Student 4_High Achieved

Research Question: How do characteristics of the Wairoa River and valley change with distance from the headwaters?

Presented data was similar to that presented by Student 5, but correct conventions were used and overall a high degree of accuracy was evident.

Findings

River cross sections: The width and depth of the Wairoa river channel is different in the three cross sections.

In site A the river is approximately 5-6 metres wide and averages about 0.7metres deep. This cross section also shows a very uneven bed with 3 small channels within the larger channel, as there were lots of large boulders (1). River erosion processes explain these characteristics… Large boulders have been eroded from the river banks but they haven't been broken down or carried away by the water (2). These would only be moved when the river is in flood… the cross section shows that the total volume of water is fairly small (3)…

Research Conclusion:

I can conclude from the collected and presented evidence that the characteristics of river depth, width and shape of surrounding land, change as you move from the headwaters to the mouth (4). The valley shape in the headwaters is a steep V shaped gradient which has been created by the river eroding vertically. At site C the valley shape changes to a flatter, gentle gradient nearer the mouth and flood plains have been formed through a combination of river erosion and deposition.

The width and depth of the river channel also changed and this relates to the overall widening of the river valley. At site C the river channel was 20m or more, wider than in the headwaters at site A and from our measurements the depth increased by about 5m (5). The channel sediment size and shape …The processes of erosion and deposition can explain the changes in the rivers characteristics at each site…

Overall each of the characteristics differ from the headwaters to the mouth but they each relate to the river process dominant at each site.

Research evaluation:

I think the strength of my research process was the collection of a range of data relevant to the aim. To collect this data the same method was used at each of the three sites to ensure they would be valid and as accurate as possible. I took river measurements for channel width, depth and rates of water flow using… Field sketches and photographs accurately and clearly show the wider valley characteristics. The river channel data allowed me to draw cross accurate detailed sections which accurately showed the different characteristics of the river channel. From the detailed and accurate cross sections it was possible to write valid and detailed findings (6).

There was only a minor weakness which was the data collection at Site A. It had lots of rapids so it was hard to measure depth accurately. The big boulders also made it hard to stand in some parts… (7).