Student 5: Low Achieved

NZQA Intended for teacher use only

Pollutants entering the local river are likely to have negative impacts both environmentally and culturally. A focal point of this pollution is wastes entering storm water drains which take untreated water from roads, roofs, footpaths etc. Pollutants such as hydrocarbons from cars and excess nutrients from lawn fertiliser run-off may alter the river habitat. This is detrimental to the native organisms in the river due to reduction in water and nutrient quality, eutrophications, harmful toxins and shift in the balance of the ecosystem and the organisms within it….

1

When it rains heavily there is also e.coli from human faeces found in the river from overflowing sewage pipes which is culturally unacceptable to iwi (and pakeha too). Local Kaumatua said it lowers the mauri of the awa and the mauri of the people by it.

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Pollutants enter the waterways through many access points. One such type of access are the storm water drains in our town and around our school. Pollutants are collected off the streets and the grounds by rainwater which takes it to the drains… grate coverings only stop the big solid pollutants.

Potential solutions…Long-term wise, I intend to raise education and awareness about water quality and its pollution through stormwater drains through the use of signs and warnings to help create a sustainable river… explain the difference between stormwater and waste water drains and where they go. This will be sustainable through education which will change the thoughtless behaviour of some people …and through this increase in water quality….

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Short term wise cleaning the river of pollutants and/or sedimentation will temporarily increase water quality by removing plastic and cleaning up the rocks that good macro-invertebrates live on but I choose a more long term solution to stop the source of the problem. Purchasing fish signs to go on the drains and organising publicity to make people know more about the issues.

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Data Collection [aerial photo of school provided showing location of drains with those that show signs of oil or paint pollution (stains on grates or dread grass nearby) highlighted]

We needed to identify all the drains so we could choose the ones where there were clear signs of pollution. I will survey some teachers and our form class to see if they hear of the action and if they will change their ideas up.

Time Plan

Term 1 [4 dates are given for mapping school drains, visiting and investigating local stream, another 4 dates are linked to iterations of action plan template completion]

Term 2 [5 weeks itemised with steps of action planning details developed focused on selection of fish signs to attach next to drains selected for their pollution and visibility, more data collection. Then finishing in week 5, “action plan carried out and report finalised. Report submitted.”]

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Modifications. The initial plan was too vague and inconclusive in nature being too ambitious to be realistic and achievable… The plan outline changed and evolved over time as it was reshaped to better suit the more realistic goals, … choosing only 3 of the 17 possible drains based on their locations.

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We used power tools to place the signs by drilling into the concrete and swept the dust away from the drains onto the grass with a hand brush.

Over the next week I asked all the teachers I had contact with that week (10 teachers) and all of them said they had heard of our action. 100% said it was a good idea and 60% said they would change their behaviour. For instance, two teachers said they would be more careful in telling students where to take liquid waste. The other teachers said they knew all of that already.

In my form class 71% said they had noticed the signs after they had been mentioned in assembly by Mr M and I. 92% said they understood what the problem was and now knew more things that shouldn't go in storm water drains such as acids, paint, oil and detergents. 7

…I think this data is valid because they were the honest opinions of the typical people in the environment that we were trying to help…it might have been more reliable if I would have surveyed all the teachers and staff and students but that would not have been very possible in the time frame. 8

Conclusion

In conclusion I believe that my personal action has benefits both myself and others in both subtle and small ways as well as larger more obvious benefits. Raising awareness and education as a method of forging a more sustainable future, namely through the improvement of environmental and cultural aspects of sustainability through my personal action has provided many positive benefits to myself, my community, my local environment and as a flow on result the entire planet's environments and ecosystems and the organisms that live within them. 9

While the action may be considered small, I believe that it will have many measurable and discrete positive effects through time. I believe that I have provoked thought and consideration of people's attitudes which will affect their behaviour so that less pollutants such as oil that blocks up gills go into our river… giving the macro-invertebrates and fish a better chance to survive so the food chain can be sustainable. The cultural aspect of mauri should also recover because of less pollution and more life in the river. This has a lot of meaning to the iwi. A healthier river will make iwi healthier in their beliefs. 10 11