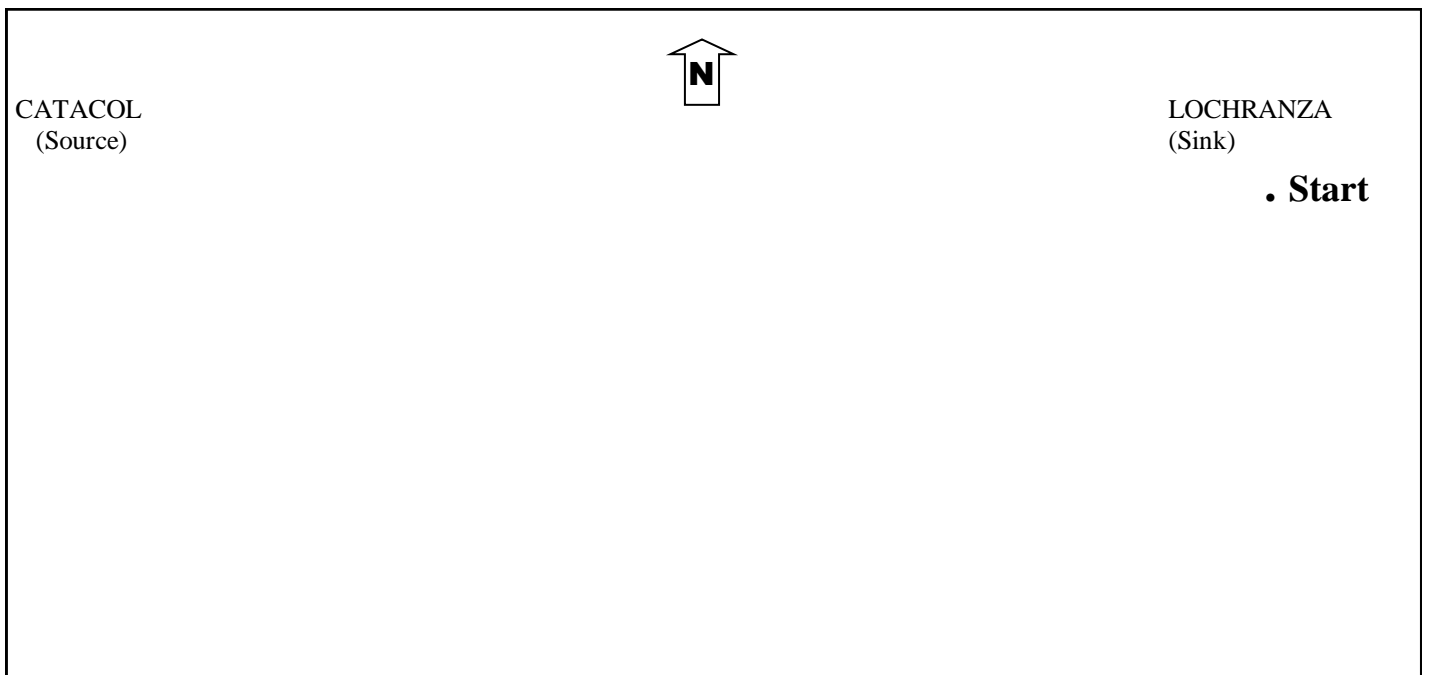


Long shore Drift Analysis

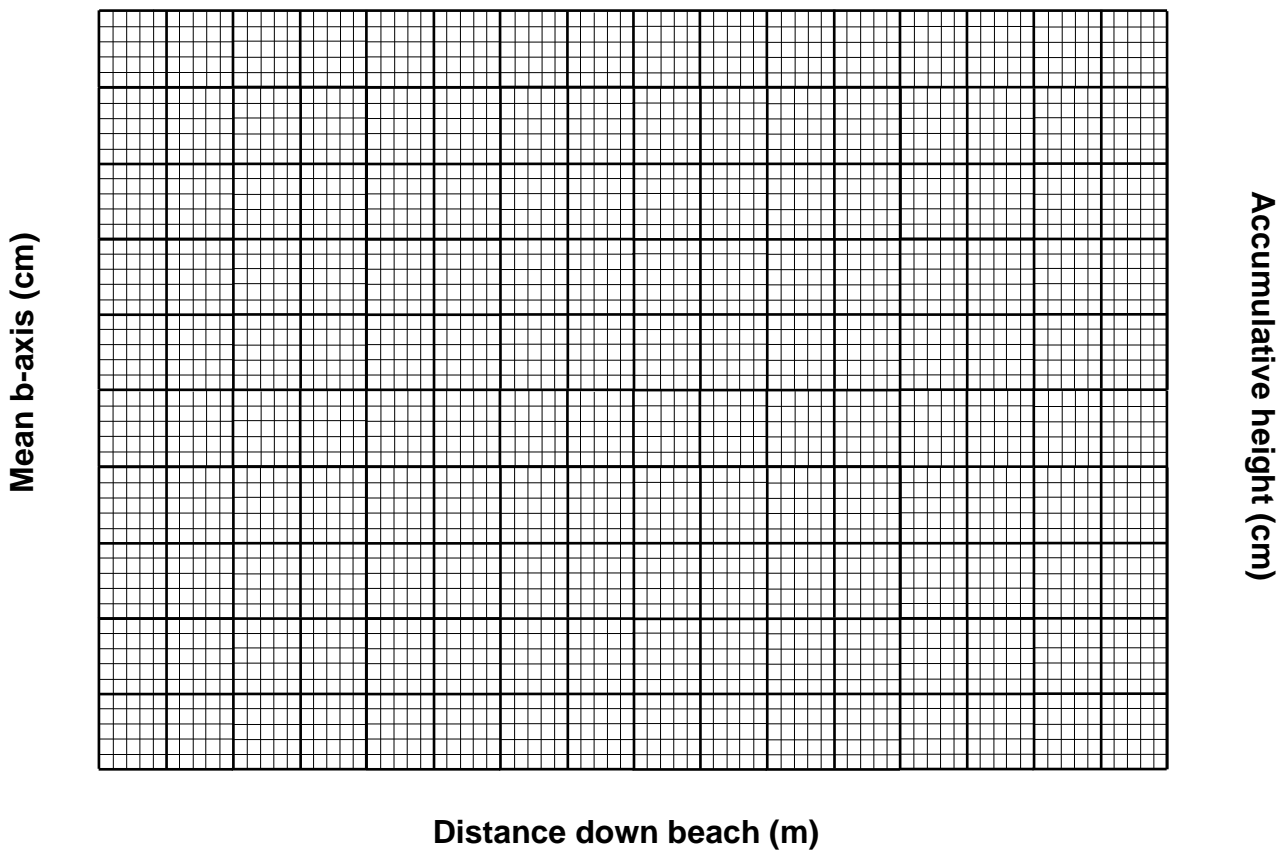
Distance (m)	Mean B-Axis (cm)	Mode Shape

Compass Constructed Coastline



Beach Profile Data Analysis

	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16
Mean B- Axis (cm)																
Accumm. Height (cm)																



Conclusions:

Mann-Whitney Test

The 'Mann-Whitney' test is used to see if there is any significant difference between two sets of data, here we are interested in the difference in size of the pebbles at our first and last sites.

Hypothesis:

Rank all the data as a whole. Calculate the 'U' statistic using the equations below:

Sample X: Catacol pebbles		Sample Y: Lochranza pebbles	
Pebble Size (cm)	Rank	Pebble Size (cm)	Rank
$\sum r_x =$		$\sum r_y =$	

Equation 1:

$$U = n_x \times n_y + \left(\frac{n_x (n_x + 1)}{2} \right) - \sum r_x$$

Equation 2:

$$U = n_x \times n_y + \left(\frac{n_y (n_y + 1)}{2} \right) - \sum r_y$$

Statistical Significance:

	2	3	4	5	6	8	7	8	9	10
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	1	1	1	2	2	3
4	0	0	0	1	2	3	3	4	4	5
5	0	0	1	2	3	5	5	6	7	8
6	0	1	2	3	5	6	6	8	10	11
7	0	1	3	5	6	8	8	10	12	14
8	0	2	4	6	8	10	10	13	15	17
9	0	2	4	7	10	12	12	15	17	20
10	0	3	5	8	11	14	14	17	20	23

