Site Assessment Report 2014 – YPS-372

Site Data

Site	YPS-372
Sample Date	Jul 25, 2014
Latitude	61.39361 N
Longitude	134.37056 W
Altitude	2674
Feature Name	Cottoneva Creek
Stream Order	3

Site Photograph

Upstream view

Context Map

Refer to Big Salmon River Watershed Aquatic Health Monitoring Sites 2014 map.

Site Sampling History

This site has been sampled on one previous occasion, in 2008.

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	3				
Group	1	2	3	4	5
Probability that the site belongs to each Group	2.2%	38.8%	50.8%	7.8%	0.4%

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	-134.37	-135.66	3.18
Altitude (ft)	2674	2756.11	719.61
Depth-Avg (cm)	11.40	32.11	15.81
Velocity-Avg (m/s)	0.44	0.58	0.29
Precip. FEB (mm)	30.22	36.14	23.93
Precip. MAR (mm)	29.54	33.13	21.04
Precip. JUN (mm)	74.11	64.67	18.69
Precip. JUL (mm)	93.28	78.30	20.81
Rainfall JUN (mm)	47.91	52.72	13.46
April Max Temp (C)	2.28	1.38	3.74
Broadleaf Open (%)	0.33	0.68	1.62
Bryoids (%)	0.00	0.37	0.84
Mixedwood Open (%)	2.53	0.96	1.72
Wetland Herb (%)	0.00	0.03	0.10

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	2175.00	567.00	737.13	
Total No. of Taxa	15.00	10.56	6.13	13.2

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	1.00	50	162	142
Nemouridae	0.87	906	175	168
Baetidae	0.83	331	92	109
Simuliidae	0.82	0	37	55
Heptageniidae	0.80	488	311	288
Empididae	0.63	56	16	29
Chloroperlidae	0.60	0	32	38
Sperchontidae	0.59	6	13	22
Ameletidae	0.53	0	24	58
Perlodidae	0.52	106	10	14
Tipulidae	0.52	0	5	10

Using the predictive model with the RIVAPCS weighted probability of the sites predicted membership, we would expect 13.2 families at this site, but 15 families were observed.

Total abundance is well above average for this group and outside the normal range. Richness (total number of families) is slightly higher than expected.

Of the 11 families expected to occur (P>0.5), 4 (Simuliidae, Chloroperlidae, Ameletidae, and Tipulidae) were absent, although Tipulidae was expected at low abundance.

Of the six families characteristic of the group to which this site was predicted, two were absent (Simuliidae and Chloroperlidae).

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 provided.
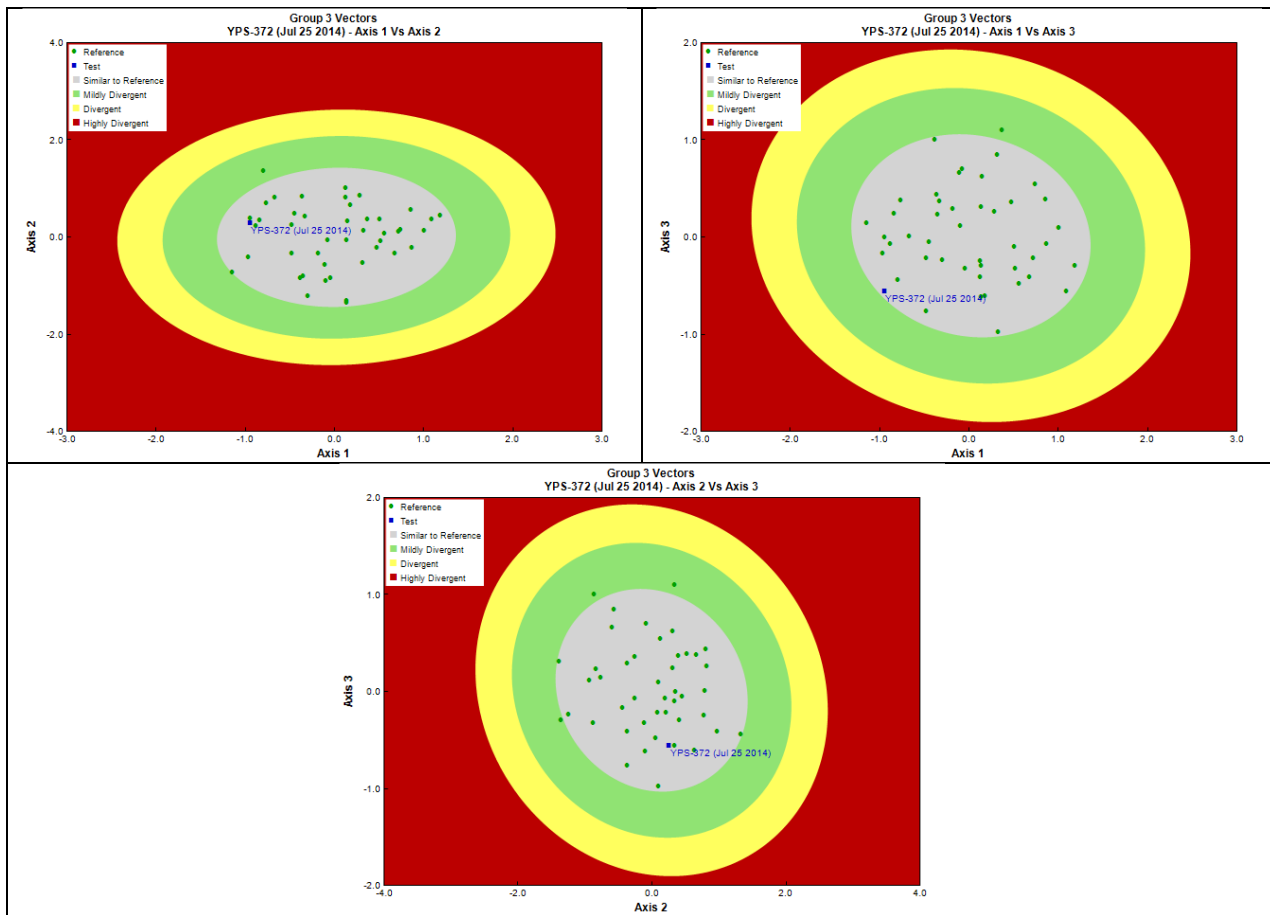
Assessment of Overall Site Condition

Vector 1 vs Vector 2	Similar to Reference
Vector 1 vs Vector 3	Similar to Reference
Vector 2 vs Vector 3	Similar to Reference
Overall	Similar to Reference

Using CABIN, YPS-372 is assessed as Similar to Reference.

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.

Site	YPS-372
Sample Year	2014
Status	Test
Bankfull Width (m)	7.3
Wetted Width (m)	2.4
Channel Depth Average (cm)	11.4
Channel Depth Max (cm)	17
Slope m/m	0.023
Slope (%)	2.3
Max Water Velocity (m/s)	0.8
Average Water Velocity (m/s)	0.44
Dominant Substrate-1st	6.4 – 12.8 cm (cobble)
Dominant Substrate-2nd	3.2 – 6.4 cm (pebble)
Surrounding Substrate Material	0.1 – 0.2 cm (sand)
Substrate Embeddedness	1/4 Embedded
Pools	Absent
Rapids	Absent
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 (µS/cm)	215.7
Specific Conductance (µS/cm)	327.8
DO (mg/L)	9.77
pH (pH)	8.4
TDS (mg/L)	
TSS (mg/L)	
Air Temp (Degrees Celsius)	17
Water Temp (Degrees Celsius)	7.1
Turbidity (NTU)	