

Nitrogen cap guidance for farm support services

Explaining sections 32–36 of the National Environmental Standards for Freshwater 2020



Ministry for the
Environment
Manatū Mō Te Taiao



Te Kāwanatanga o Aotearoa
New Zealand Government

Disclaimer

The information in this publication is, according to the Ministry for the Environment's best efforts, accurate at the time of publication. The Ministry will make every reasonable effort to keep it current and accurate. However, users of this publication are advised that:

- The information provided has no official status and so does not alter the laws of Aotearoa New Zealand, other official guidelines or requirements.
- It does not constitute legal advice, and users should take specific advice from qualified professionals before taking any action as a result of information obtained from this publication.
- The Ministry for the Environment does not accept any responsibility or liability whatsoever whether in contract, tort, equity or otherwise for any action taken as a result of reading, or reliance placed on, this publication because of having read any part, or all, of the information in this publication or for any error, or inadequacy, deficiency, flaw in or omission from the information provided in this publication.
- All references to websites, organisations or people not within the Ministry for the Environment are provided for convenience only and should not be taken as endorsement of those websites or information contained in those websites nor of organisations or people referred to.

Acknowledgements

The Ministry for the Environment thanks KapAg Ltd for their input and the following organisations for reviewing drafts of this guidance, though none is responsible for the final content: Ballance Agri-Nutrients; Bay of Plenty Regional Council; Choose Clean Water; DairyNZ; Environment Canterbury; Environmental Defence Society; Environment Southland; Federated Farmers; Fertiliser Association of New Zealand; Fonterra; Foundation for Arable Research; Greenpeace Aotearoa; Horizons Regional Council; Ravensdown; Waikato Regional Council.

This document may be cited as: Ministry for the Environment. 2021. *Nitrogen cap guidance for farm support services: Explaining sections 32–36 of the National Environmental Standards for Freshwater 2020*. Wellington: Ministry for the Environment.

Published in October 2021 by the
Ministry for the Environment
Manatū Mō Te Taiao
PO Box 10362, Wellington 6143, New Zealand

ISBN: 978-1-99-003390-2
Publication number: ME 1604

© Crown copyright New Zealand 2021

This document is available on the Ministry for the Environment website: environment.govt.nz.

Contents

Introduction	5
Purpose	5
Background	5
Nitrogen cap	8
Synthetic nitrogen vs synthetic nitrogen fertiliser	8
Biological and mixed fertilisers	8
Identifying contiguous landholdings	9
Pastoral use land (any grazed land)	10
Harvested pastoral crops (silage, hay, and cut-and-carry fodder)	11
Seed crops	11
Arable crops, horticulture and forestry	11
Crop stubble grazing	11
Calculating the nitrogen cap	12
Farm support services and the nitrogen cap	13
Dairy farm nitrogen reporting to the regional council	14
Existing use rights	14
Non-complying activity consents	15
Appendix A: Calculating synthetic nitrogen use	17
Appendix B: Nitrogen cap regulations	18

Tables

Table 1:	Checklist of key synthetic nitrogen cap management tasks for farmers	7
Table 2:	How the nitrogen cap applies to different categories of pastoral use	10
Table 3:	Clarification examples	Error! Bookmark not defined.

Figures

Figure 1:	How the nitrogen cap applies to different farming operations	6
Figure 2:	Contiguous landholdings	9

Introduction

Purpose

This guidance document clarifies for farm advisors and other farm service providers, what is required by the regulations that cap the use of synthetic nitrogen in fertiliser.

Background

The nitrogen cap sets a yearly limit on the amount of synthetic nitrogen that farmers may apply to the grazed land on each of their contiguous landholdings (that is, on each separate block of land that has no shared boundary with other parts of the farm).

The cap is one of several government regulations aimed at limiting the impacts of nitrogen on our waterways.¹ Underpinning these regulations is the principle of Te Mana o te Wai which requires that water quality and ecosystem health be prioritised over any human activities that might cause harm, such as, in this case, the excessive use of synthetic nitrogen fertiliser.

In nature, most nitrogen exists as inert gas in the atmosphere. A tiny fraction is converted by natural processes (mainly lightning and soil bacteria) into solid forms (ammonium and nitrates) that plants can absorb and turn into protein. All living things are dependent on this.

A century ago, chemists discovered how to synthesise solid nitrogen from thin air using fossil fuels. Since then, synthetic nitrogen fertiliser has boosted farm production but has also doubled the amount of nitrogen circulating in the environment. This is now having impacts on freshwater and the climate.

When nitrates and ammonia are lost from soil to surface and ground water they can harm aquatic life, ecosystems and human health. When waste nitrogen is converted by soil bacteria into the powerful greenhouse gas nitrous oxide, it accelerates global warming.

The nitrogen cap seeks to limit these impacts by restricting synthetic nitrogen use on grazing land. Grazing land – or pastoral use land – is targeted because it is the predominant land use in most catchments and is where more than 90 per cent of the synthetic nitrogen is spread.

The cap does not apply to non-grazing land, because far less synthetic nitrogen is used there and the variety of crops and its use on non-pastoral land is too diverse to be managed under a single cap.

Figure 1 shows at a glance how the nitrogen cap applies to different farming operations. Table 1 is a checklist of things that farmers will need to do to comply with the nitrogen cap regulations.

The full text of the regulations is reproduced in [appendix B](#) of this guidance.

