

Your lifestyle block and Lake Rotorua

**A guide for lifestyle block owners on how
to do their bit to protect Lake Rotorua**



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Setting the scene

Our lake

Since the first settlement by Te Arawa in the 1300s, Lake Rotorua has been regarded as a taonga - a treasure.

Over the last 80 years, the growth of the city, agriculture, tourism and forestry have driven land use change in the Lake Rotorua Catchment. In 1940, farming covered 6,000 ha and the township population was around 7,000. Rotorua district is now home to more than 66,000 residents with around 20,000 ha of farming in the catchment. Pressure from land use change and population growth caused Lake Rotorua's water quality to decline from the 1960s.

Bay of Plenty Regional Council, Rotorua Lakes Council and Te Arawa Lakes Trust are working to protect all Rotorua Te Arawa lakes for the use and enjoyment of present and future generations. Progress has occurred through waste water upgrades, on-farm changes and other short and long term interventions. To maintain good long-term water quality, we need to reduce farm and other nutrient losses, including from lifestyle blocks.



Looking after your lifestyle block and Lake Rotorua

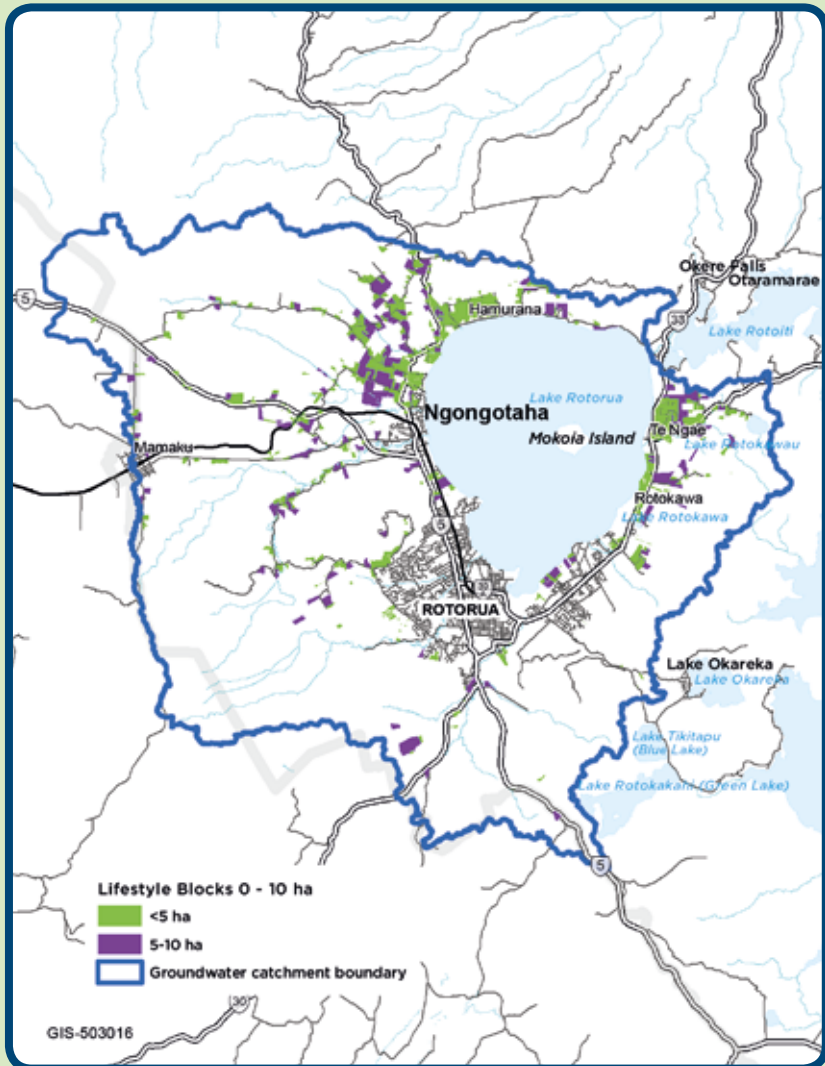
The undulating landscape surrounding Lake Rotorua provides a stunning backdrop for rural living.

Over the last two decades we've seen significant growth in lifestyle block subdivisions, not only in Rotorua but across New Zealand. More and more people are seeking a lifestyle that combines the benefits of rural living with easy access to urban amenities.

Lifestyle block owners are encouraged to take good care in managing their land, just as larger-scale farmers are being asked to.

This guide is aimed at lifestyle blocks under five hectares and may be useful for larger blocks too.

Lifestyle blocks in our catchment



At a glance



There are around 950 lifestyle blocks¹ (0.4 ha-5 ha) in the Lake Rotorua Catchment covering 1,600 ha. 66% of this land is grazed by drystock² and 11% in bush and scrub.



