

# DOWNSTREAM CHANGES IN A RIVER : WAITHE BECK

# CLASSIFIED DATA

SITE	DISTANCE DOWNSTREAM km	AVERAGE VELOCITY m/sec	CROSS SECTION AREA m <sup>2</sup>	DISCHARGE m <sup>3</sup> /sec (cumecs)	HYRAULIC RADIUS	AVERAGE LONG AXIS mm	AVERAGE POWERS SCORE (roundness)	INTER QUARTILE RANGE mm (sorting)
A	5	0.09	0.20	0.02	0.20	33	2.2	14
B	6	0.34	0.31	0.11	0.22	26	2.8	13
C	7.9	0.34	0.42	0.14	0.15	22	2.9	18
D	9.1	0.46	0.38	0.18	0.18	18	3.8	7
E	10.8	0.40	0.47	0.19	0.31	16	4.0	5
F	13.4	0.47	0.52	0.24	0.24	24	2.4	17
G	16.3	0.45	1.10	0.50	0.40	14	3.1	5
H	19.2	0.52	0.61	0.32	0.33	25	4.6	10

Look at each set of data in relation to distance downstream

- **FORMULATE A HYPOTHESIS**
- **DRAW A SCATTERGRAPH**
- **CALCULATE SPEARMAN'S RANK CORRELATION COEFFICIENT**
- **SEE IF THE RESULT IS SIGNIFICANT**
- **ACCEPT OR REJECT THE HYPOTHESIS**
- **REACH A CONCLUSION AND IDENTIFY AND EXPLAIN ANOMALIES**

n	95% confidence level	99% confidence level
8	0.643	0.833
9	0.600	0.783
10	0.564	0.746

The value of Spearman's Rank Correlation Coefficient (r) for any given value of n (number of pairs of data, 8 in our case) must be equal to or larger than that shown for the level of significance required on the significance table above

95% confidence level, we can accept the Hypothesis, this is a significant result

99% confidence level, we can accept the Hypothesis, this is a highly significant result