¹ The National Policy Statement for Freshwater Management 2020 (NPS-FM), the National Environmental Standards for Freshwater 2020 (NESF), and regulations made under section 360 of the Resource Management Act 1991 (RMA) contain provisions to limit contaminants, including nitrogen, from getting into freshwater. Regional councils are responsible for implementing and enforcing these regulations.

Figure 1: How the nitrogen cap applies to different farming operations

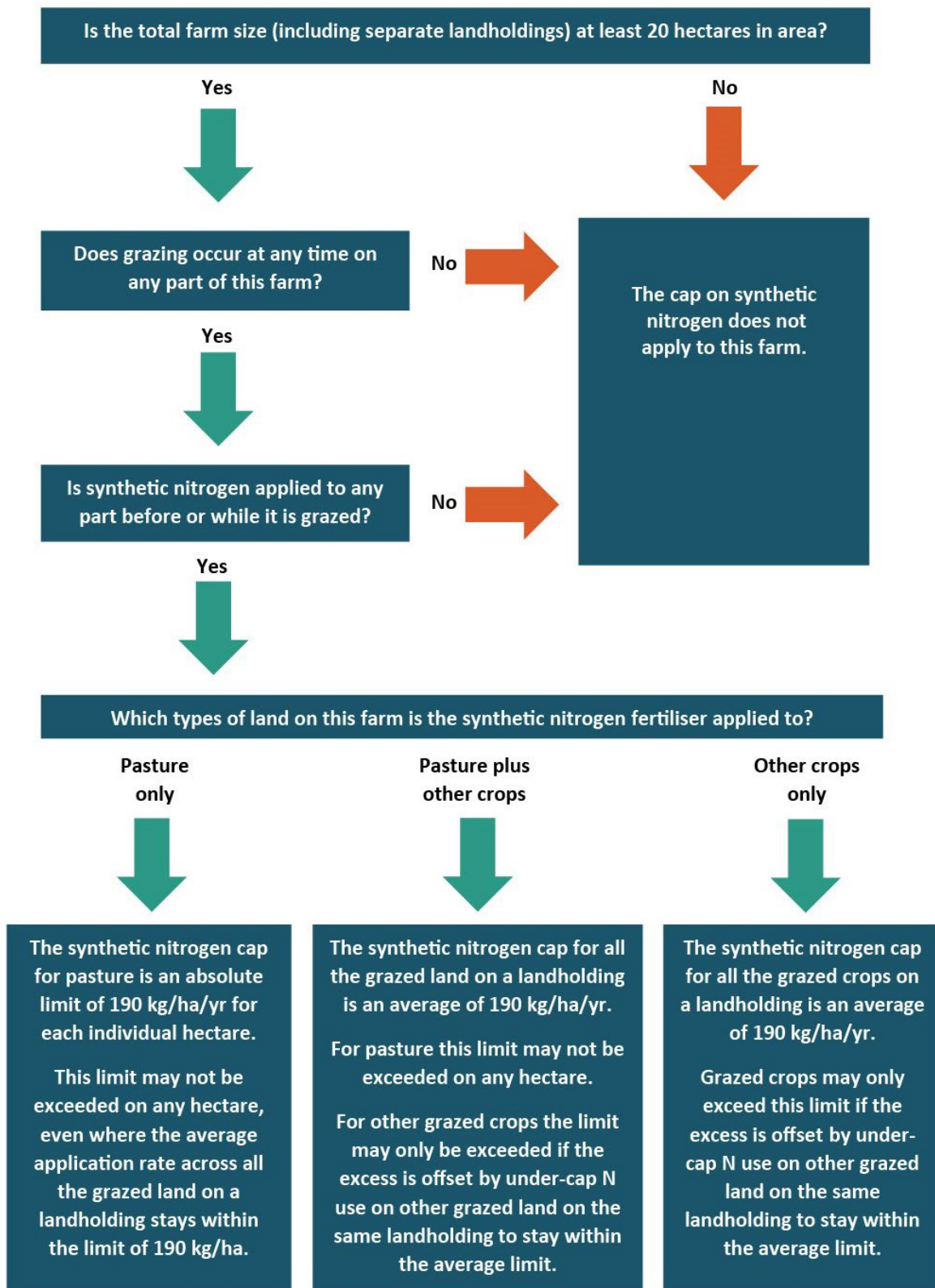


Table 1: Checklist of key synthetic nitrogen cap management tasks for farmers

Preliminary tasks		Check
Decide who, in the farming operation, is responsible for managing the synthetic nitrogen use on each contiguous landholding and for recording and reporting this to the regional council.		<input type="checkbox"/>
Determine which areas of the farm the nitrogen cap applies to. This means identifying the contiguous landholdings on the farm and, within each one, the areas that are or will be in the following land uses: pasture, annual forage crop, other pastoral uses (that is, any other grazing activity) and other land uses (that is, any land that is not grazed).		<input type="checkbox"/>
Calculate how much synthetic nitrogen can be spread during the year on each land use area within each contiguous landholding, and adjust this for any area that is over cap.		<input type="checkbox"/>
Note: This nitrogen management plan should be done even if the farmer intends to ask the council about applying for a non-complying activity consent.		
Ongoing tasks		Check
During the year, farmers will need to keep track of their synthetic nitrogen fertiliser use on each contiguous landholding with grazing animals on it. This means having to:		
<ul style="list-style-type: none"> keep records of each synthetic nitrogen application (including on the non-grazed land) 		<input type="checkbox"/>
<ul style="list-style-type: none"> update their synthetic nitrogen calculations after each application 		<input type="checkbox"/>
<ul style="list-style-type: none"> manage the synthetic nitrogen use on each contiguous landholding to keep it within the nitrogen cap for the total pastoral use area on each landholding and also for each hectare of pasture. 		<input type="checkbox"/>
End-of-year tasks		Check
Coming to the end of the year, the farmer will need to:		
<ul style="list-style-type: none"> plan the next year's fertiliser-spreading schedule to keep it within the nitrogen cap for the total pastoral use area on each landholding and also for each hectare of pasture. 		<input type="checkbox"/>
<ul style="list-style-type: none"> begin preparing a report to the regional council for delivery by 31 July (this task is only required of dairy farmers and non-complying activity consent holders). 		<input type="checkbox"/>
Note: Nitrogen spread up to 30 June counts under the current year's cap and, after that, under the following year's cap.		

Nitrogen cap

