



Synthetic nitrogen fertiliser cap factsheet

Essential Freshwater is part of a new national direction to protect and improve our rivers, streams, lakes and wetlands. The Essential Freshwater package aims to:

- stop further degradation of our fresh water
- start making immediate improvements so water quality improves within five years
- reverse past damage to bring our waterways and ecosystems to a healthy state within a generation.

Te Mana o te Wai is fundamental to all freshwater management

Te Mana o te Wai recognises the vital importance of water. It expresses the special connection that New Zealanders have with fresh water. By protecting the health of fresh water, we protect the health and well-being of people and our ecosystems. When managing fresh water, Te Mana o te Wai ensures the health and well-being of the water is protected before providing for human needs or enabling other uses of water. Through discussions with regional councils, tangata whenua and communities will have a say on how Te Mana o te Wai is applied in freshwater management locally. More information can be found in the [Te Mana o te Wai factsheet](#).

Who should read this factsheet

This factsheet is part of a [series](#) and provides information on the new regulations for the application of synthetic nitrogen fertiliser to pastoral land. It is primarily intended for council staff but may also be of interest to land users, iwi, the wider agricultural industry, farm advisors and consultants, and anyone else with an interest in freshwater policy.

What are the regulations and when do they apply?

From 1 July 2021 onward, a **synthetic nitrogen fertiliser cap** will be in placed on any contiguous parcel of pastoral land.

The nitrogen component of any synthetic nitrogen fertiliser applied to that land must not exceed 190 kilograms per hectare per year (kg/ha/yr).

Synthetic nitrogen fertiliser is defined in the National Environmental Standards for Freshwater (NES) as any substance (whether solid or liquid) that is more than 5 per cent nitrogen by weight and is applied to land as a source of nitrogen nutrition for plants. It includes any manufactured urea, diammonium phosphate or sulphate of ammonia.

This excludes composts, soil treatments and or other fertiliser that is derived from plant or animal waste and is minimally processed (eg, by being composted, mixed, dried and pelleted).

The nitrogen cap is one of several regulations in the NES that aim to limit the degradation of New Zealand's freshwater ecosystems due to nutrient enrichment.

What the regulation applies to

Pastoral land

The nitrogen cap applies to land that is in **pastoral land use**. Here this refers to land used for the grazing of livestock but does not include land use to graze livestock on the stubble of arable crops.

The definition of pastoral land use encompasses two types of grazing land:

- pasture (where mainly grass is grazed)
- other pastoral land (where annual forage crops are grazed in situ).

The two limits to be aware of are:

1. The limit of 190 kg/ha/yr of nitrogen **averaged over the whole area in pastoral land use within each contiguous parcel** of land on the farm
2. An absolute limit of 190 kilograms of nitrogen per year **on any 1 hectare of pasture**.

The regulation applies regardless of the type of livestock that are grazing, whether dairy cattle, beef cattle, dairy support cattle, sheep, pigs, deer, poultry and so on.

Nitrogen limit for pasture

Each hectare of pasture has a strict synthetic nitrogen limit of 190 kilograms per year. No areas of pasture may exceed this cap without a resource consent.

Nitrogen limit for other pastoral land (eg, land use for fodder crops grazed in situ)

On other pastoral land, due to the nutritional needs of some in-situ plants, more than 190 kg/ha/yr of nitrogen may be applied, provided that corresponding reductions are made to the nitrogen being applied to pastoral land on the same farm so that the average across all the land in pastoral land use is no greater than 190 kg/ha/yr.

What the regulation does not apply to

Other arable land use – no nitrogen limit

The regulations do not apply to any land in arable use for the whole year nor to areas where livestock are grazed on the crop stubble from arable land uses. The regulations exclude the grazing of livestock on arable crop stubble from the definition of 'pastoral land use'.

Reporting and monitoring on fertiliser use

No later than 31 July each year, the person responsible for operating **any dairy farm land** must provide the relevant regional council with information that can be used to calculate the application rates of nitrogen per hectare per year for the prior year (being the 12 months before 30 June).

The first report is due by 31 July 2022 based on data recorded from 1 July 2021.

Dairy farm land in the regulations refers to land used to graze cattle that are farmed to produce milk, and includes bulls that mate with those cattle and their unweaned calves.