Of the two U values we want to use the smallest value to estimate our statistical significance. Our results are significant if the U value is less than that in the critical values table opposite, if this is the case we can accept H₁ (our alternative hypothesis).

Conclusions:

Comparing the _____ I calculated the Mann-Whitney U value to be _____ this is _____ than the critical value of _____ at the 0.05 significance level. There I do not have/do have _____ % confidence that difference between the two samples _____ significant and I can reject my _____ hypothesis and accept my _____ hypothesis and accept my _____ hypothesis that _____

Spearman's Rank Correlation Co-efficient

To find out if the trend displayed by the graph is significant calculate the Spearman's Rank Correlation Coefficient (r_s).

Hypothesis:

	R1		R2	d (R1- R2)	d ²
Σd^2 (Total)					

No. of Paired Measurements	Significance Level	
	0.05	0.01
4	1.00	
5	0.90	1.00
6	0.83	0.94
7	0.71	0.89
8	0.64	0.83
9	0.60	0.78
10	0.56	0.75
11	0.52	0.74
12	0.50	0.78
13	0.48	0.67
14	0.46	0.65
15	0.44	0.62
16	0.43	0.60
17	0.41	0.58
18	0.40	0.56
19	0.39	0.55
20	0.38	0.53

Workings:

$$r_s = 1 - \frac{6 \Sigma d^2}{n^3 - n}$$

Conclusions:

I Calculated Spearman's Rank Coefficient to be _____ , this is _____ than the critical value of significance which is _____. Therefore I can say with less/more confidence that the relationship is/is not statistically significant (i.e. not due to chance). Therefore I accept/reject the null hypothesis.