Since 1 July 2021, on all farms 20 hectares and larger with any grazed land, no more than 190 kilograms of synthetic nitrogen per hectare may be applied per year to:

- any individual hectare of pasture
- the pastoral use land as a whole (that is, the combined area of pasture, annual forage crops, and other pastoral use land) when averaged across that area.

Any synthetic nitrogen used to grow pasture or other grazed vegetation is covered by the cap regardless of the:

- type of vegetation grazed – whether pasture or crops
- type of grazing animal – whether cattle, sheep, goats, pigs, deer, poultry, or other animals
- duration of the grazing – whether it is for a few days or the whole year.

Many farming operations will not be affected by the nitrogen cap, but heavy users of synthetic nitrogen fertiliser on grazed land will be. They will need to calculate their expected use of synthetic nitrogen and, if it is likely to exceed 190 kilograms/hectare/year, they will need to plan how to get it down to the legal limit.

In rare cases, they may be able to exceed the cap through a non-complying activity resource consent – but only if they can meet certain requirements, as outlined later in this guidance.

Synthetic nitrogen vs synthetic nitrogen fertiliser

The cap's weight limit applies only to the *nitrogen* part of the fertiliser, not to the fertiliser in its entirety, so it is important to distinguish between the synthetic nitrogen and synthetic nitrogen fertiliser.

- Synthetic nitrogen *fertiliser* contains nitrogen but also has other ingredients. For the purposes of the regulation, synthetic nitrogen fertiliser is any solid or liquid fertiliser, not of plant or animal origin, whose dry weight is more than 5 percent nitrogen.
- *Synthetic nitrogen* is the nitrogen part of the synthetic nitrogen fertiliser. It can vary from 6 per cent to over 40 per cent of the fertiliser dry weight, depending on the fertiliser. (If it is 5 percent or under, it is not counted as synthetic nitrogen.)

Biological and mixed fertilisers

Biological nitrogen fertilisers are not covered by the nitrogen cap. These are any solid or liquid substance applied to plants or land in which the nitrogen comes from animals or plants.

- Biological nitrogen fertiliser may include matter that has been minimally processed by being composted, mixed, liquified, dried, or pelleted, but does not include manufactured nitrogen.
- Dairy effluent that has not had any manufactured nitrogen added to it is considered a source of biological nitrogen, so is excluded from the nitrogen cap.
- Where manufactured and biological nitrogen fertilisers are mixed together, and their combined nitrogen content comes to more than 5 per cent of their dry weight, they become synthetic nitrogen fertilisers and are covered by the nitrogen cap.

Identifying contiguous landholdings

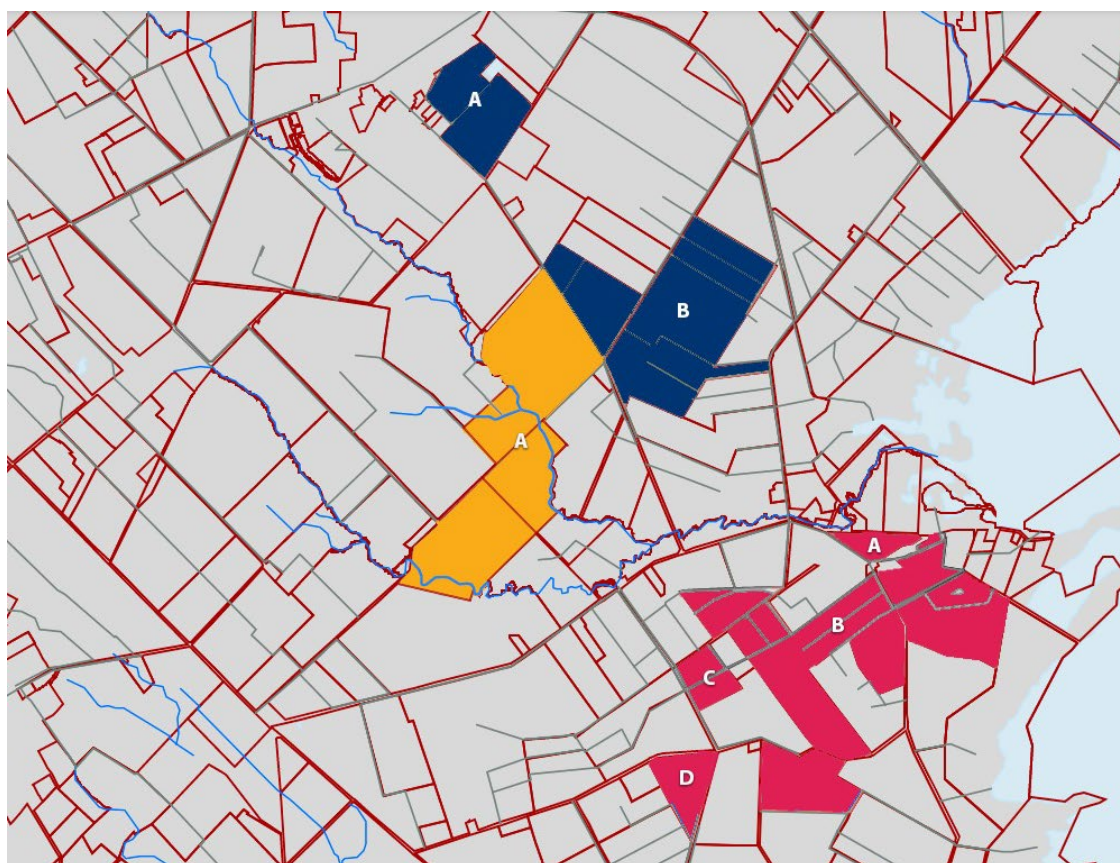
A contiguous landholding is any block of connected land belonging to a farming operation. If a farm has several unconnected blocks, separated by land not belonging to the farm, each block is a separate contiguous landholding.