This does not include dairy support land.

The information that needs to be provided includes:

- the area of land in pasture and in other pastoral land uses, and the area in non-pastoral use (note that due to land moving between uses throughout the year, these areas are likely to sum to an area greater than the contiguous area of the farm)
- the type of synthetic nitrogen fertiliser applied to the land as well as the receipts of their purchase
- the rate of synthetic nitrogen fertiliser applied per hectare of each contiguous land parcel broken down by land use
- the dates on which the synthetic nitrogen fertiliser was applied (see rule 36 of the NES for details).

This applies regardless of whether the synthetic nitrogen fertiliser use requires a resource consent or not.

The Ministry for the Environment will work with the dairy sector, fertiliser companies and councils to establish reporting templates to make reporting as efficient as possible.

What are the conditions for resource consent?

The land user will not need a consent to discharge synthetic nitrogen fertiliser on pastoral land if the amount of nitrogen applied is less than both of the limits outlined above.

The land user will need a consent if applying more than either of the limits for nitrogen from synthetic nitrogen fertiliser because this is a non-complying activity.

What are the conditions for obtaining resource consent?

To be considered for a non-complying activity resource consent, the applicant will first need to satisfy section 104D of the Resource Management Act 1991 (RMA), meaning that:

- either the adverse effects of the activity must be minor
- or the activity will not be contrary to the objectives and policies of the relevant regional plan.

Additionally, an applicant must also satisfy one of the two following options.

Option 1: Create a synthetic nitrogen reduction plan

If an applicant cannot reduce their application of synthetic nitrogen fertiliser to below both of the limits by the time the regulation comes into effect (1 July 2021), they can apply for a consent that will give them until 1 July 2023 to reduce their fertiliser use.

The consent may be granted if the applicant provides the relevant council with a synthetic nitrogen reduction plan that shows how the applicant will reduce their nitrogen applications to ensure they comply with the nitrogen limits by 1 July 2023.

Any consents granted using this pathway must impose conditions that require the consent holder to:

- comply with the synthetic nitrogen reduction plan they set out
- report on their yearly synthetic nitrogen fertiliser use each year.

This consenting option is designed to give farms the time to adjust their practices so they can comply with the limits.

Consents granted via this pathway must not be granted for a term that extends beyond 1 July 2023.

Option 1 will no longer be available after 1 July 2023, because the relevant regulations will be repealed.

Option 2: Obtain reports from qualified expert

For a consent to be approved under this option, the applicant must show the regional council that environmental impacts will be equivalent to or *less* than they would be under the 190 kg/ha/year limits of nitrogen described above, as follows.

The applicant must provide the regional council with a report from a suitably qualified or experienced practitioner, such as a farm planner or accredited nutrient advisor. The report must:

- describe 'good practices' for applying synthetic nitrogen fertiliser to the pastoral land in question
- describe a 'baseline rate' for the land in pastoral land use on the basis of these good practices at the 190 kg/ha/year limits of nitrogen
- state that the granting of the consent would not result in nitrogen entering water at a rate exceeding the baseline rate.

Baseline rate

The **baseline rate** means the rate at which nitrogen would leach into water if fertiliser were applied using good practices, while not exceeding the 190 kg/ha/yr limits of nitrogen as described above.

This evaluation must be prepared on the basis of the specific conditions present on the land, such as land slope and type of crops or livestock.

Assessment of the effect of granting the consent

After determining the baseline rate, the suitably qualified and experienced practitioner must assess the consent application against that rate to determine whether granting the consent would exceed it.

In practice, this means the practitioner will have to assess the adequacy of the consent application's proposed fertiliser application practices and mitigations as part of their report.

The consent authority must be satisfied that the matters are adequately addressed in the report.

The good management practices for the land may not be the same as the current land practices. For example, the good management practice for applying nitrogen to a piece of accessible flat land may involve discharging fertiliser from a ground vehicle, while the current practice may be to crop dust via aircraft over all land on the farm. What is good management practice will vary by location and will be part of the assessment by the suitably qualified or experienced person.

