

# Your submission to Clean Water

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## Clause

What are your thoughts on the proposed swimming targets, for example, on the timeframes and categories?

## Notes

I think the proposed swimmable freshwater target is a great start and the plan has traction as it has been backed by national regulations requiring stock to be fenced. This is fantastic. I think the plan needs to be extended upon. The government needs to make further requirements to implement the plan. Synthetic fertilizers and pesticides, livestock feed and additives and genetically modified organisms need to be taxed at a higher rate than less polluting micro-organic fertilizers to reduce toxicity of water discharge. Perhaps New Zealand could be bold and place a total ban on non-organic fertilizers and pesticides to discourage poor farm management practices. Increasing tax is another way to influence farmers however this will be a slower process to implement change. If the government decides action needs to be taken immediately then I recommend that we adopt a policy that does not allow synthetic fertilizers and pesticides nor genetically modified organisms. Farmers should use less polluting micro-organic fertilizers. We have the potential to increase revenue as organic produce is valued internationally.

## Clause

What do you think about the proposed amendments to the Freshwater NPS?

## Notes

The proposal to create a freshwater Accounting system is very good. This helps to strengthen the assessment of our current ecological systems. I think it is important to establish a monitoring system. The proposed amendment recognizes that human health must be protected and it is a compulsory value to protect the health of our ecosystems.

## Clause

What are your thoughts on the proposed stock exclusion regulation, for example, the timeframes and stock types to be excluded?

## Notes

It is very important to ensure that cattle are kept out of waterways. It is crucial that our channels and our land are well managed. Fences keep cattle out of waterways and they should be mandatory for farmers managing livestock in New Zealand.

## Clause

Do you have any other comments on the contents of the Clean Water discussion document?

## Notes

I recommend reading Hiroyuki Konuma and Wang Ying's PDF titled "Guidelines to control water pollution from agriculture in China." There are a number of recommendations in this article which I recommend for New Zealand. The first recommendation is to move farmer's field boundaries away from the sides of streams and rivers. To enforce this a new regulation could be made where there must be a three meter uncultivated strip of land on either side of waterways. The buffer zones would be designated catchment areas to be planted with grasses and trees. These buffer zones should be implemented also to control soil erosion. (pg.21) In the late 1950's John Greenfield discovered Vetiver Grass hedges. Vetiver grass have dense root systems which grow up to three meters wide. In India, the Caribbean and in Fiji farmers have planted these grasses 10 cm apart on the contours of their land forming hedges. These slow down runoff from the land and prevent soil erosion. They are tough enough to assist in storms and are also fire resistant. They produce the best results when they are planted in double staggered rows. (pg 23) We should look at ways to tackle removing pollutants from the aquaculture system. The following points are recommended in the article referred to above: a) Applying yeast, lactobacilli, actinomycetes, streptococci to reduce sulfide, nitrate, and nitrite in water levels and increase oxygen levels. (pg 92) b) increasing the number of filter-feeders/bottom feeders in lakes who feed on algae. c) designing floating rafts of fruit and vegetable plants whose roots absorb excess levels of phosphorus and nitrogen in the water. (Biocleaning) Our main strategy should be to improve the environment and the economy at the same time. We need to stimulate and encourage farmers to change practices that result in improved ecological conditions immediately. For example, we begin to strengthen the assessments of pollution by establishing a monitoring system where water reports are a government requirement. We introduce new laws whereby the government increases tax rates on chemical fertilizers and pesticides. Less polluting micro-organic fertilizers are cheaper. Taxes can be a method of discouraging poor farming management practices. (pg 144 and 145) We assess whether farmers are currently overusing fertilizer. We ensure that only the right kind of fertilizer and pesticides can be used and ensure that they are being used only when needed. This can be called the action threshold. Finally, we reward farmers who excel in demonstrating good conservation management practices. We begin to rate farms who have pollution free production bases. We make it a high priority to educate farmers and communities about the strategies they can adopt to protect waterways and improve ecological conditions. Subsidies could be offered to farmers for restoration of vegetation in buffer zones along streams and tributaries. (pg 146)