This is important because the nitrogen application rate must be calculated and managed separately for each contiguous landholding. If a farm has several contiguous landholdings, the nitrogen application rate cannot be averaged across them.

The area of a contiguous landholding may or may not be the same as the title area. It can be in several titles provided that the land is adjoining, is managed as part of a single farming operation, and can be encompassed by a single perimeter line on a map.

A contiguous landholding may contain one paddock or many paddocks and may have multiple land uses. It may be crossed by streams, roads or railway lines but, as long as the adjoining land on either side of these corridors belongs to the same farming operation, it remains a single contiguous landholding. Figure 2 illustrates this with three farms in Canterbury.

Figure 2: Contiguous landholdings



The **yellow farm** has one continuous block of land. Although it is crossed by roads and streams, its paddocks adjoin both sides of those roads and streams and so form one contiguous landholding (labelled A). The **blue farm** has two contiguous landholdings (A and B) separated by land not belonging to the farm. Each comprises a block of adjoining paddocks, some of which straddle roads. The **red farm** has four contiguous landholdings – three small ones (A, C and D) and one large one (B) with multiple adjoining paddocks straddling roads.

Pastoral use land (any grazed land)

The nitrogen cap applies to all areas where ground-rooted vegetation is grazed. Grazed areas are referred to as ‘pastoral use land’.

Pastoral land use is defined in section 217B of the Resource Management Act (RMA) as “the use of land for the grazing of livestock”. This includes pasture, annual forage crops and any other grazed land (see table 2).

Table 2: How the nitrogen cap applies to different categories of pastoral use

Pastoral use land (any grazed land)	
Pasture (grassland used primarily for grazing)	No hectare of pasture may receive more than 190 kilograms of synthetic nitrogen in a year.
Annual forage crops (land other than pasture used primarily for grazing)	The limit of 190 kilograms/hectare/year may be exceeded on annual forage crops if the average for all the pastoral use land is kept within cap.
Other pastoral use land (land that is intermittently grazed but is primarily used for other purposes e.g. arable, horticultural, forestry, hay, silage, ‘cut and carry’, and seed crops)	The synthetic nitrogen limit for other pastoral use land is similar to that for annual forage crops. The cap is in effect on other pastoral use land until the end of the last grazing period before harvest.
Other land (all land that is not grazed)	
The nitrogen cap does not apply to other land, but dairy farm annual nitrogen reports must report any synthetic nitrogen applied to other land if it is contiguous with the dairy platform.	

An annual forage crop is defined in the regulations as “a crop, other than pasture, that is grazed in the place where it is grown”. This refers to any crop, other than pasture, that is grown annually for the purpose of grazing.

Other pastoral use land is any land, including crops grown for the purpose of being harvested, where some grazing occurs during the year even though grazing may not be the primary land use.

The period of pastoral use begins with crop or pasture preparation (including the first fertiliser application) and ends when grazing ceases. Synthetic nitrogen use is capped throughout this period but is not capped between the end of grazing and the harvest.

If a crop or pasture area is grazed for less than 12 months, the 190 kilograms of nitrogen/hectare/year limit applies in full during that limited period and is not subdivided nor scaled down to match the timeframe, even if the pastoral use is brief.

The synthetic nitrogen limit for pasture is an absolute limit per hectare. Farmers must ensure that no hectare of pasture receives more than 190 kilograms of nitrogen per year.

The limit for annual forage crops may exceed the cap if the average for all the pastoral use land is no more than 190 kilograms of nitrogen per hectare per year. The farmer must ensure that any over-cap use on a forage crop is offset by under-cap use on the other grazed land.

Harvested pastoral crops (silage, hay, and cut-and-carry fodder)

If land used for silage, hay, or cut-and-carry feeding of livestock is grazed at any time before being harvested, all synthetic nitrogen applied up to the end of the final grazing period is capped and must be included when calculating the application rates for the pastoral use area.