Granting or declining the consent

The consent authority can only grant the consent if it imposes conditions that ensure:

- the nitrogen entering water does not exceed the baseline rate
- the consent holder reports on their synthetic nitrogen fertiliser use each year.

It is up to the consent authority to decide which conditions are appropriate. These may include input or output controls and specific monitoring requirements. If the consent authority cannot impose appropriate conditions to achieve these outcomes, it must decline the consent request.

Being sure the baseline rate will not be exceeded will likely call for conditions that are more stringent than the 'good practices' used to determine the baseline rate; for example, sometimes 'best practices' for the land and activity type will be appropriate (eg, reducing stock).

Any resource consent granted via this pathway must be for a term no greater than 5 years.

Existing consents and activities

The relationship between these new regulations and existing consents or existing lawful activities is set out in section 43B of the RMA. In general:

- consents granted before gazettal¹ of the regulations will prevail until they are reviewed or expire
- consents will also prevail if a decision was made about whether or not to notify the relevant consent application before gazettal of the regulations
- activities that require a consent under the regulations may be able to continue temporarily under section 20A(2) of the RMA if:
 - they were permitted, or allowed without a consent, and lawfully established before the relevant regulations commencing
 - the effects of the activities are of the same or similar character, scale and intensity as they were before commencement

¹ Gazettal occurred on 5 August 2020.

- a consent is applied for no later than 6 months after the regulation took effect (1 July 2021) . The activities may continue until the consent application, and any appeals, are finally determined.

A regional rule, or the conditions of a resource consent, can be more stringent than these regulations. If this is the case, the more stringent regional rule or consent prevails over the regulations.

Why these regulations?

Nitrogen losses to water (termed discharges) arise from both leaching of nutrients into soil and overland flow carrying nutrients into waterways.

High nitrogen levels in rivers are associated with a range of adverse effects on the ecological health of waterways, with potential adverse impacts on the suitability of water for recreation and as a drinking water source for humans and livestock.

Nitrogen losses are generally highest under intensive dairy farming, vegetable growing and some other intensive livestock and arable cropping systems. Use of nitrogen fertiliser has increased almost eight-fold over 1990–2019.²

While setting a cap for other sectors is not feasible, DairyNZ data indicates diminishing economic returns occur at fertiliser application rates above 200 kilograms nitrogen per hectare, because the pasture response curve flattens out.³

The cap is intended to be an immediate measure to halt the highest fertiliser application rates, with long-term management of effects falling under the National Policy Statement for Freshwater Management 2020. The Government intends to review the fertiliser cap by 2023 to consider whether the level of the cap should be adjusted.

In the longer term, councils setting environmental limits on nitrogen loads to waterways, combined with freshwater modules of farm plans, will ensure fertiliser rates are appropriate to the land use, soil type and catchment where each farm is located.

The cap of 190 kg/ha/yr of nitrogen is an uppermost limit not a target. Farms already applying lower levels of nitrogen from synthetic nitrogen fertilisers should continue to apply it at lower rates.

More about the Essential Freshwater package

The package includes several new national rules and regulations including:

- new [National Environmental Standards for Freshwater](#)
- new [stock exclusion regulations](#) under section 360 of the RMA
- amendments to the [Resource Management \(Measurement and Reporting of Water Takes\) Regulations 2010](#)

² Ministry for the Environment. 2020. *New Zealand's Greenhouse Gas Inventory 1990–2018*. Wellington: Ministry for the Environment.

³ Pinxterhuis I. 2019. *Tactical use of nitrogen fertiliser*. Hamilton: DairyNZ.

- the [National Policy Statement for Freshwater Management 2020](#), which replaces the [National Policy Statement for Freshwater Management 2017](#)
- [amendments to the RMA](#) to provide for a faster freshwater planning process
- [amendments to the RMA](#) to enable mandatory and enforceable freshwater farm plans and the creation of regulations for reporting nitrogen fertiliser sales.

Factsheets in this series

The full set of Essential Freshwater factsheets is available on our [website](#).

Find out more and give us feedback

Contact us by emailing freshwater@mfe.govt.nz, or visit the [Essential Freshwater page](#) on our website.

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Published in December 2020 by the
Ministry for the Environment with input from the Ministry for Primary Industries
Publication number: INFO 975



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Environment
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