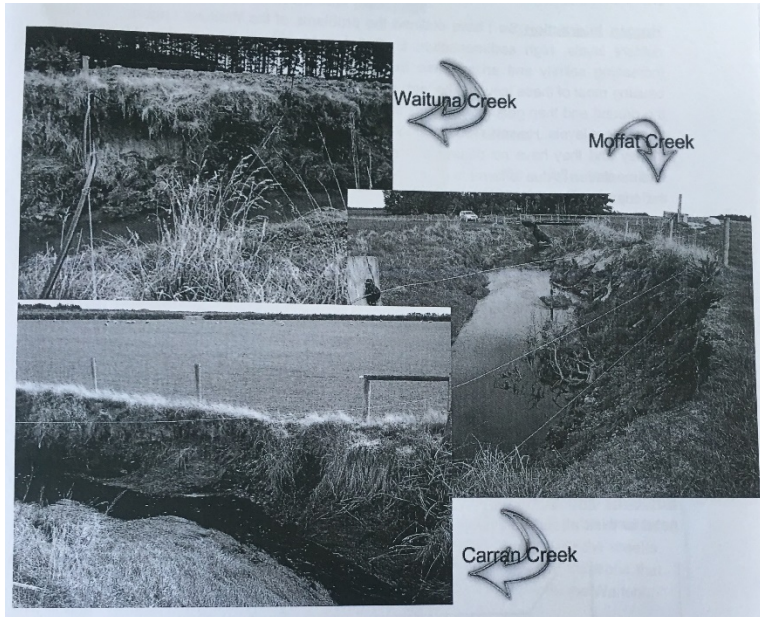


Waituna Lagoon and Farming

Student 2: High Merit

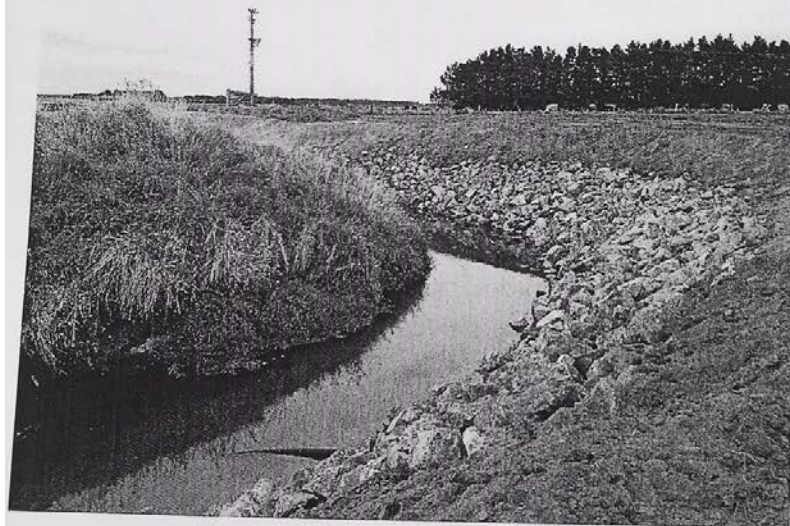
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.....These are the three main creeks that lead into the Waituna Lagoon. All of these creeks are in farmlands. From these photos you can see that the banks are high in case flooding occurs. You can also see that the fence lines are very close to the creeks. This is an important factor for the lagoon because cows excrete will run off into the stream causing high nutrients and E Coli levels to increase. Also, when the farmer puts fertilizer down it can run into the stream causing high nutrients as well, this allow for the weeds to grow and thus making the water slow down then with high rainfall, flood. ①

Human Interaction and Farming

...So I have outlined the problems of the Waituna Lagoon; the rising nutrient levels, high sedimentation, E Coli levels, decreasing oxygen in the water; increasing salinity and an increase in turbid water. Human interaction with the lagoon causing most of these issues. ①
The high nutrient levels relate to the fertilizer that leaches into the ground and then gets into streams and creeks causing that to flow to the lagoon raising the nutrient levels. However we need to remember that farmers are very conscious of their money and have no desire for the fertilizer to end up in the creeks. The increase sedimentation is due to farmers digging out banks and Southland's high rainfall washing off the topsoil into creeks which then flow into the lagoon. The increase in turbid water conditions is due to the high nutrients allowing algae and phytoplankton to multiply. ③
The E coli levels come from the effluent that is either over applied, or applied to closely to the creeks and streams that then lead to the lagoon. The increase in salinity is man's way of fixing their continuing mistake by opening up the lagoon to the ocean to flush out the extra sedimentation, high nutrients and algae. However the increase in salinity causes other organisms such as trout and other freshwater organisms to flee upstream to where the salinity is less. ②
All of these issues occur in the catchment and on farms. These things happen because it is either human error in over application of effluent or fertilizer, or it could be the fact that we as a nation are not doing enough to fix these issues. ③
All of our actions in the catchment or around the catchment directly relate to the lagoon. A direct consequence of human activity is lagoon being the closes to flipping (a term that is referred to the lagoon becoming unhealthy permanently which means it has increasing sedimentation and increasing nutrients which changes the balance of the ecosystem) as it has ever been. This is due to the continuing actions that happen in the catchment. ① ③



Solutions:

To the left are two photographs, before and after pictures on the Waituna Creek and these are the things that Environment Southland are doing to help improve the current condition of the Waituna Lagoon. You can see that the first photograph has high bank walls and a lot of dirt in contact with the water. In the second photograph you can see that the bank walls are less steep and also rocks were put into place to stop dirt and sediment to be washed away carried into the creeks. There are other solutions that are available for the Waituna.

Other options to help improve the lagoons conditions are things such as plants trees and native plants along the creeks to slow water down to

cause less erosion. However the risk with this is flooding, because Southland has high rainfall the creeks may not be able to handle the high rainfall. Many farmers that are in the Catchment are trying to help themselves and the Waituna and the same time. They are

An important option to help change the Waituna Lagoon is helping farmers understand best practices better. This is a guideline that farmers should follow so they cause as least damage to the environment as possible. A main issue with farmers in the catchment is the application of fertiliser. An option for farmers to do a course that the government can situation so the workers understand the application of fertilisers need to be in dry conditions so the soil has time to absorb the nutrients otherwise the fertilizer just leaches into the soil and finds its ways to the creeks and then ending up in the Waituna Lagoon.

I believe the lagoon is till fixable and with the right steps from people necessary it is possible that the lagoon can be healthy once again. Sea grass also known as Ruppia keeps the lagoon going. I believe fixing the lagoon will all start by coming together to make the change. Ngai Tahu, Farmers, Environment Southland and all who care because to help the Waituna Lagoon it all starts with a choice.