Any synthetic nitrogen applied after the end of grazing and before the crop's harvest is not capped.

Seed crops

The same applies to any perennial crops, such as herbage seed and small-seed crops harvested more than once over a number of years and grazed between harvests.

All synthetic nitrogen applied until the end of grazing must be either within cap or offset by below-cap applications on adjacent pastoral use land.

Synthetic nitrogen is not capped if it is applied after the last grazing episode before the harvest.

Nor is it capped if crop growth is controlled mechanically, rather than by grazing, such as by harvesting for silage or cut-and-carry fodder.

Arable crops, horticulture and forestry

If grazing occurs on arable, horticultural or forestry blocks (for example, to help control weeds or excessive vegetation growth) then these areas are pastoral use land until grazing ends.

They are covered by the nitrogen cap during this period.

Once the final grazing ceases through to harvest, these areas are no longer in pastoral use and so are not covered by the nitrogen cap.

Where excessive vegetation is controlled by methods other than grazing, such as by harvesting for silage or cut-and-carry fodder, the cap does not apply.

Crop stubble grazing

If the only grazing that occurs on a crop is on the stubble after the harvest, then any fertiliser used to grow that crop before harvest is not capped.

It is only capped where there is pre-harvest grazing.

After harvest, the 190 kilograms of nitrogen/hectare/year limit only applies to crop stubble areas where synthetic nitrogen is used to promote the growth of new vegetation that will be grazed.

If the new growth will not be grazed, the cap does not apply.

Calculating the nitrogen cap

What to calculate

The following calculation process is described in more detail in [appendix A](#) of this guidance.

First, farmers record how many hectares are in each land-use category (that is, pasture, annual forage crops, other pastoral, and all pastoral – and additionally, for dairy farmers, the non-grazed other land). Then they record how much synthetic nitrogen fertiliser is spread in each.

The kilograms of fertiliser are then multiplied by the fertiliser's nitrogen content (as a decimalised fraction – that is, 0.18, not 18%). Nitrogen content is usually on the bag or invoice. If not, it will need to be tested or requested. If several fertilisers are used, this calculation is done separately for each, and the results combined to get the total synthetic nitrogen applied.

The year's total synthetic nitrogen used in each land-use category is then divided by the area. This gives the rate of application, in kilograms per hectare per year, for each land-use category.

Why these calculations count

If the calculations show that average synthetic nitrogen on the pastoral use land exceeds the cap, reductions will be needed. If the calculations show, for pasture, that the cap will be exceeded on one or more hectares, corrective actions will be needed.

Measuring the nitrogen applied to each hectare is best done with fertiliser spreaders that are fitted with GPS technologies. If spreaders are used that cannot do this, then the average application rate per hectare should be calculated for each area of pasture where fertiliser has been evenly spread – whether that is a paddock, a group of paddocks, or part of a paddock.

Where the spread is uneven, the hectare with the heaviest application should be the focal point. If the application on this hectare is under cap, the other hectares will also be under cap.

Sloping land

GPS does not take slope into account when measuring the distance between two points, and nor does the nitrogen cap. The 190 kilograms/hectare limit applies everywhere, even though a sloping hectare has a bit more surface area than a flat hectare.²

As a result, farmers who are applying synthetic nitrogen at or near the 190 kilograms/hectare limit will not be able to spread it quite as heavily on the slopes as on the flat. For farmers operating well within the cap, however, there will be sufficient margin to adjust for slope.

² For example, at a slope of 15 per cent (8 degrees), a hillside hectare is 1 per cent larger than a hectare on the plain, and at 60 per cent slope (31 degrees), it is 17 per cent larger.

Farm support services and the nitrogen cap

Farm advisors and other service providers can assist with the tasks listed in [table 1](#), by helping:

- clarify nitrogen cap requirements (see [table 3](#))
- plan or apply fertiliser treatments
- prepare annual reports on dairy farm nitrogen use to regional councils
- apply for non-complying activity consents.

Table 3: Clarification examples

Matters where clarification may be requested
The number and area of contiguous blocks. These are intact blocks of farmland that are fully surrounded by other land not belonging to the same farm.
The land uses within a contiguous block. The key ones for these regulations are: <ul style="list-style-type: none"> • <i>pastoral use land</i> (any land that is grazed) • <i>pasture</i> (grassland used primarily for grazing) • <i>annual forage crop</i> (land, other than pasture, used primarily for grazing) • <i>other pastoral use land</i> (intermittently grazed land whose primary use is not grazing) • <i>other land</i> (all land that is not grazed).
The grazing area to which synthetic nitrogen fertiliser is applied. The cap applies to any area where synthetic nitrogen is used to nourish vegetation that will be grazed, even for short periods.
The grazing area that receives no synthetic nitrogen fertiliser. Grazed areas where no synthetic nitrogen is applied are counted as pastoral use land when calculating nitrogen application rates.
Stubble crop grazing. Grazing on stubble is not a pastoral use, so the synthetic nitrogen used to grow that crop before harvest is not capped, unless it was grazed as it grew. Synthetic nitrogen applied to the post-harvest stubble is only capped if the new growth it promotes will be grazed.
Areas that are not covered by the cap. The cap does not apply to land that is not grazed, including crops that receive synthetic nitrogen in the period after grazing ceases and before harvest.
Which fertilisers are capped, and how much nitrogen is in them. The cap applies to the nitrogen part of any non-biological solid or liquid fertiliser whose dry weight is more than 5 per cent nitrogen. If the nitrogen percentage is not known, it will need to be tested.
Calculating and recording how much synthetic nitrogen is spread. Amounts and rates are calculated separately on each contiguous landholding for the pastoral use land, the annual forage crops, the pasture and the other pastoral use land – and, for dairy farmers, the ungrazed other land.
Ensuring the per hectare limit is not exceeded on pasture. Spreaders with GPS can measure this directly, or the hectare rate can be calculated over any area where the fertiliser is spread evenly.
Dairy farm reporting of nitrogen use to the regional council. It is up to the dairy farmer to collect and calculate the necessary information and deliver this by 31 July each year.
Applying for a non-complying activity resource consent. The council must be satisfied that exceeding the cap will not breach RMA, NPS-FM or regional plan requirements, and also that either: <ol style="list-style-type: none"> the farmer will reduce synthetic nitrogen use to cap level by 1 July 2023, or nitrogen losses from the over-cap use will not exceed a good practice baseline.
Consent-holder reporting to the regional council. Farmers who have consent for a non-complying activity must annually report their nitrogen use as dairy farmers are required to do.

