

Site Assessment Report – 2013 – YPS- 568

Site Data

Site	YPS- 568
Sample Date	Aug 1, 2013
Latitude	N 61.3884
Longitude	W 139.3315
Altitude	3992 ft
Feature Name	Tatamagouche Creek
Stream Order	3

Site Photograph



Upstream View

Context Map

Refer to White River Watershed Aquatic Health Monitoring Sites 2013 map.

Assignment of the Test Site to a Group

The test site is assigned to a benthic insect community group (Group) based on the 2013 Yukon CABIN model (BEAST Prediction Results). The site is assigned to the Group for which it has the highest probability of belonging based on habitat attributes.

Predictor Variables	Altitude (ft), Longitude, LC-Bryoids (%), LC-Broadleaf open (%), LC-Mixed wood open (%), LC-Wetland herbaceous (%), Precipitation Feb (mm), Precipitation March (mm), Precipitation June (mm), Precipitation July (mm), Rainfall June (mm), April Max temp (C), Average Depth (cm), Average Velocity (m/s)				
Predicted Group	5				
Group	1	2	3	4	5
Probability that the site belongs to each Group	2.1%	2.7%	25.3%	17.4%	52.6%

Habitat Attributes of Site

This table reports on how the habitat predictor variables measured at the test site compare to the mean habitat predictor variables for the reference sites in the same group.

Variable	Site	Reference Mean	Reference SD
Longitude	-139.331	-137.47	2.24
Altitude (ft)	3992	2727.00	914.30
Depth-Avg (cm)	27.4	24.00	13.45
Velocity-Avg (m/s)	1.2	0.69	0.41
Precip. FEB (mm)	35.3	23.65	9.87
Precip. MAR (mm)	31.9	21.43	10.29
Precip. JUN (mm)	57.2	42.71	20.01
Precip. JUL (mm)	73.7	53.48	23.83
Rainfall JUN (mm)	54.7	39.59	18.11
April Max Temp (C)	3.9	-1.99	4.49
Broadleaf Open (%)	0.04	0.11	0.31
Bryoids (%)	3.10	1.01	2.53
Mixedwood Open (%)	0.00	0.14	0.32
Wetland Herb (%)	0.00	0.03	0.08

Summary Results of the Benthic Invertebrate Data

The table presents the summary values of the benthic community of the test site compared to expected values and the average benthic community of the reference sites.

	Test Site	Reference Average	Reference Standard Deviation	Expected Families (RIVPACS)
Total Abundance	129	12539.40	5669.59	
Total No. of Taxa	7	11.28	3.36	12.4

This table shows how the benthic community of the test site compares to the average of the reference sites to which it is being compared. Both the presence of certain families and their abundance (the number of individuals found) are compared.

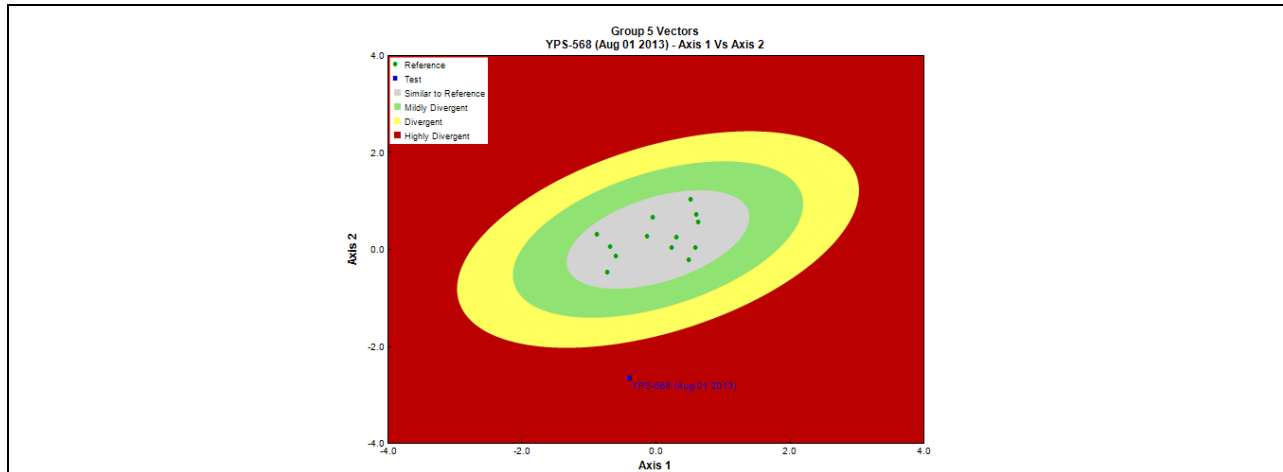
Family (bold = characteristic of group)	RIVPACS Prediction (probability)	Test Site (# of individuals)	Reference Average	Reference Standard Deviation
Chironomidae	1	27	7472	6727
Nemouridae	0.95	68	343	342
Baetidae	0.92	8	2886	2692
Heptageniidae	0.84	1	390	470
Simuliidae	0.8	20	987	1564
Capniidae	0.61	2	257	294
Empididae	0.6	0	34	47
Perlodidae	0.6	0	111	151
Tipulidae	0.51	0	21	27
Chloroperlidae	0.5	0	67	108

