

Environment Waikato Integrated Catchment Management update Waipapa catchment

The story so far

Nutrient losses from farming have increased nutrient loads in our streams and rivers and that can lead to algal growth, resulting in degraded water quality and damaged aquatic life. The current intensification of farming is making this situation worse and the conversion of large areas of forest to farm land further adds to the problem.

As a society we need to make adjustments to reverse these trends and Environment Waikato is seeking solutions that will be practical and acceptable for everyone. There are no easy answers but we are now working with all sectors of the agriculture industry to find better ways of addressing the problems.

Seeking farmer help with solutions

In late 2006 Environment Waikato invited everyone in the Waipapa catchment to a meeting about Integrated Catchment Management (ICM). We were seeking a combined catchment approach to see how much we could collectively improve the situation with a concerted community effort.

The outcome of that meeting was a decision to work farm by farm through the catchment to work out what opportunities there were for on-farm changes that would reduce the loss of nutrients from the farm systems.

So we've spent some time developing the concepts of comprehensive farm planning to support that approach and we've worked with farmers to complete four farm plans in the catchment. These have been reviewed by AgResearch and the results of that work were presented at a Field Day on Kees and Marianne Tanja's farm on 31st of March 2008. The information we presented at the field day is summarized below. Now we're working with another two farmers to prepare farm plans for them too. We have a list of people ahead of us interested in gaining a farm plan, if you are also keen please let us know.

What we've learned

On each farm we used the OVERSEER® model to calculate the nutrient losses under a range of best practice scenarios and then on one farm we have matched that against the expected effect on gross margins. The results show that improvements can be made in most farm operations, although some are already quite efficient in their use of nutrients (meaning they don't lose much).

As expected, there are improvements that can be made in effluent management systems that not only improve nutrient use efficiency but also reduce the risks of bacterial contamination and nutrient loss to water bodies.

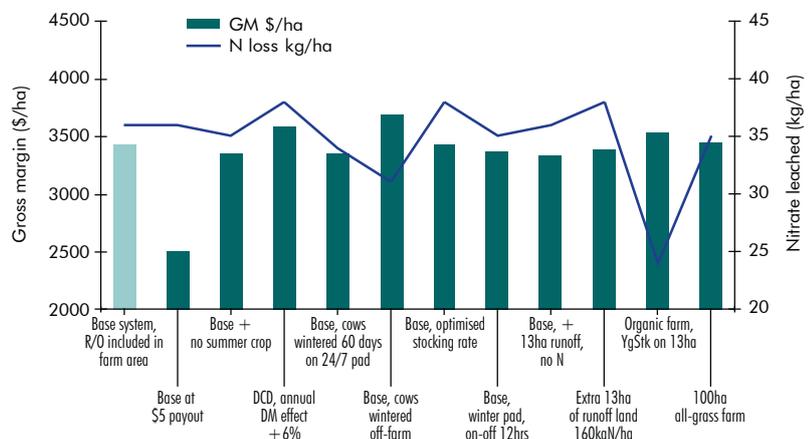
The most successful options for reducing nutrient losses involve adjustments to winter management, because this is when most nutrients are lost through drainage. So stopping fertilizer applications in winter and getting stock off paddocks, either on to feedpads, standoffs, or completely off farm, shows the best results, both environmentally and economically. However wintering cows off farm merely shifts the problem into another catchment and farmers have told us that this should not be considered as a solution. The effects of all these modeled technologies are of course dependent on the specific farm situation.

Only three technologies achieved a nitrogen loss below 30kg/ha. These were; no N at all, no N except for effluent, and organic farming. The first two of these showed a significant drop in gross margin, and organic farming showed a slight improvement, due to the premium for organic product..

Accurate modeling of the effectiveness of nitrification inhibitors was not possible as this technology had not been included in the Overseer model at the time, but the model has now been updated so further developments can be expected on this in the next few months.

Of course there are still many questions to answer. The biggest of these is how to get the nitrogen losses down below 30kg/ha/y and still maintain a viable business. At this stage we think that to stop the decline in water quality in the river we need to be aiming for low to mid twenties. Combinations of the various options may achieve further gains, but it is clearly not going to be easy with currently available methods.

The good news is that we have been able to reduce some farm losses from mid forties to mid thirties and that is the kind of progress we were hoping for.



The graph shows the net change in nutrient loss and gross margin for a range of best management practices as modeled by OVERSEER®.