Dairy farm nitrogen reporting to the regional council

Dairy farmers must send their first annual nitrogen report to the regional council by 31 July 2022. They must report separately for each contiguous landholding that has a dairy platform.

For this, they will need to keep detailed records of their synthetic nitrogen use, including their fertiliser purchases, the dates on which they spread nitrogen, and how much was applied to the annual forage crops, the pastoral use land as a whole, and the other land.

The reports must say how much synthetic nitrogen fertiliser was applied during the year to all land in the contiguous block, not just the dairy platform. The reports will need to include:

- farm name and ID
- name of the report provider
- contiguous landholding details, including its:
 - name or label (for example, A, B, C, as in figure 2)
 - location
 - area in hectares, and, within this:
 - hectares of pastoral use land, in total, and within this:
 - hectares of annual forage crops
 - hectares of all other pastoral use land (that is, all non-forage grazed land, such as pasture and intermittently grazed land)
 - hectares of other land (that is, all the ungrazed parts of the contiguous landholding)
- records of all synthetic nitrogen fertiliser purchased during the year
- percentage of nitrogen that each fertiliser brand contains
- a log of the dates on which synthetic nitrogen fertiliser was applied
- annual rate of synthetic nitrogen application (as kilograms/hectare/year) on:
 - all the pastoral use land, and also separately on each of:
 - annual forage crops
 - other pastoral use land (that is, pasture plus intermittently grazed land)
 - all the other land (that is, the ungrazed parts of the contiguous landholding).

Nitrogen reporting is not required for contiguous landholdings that have no dairy platform – although the nitrogen cap still applies to any grazed areas on these contiguous landholdings.

A report is also not required from other farms with grazing livestock, including those grazing non-milking cows.

Again though, the cap still applies to the grazed land on these farms, and councils may request evidence of fertiliser use and purchase as part of their usual permitted activity monitoring.

Existing use rights

If, prior to 1 July 2021, a farmer had been spreading synthetic nitrogen at rates above 190 kilograms/hectare/year, they may continue doing so as an 'existing use right' for a limited period of time - but only if the activity complies with the rules in the regional plan and meets the other requirements of section 20A(2) of the RMA.

A farmer exercising this existing use right has up to six months from 1 July 2021 to apply for a non-complying activity consent. They may continue with the activity until their consent application has been considered but may not change its character, intensity or scale..

Non-complying activity consents

The nitrogen cap regulations provide two options for non-complying activity resource consents that would permit a farmer to exceed the nitrogen cap in rare and exceptional circumstances.

These options are not provided to maintain business-as-usual for high nitrogen use but to make nitrogen reductions more manageable where immediate compliance is not possible.

The application will need to present a detailed and evidence-based case, recognising that, under Te Mana o te Wai, environmental outcomes take priority over economic and social ones.

To be granted a non-complying activity consent, the applicant must satisfy the council that:

- exceeding the cap will have no more than minor adverse effects, or, in all other respects, will comply with the objectives and policies of the regional plan
- the applicant will also meet one of the following requirements:
 - for a 'good practice' consent of up to five years, they will use good practices (as described in an expert's report furnished by the applicant) to limit nitrate loss to what it would have been if 190 kilograms/hectare/year were applied using good practices
 - for a 'phased reduction' consent until 1 July 2023, they will follow a plan to get their synthetic nitrogen use down to the cap level by the time their consent expires.

'Good practice' consent

Applicants for this consent must submit a report prepared by a suitably qualified person, ideally someone with professional expertise in farm systems, regulatory requirements and the assessment of environmental effects.

The report must satisfy the council that nitrogen losses from over-cap nitrogen use on the contiguous landholding will not exceed the baseline rate.

