ 0
%Silt+Clay (%)	0	0 $\pm$ 0
D50 (cm)	8.90	15.12 $\pm$ 14.26
Dg (cm)	8.8	8.2 $\pm$ 2.8
Dominant-1st (Category(0-9))	6	7 $\pm$ 1
Dominant-2nd (Category(0-9))	5	7 $\pm$ 1
Embeddedness (Category(1-5))	4	5 $\pm$ 1
PeriphytonCoverage (Category(1-5))	3	1 $\pm$ 0
SurroundingMaterial (Category(0-9))	6	4 $\pm$ 1
<b>Topography</b>		
ElevationMax (m)	2671.00000	2634.66667 $\pm$ 309.54023
ElevationMin (m)	439.00000	913.41667 $\pm$ 271.25180
ElevationStdev (m)	415.94583	349.02363 $\pm$ 92.12445
Reg-SlopeLT30% (%)	15.00000	18.88386 $\pm$ 9.29866
Slope30-50% (%)	28.63164	29.00215 $\pm$ 6.33837
Slope50-60% (%)	15.79183	13.91808 $\pm$ 1.91315
SlopeAvg (%)	50.07479	52.79851 $\pm$ 8.68755
SlopeGT60% (%)	33.33831	35.47207 $\pm$ 13.39684
SlopeLT30% (%)	22.23822	21.60770 $\pm$ 8.54172
SlopeMax (%)	215.77939	298.94390 $\pm$ 146.30679
SlopeMin (%)	0.00000	0.19777 $\pm$ 0.29213
SlopeStdev (%)	24.20049	26.57529 $\pm$ 4.62351
<b>Water Chemistry</b>		
General-Alkalinity (mg/L)	47.0000000	71.7000000 $\pm$ 53.9231440
General-DO (mg/L)	11.0000000	11.4175000 $\pm$ 0.7986708
General-pH (pH)	7.3	7.9 $\pm$ 0.4
General-SpCond ( $\mu$ S/cm)	113.4000000	168.9833333 $\pm$ 123.7858182
General-TempAir (Degrees Celsius)	20.9	26.0
General-TempWater (Degrees Celsius)	12.4000000	7.3183333 $\pm$ 2.7240839
General-Turbidity (NTU)	1.1000000	0.2020000