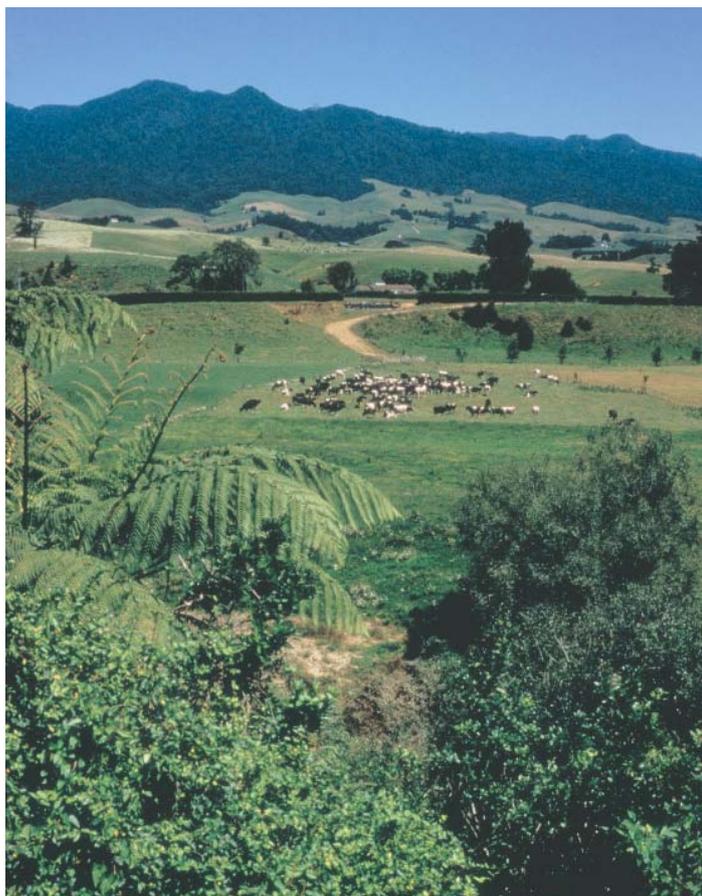
What's involved in a farm plan

The process of farm planning begins with a nutrient budget, usually prepared by your fertilizer company. Environment Waikato staff then have an in-depth look over your farm system with you to look at the potential areas for adjustment and look over the farm to gain an appreciation of how you run it and where the trouble spots and opportunities might lie.

This might include erosion, stock getting into streams, effluent management (compliance with the rules), waste management, soils, or even how to get rid of old chemicals. Then there's a discussion about various options and how they might fit into your farm system.

Once all the issues have been discussed and a general understanding on what might work is sorted out, staff write that up as a plan, including any assistance that might be available from us, and check that you agree with it. Once you agree, it's then a matter of getting on and doing it.

Farmers who have completed farm plans say that they have learned things they never knew about their farm, and found it a really interesting process. To get started on a farm plan for your property, just phone any of the contacts listed at the end of this newsletter.



What's happening next

We are now in the process of writing up what we know about the catchment into a Catchment Management Plan. We expect to have a draft of this available in July. It will detail what we know about the catchment in terms of natural resources and how they are used, identify the issues as we currently understand them, and indicate how we might collectively deal with those issues.

Once we have completed the draft plan we will distribute it to everyone in the catchment and ask for feedback. This will be your chance to tell us what you think, either about the process we've been going through, or about the plan. We are hoping to be able to meet with farmers in September to get your ideas for improvements on the plan.

In the meantime, we are continuing to work with farmers to increase the coverage of farm plans throughout the catchment. At the moment there's a short waiting list, so it would be helpful to contact us early to arrange a visit to your farm so we can programme it to suit.

Rules guidelines

For sharemilkers who have recently changed jobs (or anyone else in the catchment for that matter), if you are needing to know our rules with regard to effluent and farm management activities please contact Ross Abercrombie (contact details below) for a copy of our rules guidelines. These are a simple breakdown of the legal rules for farm related activities and will enable you to comply on farm. It is your responsibility to know the rules on farm and farm accordingly, but if you need any further explanation just give us a call.

Free advice

If you have any questions about the project we are happy to explain further, either by phone, email or in person. You might also have some concerns or questions about things on your own farm that you would like some advice about. Our staff are available to provide free advice on a wide range of environmental and resource management topics. Although there is a short waiting list for a full farm plan, we can drop in to check out a single issue and give you advice. And we can also access a number of other experts if the issue is outside our own area of expertise.

Contacts

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