

Nutrient Management

Environment Southland is promoting the use of a nutrient budget as good management practice to ensure farmers gain a greater awareness and understanding of nutrient management for their farm.

While having a nutrient management plan or nutrient budget alone won't improve water quality, the information in the budget will help you make practical decisions that could minimise nutrient losses from your farming system.

Knowing about nutrient budgets will put farmers in a good position to be involved in community discussions around setting and meeting catchment limits. Environment Southland is required to go through this process to fulfil the objectives in the National Policy Statement for Freshwater.

Under the proposed Southland Water and Land Plan most farmers are now required to have a nutrient budget as part of your overall farm environment management plan. Check the proposed plan for key dates by which you must have a farm plan.

Nutrient budget

Nutrient budgets provide an estimate of all the nutrient inputs and outputs sourced from fertiliser, dairy effluent and feed supplements for a block of land. The calculated outputs of Nitrogen (N) & Phosphorus (P) can be used to predict the amount of N leaching below the root zone and the P runoff risk, which can be used to assess the potential for impacts on nearby rivers and streams. Nutrient budgets are a management tool for ensuring that nutrients leaving the farm are replaced and that excessive amounts of N & P are not being lost to potentially contaminate ground and surface water.

OVERSEER® Nutrient Budget

OVERSEER® is a software programme that estimates nutrient flows through tall parts of a farm. It provides estimates for off-farm losses of nutrients including nutrient leaching and run-off, phosphorus run-off, risk index, and greenhouse gas emissions.

The programme requires a wide range of information, including soil type and slope, soil tests, fertiliser history, paddock use and supplementary feed. Don't be put off as you and your fertiliser representative or farm consultant probably have most of this information.

The outputs provided will be based on your current farming system, and should be considered on an annual basis (or longer if there are no changes to your farming system). While the information will be useful to you for farm planning, the quality of outputs is reliant on spending some time entering the correct data.

For more information contact your nutrient management advisor.

Understanding phosphorus (P)

Phosphorus is a nutrient that can encourage the growth of nuisance aquatic plants. These plants can choke up waterways and out-compete native species. Ideally, total phosphorus levels in water should be less than 0.04 grams per cubic metre to prevent excessive growth of nuisance plants.

Phosphorus holds strongly to soil particles. The major source of phosphorus loss from farms is with sediment as it moves with water in overland flow and tile drains.

Understanding nitrogen (N)

Nitrogen is a nutrient that can encourage the growth of nuisance aquatic plants. These plants can choke up waterways and out-compete native species. Nitrogen is not held long in the soil. Nitrogen not utilised by plants leaches below the root zone and is lost to the environment. Excessive nitrogen in water can cause sudden growth in algal blooms followed by large die offs where dead plant material blocks water channels or creates an anaerobic smothering layer.

What is a Nutrient Management Plan?

Nutrient management plans are like financial budgets. They're useful tools to plan ahead and keep track of what's coming in and going out on an individual farm. Taking time to understand nutrient cycling for your farming system will make it easier to achieve sustainability over the long term, both in terms of economic and environmental goals.

Nutrient management plans combine all the tools that science has produced to allow the trained nutrient management farm advisors to develop fertiliser recommendations, which maximise the productivity of individual farms while minimising or mitigating the environmental impacts of nitrogen and phosphorus loss to surface and groundwater.

Benefits of a Nutrient Management Plan

- Cost savings when fertiliser type and application method is optimised for uptake
- Reduction of nutrient losses and environmental effects with the uptake of suggested mitigation strategies
- Monitoring of changes for continual improvement such as fertiliser performance and benefits of mitigation practices

Where to go for assistance

It is recommended an experienced and accredited nutrient management adviser, or accredited consultant with a good understanding of nutrient management tools and farming systems, is engaged to help formulate a nutrient management plan for your farm.

For further information on nutrient management:

- Your fertiliser company (i.e., Ballance®, Ravensdown)
- Fertiliser Association of New Zealand (www.fertiliser.org.nz)
- New Zealand Fertiliser Quality Council (www.fertqual.co.nz)
- The Fertiliser and Lime Research Centre (www.massey.ac.nz)
- DairyNZ or Beef+LambNZ
- Farm consultants
- Foundation for Arable Research
- Horticulture NZ (HortNZ)
- OVERSEER® (www.overseer.org.nz)

Credits: Fertiliser Use on New Zealand Dairy Farms – www.fertiliser.org.nz