Using the predictive model with the RIVAPCS weighted probability of the sites predicted membership, we would expect 12.4 families at this site, only 7 families were observed. Of the ten families expected to occur ($P > 0.5$) six were present. All three families characteristic of the group were present but in low numbers. Total abundance was far below the normal range and richness was much lower than expected.

Visual Reports on Site Condition

This figure displays three site assessment graphs which show the site relative to the group of reference sites to which it is compared. The three axes (or vectors) represent three dimensional space, and the probability bands (from center) are 75 - 90% (Similar to Reference), 90 – 99% (Mildly Divergent from Reference), 99 – 99.9% (Divergent from Reference), and outside 99.9% (Highly Divergent from Reference).

A 0-75% probability band was provided in past annual monitoring reports. Programming is currently being developed in order to incorporate this function into the CABIN model, however at this time the 0-75% band cannot be included here.



Assessment of Overall Site Condition

Vector 1 vs Vector 2	Highly Divergent from Reference Condition
Vector 1 vs Vector 3	Analysis Not Required
Vector 2 vs Vector 3	Analysis Not Required
Overall	Highly Divergent from Reference Condition

Using CABIN, YPS-568 is assessed as Highly Divergent from Reference Condition. High flows during sampling likely effected model results, in addition there are potential issues with the CABIN model inputs at this location which may have influenced the results for this site therefore the site condition result is not considered accurate at this time (Bryoids). This site was also sampled in 2015 and 2016.

Field Measurements

The following table shows general information collected at the site as well as water quality parameters when available. All measurements reflect conditions at the time the site visit was conducted.

Variable	
Site	YPS-568
Sample Year	2013
Status	Test
Bankfull Width (m)	11.7
Wetted Width (m)	11.7
Channel Depth Average (cm)	27.4
Channel Depth Max (cm)	30
Slope (m/m)	0.03
Max Water Velocity (m/s)	1.74
Average Water Velocity (m/s)	1.21
Substrate Embeddedness	1/4 embedded
Dominant Substrate-1st	1.6 – 3.2 cm (pebble)
Dominant Substrate-2nd	12.8 – 25.6 cm (cobble)
Surrounding Substrate Material	0.1 – 0.2 cm (sand)
Pools	Absent
Rapids	Present
Riffles	Present
Straight Run	Absent
Canopy Coverage (%)	1-25
Periphyton Coverage	
Macrophyte Coverage (%)	None
Riparian Vegetation-Coniferous	Present
Riparian Vegetation-Deciduous	Present
Riparian Vegetation-Grasses/Ferns	Present
Riparian Vegetation-Shrubs	Present
General Conductivity ($\mu\text{S}/\text{cm}$)	163
Specific Conductance ($\mu\text{S}/\text{cm}$)	235
DO (mg/L)	10.78
pH (pH)	7.8
TDS (mg/L)	
TSS (mg/L)	
Air Temp (Degrees Celsius)	26
Water Temp (Degrees Celsius)	8.81
Turbidity (NTU)	