The report will need to include:

- **The baseline nitrogen loss rate**, which
 - is an estimate of how much nitrogen would get into waterways if 190 kilograms of nitrogen/hectare/year were applied while using good practices, and

- is best calculated using a more reliable method than Overseer, or using other information in addition to Overseer.³
- **Supporting evidence** such as:
 - a nutrient budget (NB#1) to calculate the actual nitrogen loss rate from the contiguous block over the previous 12 months (July–June)
 - a second nutrient budget (NB#2) to calculate the baseline nitrogen loss rate as it would be under good practices if 190 kilograms of nitrogen/hectare/year were applied
 - a third nutrient budget (NB#3) to calculate the projected nitrogen losses at the requested over-cap nitrogen application rate
 - evidence of the good practices that will be used to ensure that the baseline nitrogen loss rate is not exceeded in each year of the consent
 - identification of any potential or actual adverse effects of the requested over-cap nitrogen use in terms of the environmental priorities of Te Mana o te Wai
 - evidence that the adverse effects of the over-cap nitrogen use will be less than minor or will not be contrary to the objectives and policies of the relevant regional plan.

Each year, the ‘good practice’ consent holder must send the regional council a nutrient budget and a report containing the same detailed information on nitrogen use and purchases that is required of dairy farmers in their annual reports.

‘Phased reduction’ consent

This consent requires the applicant to present a nitrogen reduction plan showing how they will reduce their nitrogen use to the cap level by 1 July 2023, which is when the consent expires.

They are not required to engage a suitably qualified practitioner for this, but their plan must be sufficiently detailed and presented to satisfy the council that it will achieve the stated reductions.

Each year, the ‘phased reduction’ consent holder will have to send the regional council evidence that they are following their nitrogen reduction plan, including a report with the same detailed information on nitrogen use and purchases that is required of dairy farmers in their annual reports.

³ A scientific review has found that Overseer is not ideal for estimating farm nitrogen losses and cannot reliably estimate how changes in farm management would affect those losses. If Overseer is used in resource consent applications because of plan requirements, councils may need to consider additional information for increased confidence in their decisions.

Appendix A: Calculating synthetic nitrogen use

The key steps in the calculations are as follows, for each contiguous landholding:

1. Record the area of the following land use types:

- a) pasture (grassland used primarily for grazing)
- b) annual forage crops (land other than pasture used primarily for grazing)
- c) other pastoral use land (land that is intermittently grazed, but grazing is not its primary use)
- d) pastoral use land (all the grazed land – that is, the combined area of a, b and c above)
- e) other land (all land that is not grazed).

2. Record the kilograms (1 tonne = 1,000 kilograms) of each fertiliser spread within each of these land use areas during the year.

3. Calculate how much synthetic nitrogen is spread in each area by multiplying the kilograms of fertiliser by its nitrogen percentage (as a decimalised fraction). If more than one fertiliser is used, do this calculation for each one, then add the results together.

For example, if 2 tonnes of urea (which has 46 per cent nitrogen) are spread on the forage crop, this is 2,000 kilograms \times 0.46 = 920 kilograms of nitrogen.

If 5 tonnes of DAP (18 per cent nitrogen) are also spread on the forage crop, then this is 5,000 kilograms \times 0.18 = 900 kilograms of nitrogen.

Adding the results together gives the total amount of nitrogen applied to the forage area.

In this example, that is 920 kilograms + 900 kilograms = 1,820 kilograms of nitrogen.

4. Calculate the per hectare rate for each land use area. This is done by dividing the total nitrogen from all fertilisers (in step 3) by the area of the land use type to which it was applied.

For example, if the area in annual forage crops is 20 hectares and the 1,820 kilograms of nitrogen just referred to is applied to some or all of the forage crops, the per hectare application rate is $1,820 \div 20$, which comes to 91 kilograms of nitrogen/hectare/year.

5. Calculate the nitrogen per hectare rate across all the pastoral use land by:

- combining the nitrogen applied to the forage crops, the pasture and any other pastoral use land (from step 3 above), and then
- dividing this total by the total pastoral use area (from step 1 above).

For example, if

- 1,820 kilograms of nitrogen were applied to 20 hectares of forage land and
- 6,000 kilograms of nitrogen were applied to 50 hectares of pasture, and
- 5,000 kilograms were applied to 100 hectares of other pastoral use land,

then the combined rate would be 12,820 kilograms divided by 120 hectares.

This gives an average application rate of 74.5 kilograms of nitrogen/hectare/year for the pastoral use area.

Appendix B: Nitrogen cap regulations

Note: Because these nitrogen cap regulations are a subset of the regulations contained in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020, they are subject to the definitions and requirements in those broader regulations (for example, the definition of annual forage crop and the limitation of the regulations to farms of 20 hectares or more).

Subpart 4—Application of synthetic nitrogen fertiliser to pastoral land

32 Interpretation of this subpart

In this subpart,—

contiguous landholding means each area of 1 or more contiguous parcels of land within a farm

Example

A farm is managed as a single operation on 50 ha of land, comprising 2 parts: 20 ha of contiguous parcels and a separate 30 ha of contiguous parcels. Each of those parts is a contiguous landholding.

nitrogen cap, for the land in pastoral land use in a contiguous landholding, means the application of nitrogen at a rate of no more than 190 kg/ha/year—

- (a) to all of that land, as averaged over that land; and
- (b) to each hectare of that land that is not used to grow annual forage crops

pastoral land use does not include the use of land for the grazing of livestock on the stubble of a crop that has been harvested after arable land use

synthetic nitrogen fertiliser—

- (a) means any substance (whether solid or liquid) that—
 - (i) is more than 5% nitrogen by weight; and
 - (ii) is applied to any plant or soil as a source of nitrogen nutrition for plants; and
- (b) includes any manufactured urea, diammonium phosphate, or sulphate of ammonia to which paragraph (a) applies; but
- (c) does not include a compost, soil treatment, or fertiliser that—
 - (i) is derived from plant or animal waste or residue; and
 - (ii) is minimally processed (for example, by being composted, mixed, dried, and pelleted).

33 Permitted activity

- (1) The following discharge of synthetic nitrogen fertiliser is a permitted activity if it complies with the condition:
 - (a) the discharge is for the purpose of applying nitrogen to land in pastoral land use; and
 - (b) the discharge is into the air, or into or onto land, including in circumstances that may result in the synthetic nitrogen fertiliser (or any other contaminant emanating as a result of natural processes from the fertiliser) entering water.

Condition

- (2) The condition is that the application of nitrogen, as a component of the synthetic nitrogen fertiliser, to the land in pastoral land use in a contiguous landholding must not exceed the nitrogen cap.

34 Non-complying activity

- (1) The following discharge of synthetic nitrogen fertiliser is a non-complying activity if it does not comply with the condition in regulation 33(2):
 - (a) the discharge is for the purpose of applying nitrogen to land in pastoral land use; and
 - (b) the discharge is into the air, or into or onto land, including in circumstances that may result in the synthetic nitrogen fertiliser (or any other contaminant emanating as a result of natural processes from the fertiliser) entering water.

Requirements for granting resource consent

- (2) A resource consent may be granted for the non-complying activity only if (in addition to section 104D of the Act being satisfied)—
 - (a) the applicant provides the consent authority with a report by a suitably qualified and experienced practitioner that—
 - (i) sets out good practices for applying synthetic nitrogen fertiliser to the land in pastoral land use in each relevant contiguous landholding;and
 - (ii) states that granting the consent would not result in the rate at which nitrogen may enter water exceeding the baseline rate for each contiguous landholding; and
 - (b) the consent authority is satisfied as to the matters in the practitioner's report.

Conditions required in resource consent

- (3) A resource consent granted for a non-complying activity under subclause (2) must impose conditions requiring its holder to—
 - (a) ensure that the rate at which nitrogen may enter water as a result of their application of synthetic nitrogen fertiliser to the land in pastoral land use in a contiguous landholding does not exceed the baseline rate for that contiguous landholding; and
 - (b) report their use of synthetic nitrogen fertiliser to the consent authority each year.

Term of resource consent

- (4) A resource consent granted for a non-complying activity under subclause (2) must be for a term of no more than 5 years.

Meaning of baseline rate

- (5) In this regulation, **baseline rate** means the rate at which nitrogen may enter water if—
 - (a) nitrogen, as a component of the synthetic nitrogen fertiliser, were applied to the land in pastoral land use in a contiguous landholding at the highest rate that does not exceed the nitrogen cap; and
 - (b) the synthetic nitrogen fertiliser were applied to the land in pastoral land use in the contiguous landholding using the good practices set out in the practitioner's report.

Alternative requirement for granting resource consent

- (6) As an alternative to subclause (2), a resource consent may be granted for the non-complying activity if (in addition to section 104D of the Act being satisfied) the consent authority is satisfied that the applicant has provided it with a synthetic nitrogen reduction plan.

- (7) A **synthetic nitrogen reduction plan** must demonstrate how the applicant will reduce their use of synthetic nitrogen fertiliser (year by year) so that, on and from 1 July 2023, their application of nitrogen, as a component of the fertiliser, to the land in pastoral land use in each relevant contiguous landholding does not exceed the nitrogen cap.

Conditions required in resource consent

- (8) A resource consent granted for a non-complying activity under subclause (6) must impose conditions requiring its holder to—
- (a) comply with their synthetic nitrogen reduction plan; and
 - (b) report their use of synthetic nitrogen fertiliser to the consent authority each year.

Term of resource consent

- (9) A resource consent granted for a non-complying activity under subclause (6) must be for a term that ends before 1 July 2023.

Revocation of alternative

- (10) Subclauses (6) to (10), and the headings above those subclauses, are revoked on 1 July 2023.

35 Compliance with regional rules

To avoid doubt, a discharge to which regulation 33(1) or 34(1) applies must comply with any applicable regional rule that relates to the discharge of nitrogen or its compounds (including synthetic nitrogen fertiliser) for agricultural purposes.

36 Operating dairy farm: monitoring and information required

A person who is responsible for operating a contiguous landholding that includes any dairy farm land must provide to the relevant regional council, no later than 31 July of each year, the following information relating to the previous 12-month period ending on 30 June of that year:

- (a) the area of land in pastoral land use in the contiguous landholding and, within that land, the areas of the following (all in hectares):
 - (i) the land used to grow annual forage crops:
 - (ii) the other land:
- (b) the area of land in other uses in the contiguous landholding (in hectares):
- (c) the receipts for the synthetic nitrogen fertiliser purchased for the contiguous landholding:
- (d) the types of synthetic nitrogen fertiliser applied to the contiguous landholding and, for each type, the percentage of the nitrogen component by weight:
- (e) the rate at which each type of synthetic nitrogen fertiliser was applied (in kg/ha/year)—
 - (i) to the land in pastoral land use in the contiguous landholding and, within that land, to—
 - (A) the land used to grow annual forage crops:
 - (B) the other land:
 - (ii) to the land in other uses in the contiguous landholding:
- (f) the dates on which the synthetic nitrogen fertiliser was applied.