There are around 150 properties¹ in the 5-10 hectare area band, covering 1,000 ha.



While lifestyle block owners are engaged in some form of production on their land, this does not solely support their households. Commuting to Rotorua city for work is likely to be a regular activity for many.



Most lifestyle blocks are located in Hamurana, Ngongotaha and Te Ngae, often enjoying views to Mokoia Island and Lake Rotorua.



With an average household occupancy of 2.6, the number of people living on these lifestyle blocks is estimated at 2,400³.

¹ Based on Rural Valuation References ² Drystock means all stock types except milking cows ³ Based on 2015 census data

Protecting our lake

We all have a part to play in protecting our lake. Lake Rotorua's water quality is affected by excess nutrients coming from land in its surrounding catchment. The key nutrients – nitrogen and phosphorus – boost the growth of free-floating algae in the lake, just as they boost the growth of plants on land. Too many nutrients can cause algal blooms resulting in poor water quality.

Good progress has been made with water quality being the best it has been in decades. The lake is meeting its target Trophic Level Index (TLI) of 4.2 due to alum dosing of two streams which flow to the lake, the Puarenga and Utuhina. The alum 'locks up' the phosphorus which limits algal growth. However, alum dosing is not considered a sustainable, long term solution due to its unknown risks.

What is TLI?

The Trophic Level Index (TLI) is a number used to indicate the health of lakes in New Zealand. The number is calculated using four separate water quality measurements – total nitrogen, total phosphorus, water clarity, and chlorophyll-a. The lower the TLI number, the better the water quality in the lake. To find out the latest TLI results see www.lawa.org.nz

How are nutrients entering the lake

Nitrogen entering Lake Rotorua (estimated at 755 tonnes per year) comes from many sources with about 70% from pastoral farming. This farm 'nitrogen load' has increased over the last 80 years as rural land use has intensified. Nitrogen can build up in soil and its soluble form – nitrate – is easily leached when rainfall drains through soil into the groundwater, which slowly flows to the lake.

Phosphorus entering the lake is fairly stable (estimated at 49 tonnes per year) and comes from land runoff, waste water and natural geological sources. Phosphorus (like nitrogen) can also be released occasionally from lake bed sediments.

Nitrogen and phosphorus losses from land take different pathways – leaching and run-off respectively. These pathways require different approaches to minimise nutrient losses. These pathways are covered in more detail on pages 12 and 13.



Where our lake needs to be

Landowners in the Lake Rotorua Catchment can reduce both phosphorus and nitrogen losses to help protect the lake water quality.

To meet Lake Rotorua's TLI water quality target of 4.2, Bay of Plenty Regional Council has:

- Set a 'sustainable nitrogen load' for the lake at 435 t per year¹ and identified how much larger landowners need to reduce their nitrogen losses, so that the sustainable load is met by 2032.
- Proposed a system of rules, incentives and advice for rural landowners in the Lake Rotorua Catchment.

¹ This is an annual target of lake nitrogen inputs or 'load'

What will the new rules mean?

Lifestyle blocks are not generally significant individual contributors to lake water quality issues.

However, they make up a high proportion of rural landowners in the Lake Rotorua Catchment and so collectively contribute to the lake's nitrogen and phosphorus load. Good nutrient management practices on lifestyle blocks will have a positive affect on water quality.

Most lifestyle block owners with 5ha of effective land or less, will not formally be required to make any changes as a result of the new rules. However, lifestyle block owners are encouraged to voluntarily take care in managing their land to minimise nutrient losses.

To find out more about the Lake Rotorua nutrient rules, take a look at:

www.rotorualakes.co.nz/plan-change-10

www.rotoruafarmers.org.nz

How what we do on the land affects our lake

There are four main ways rural land use can affect water quality.

Nitrogen, phosphorus, sediment and faecal matter enter our lake through groundwater and surface runoff. The table below summarises how this takes place.

Factor	Why it is a problem?	Where does it come from?	How does it get to the lake?
Nitrogen	It feeds nuisance plant and algae growth in waterways Algae and nuisance plants affect stream life, block water intakes and drains, and make water unpleasant for swimming and drinking.	Urine from stock Nitrogen fertiliser Breakdown of crop residues and soil organic matter	Leaching down through soil into groundwater Surface runoff (a minor pathway)
Phosphorus		Dung from stock Phosphate fertiliser Soil sediment	Surface runoff into streams and lake Soil and bank erosion (phosphate binds to soil particles) Stock in streams
Sediment	Fills up our lakes It makes water murky and affects stream life Poor water clarity makes water unsafe for swimming	Soil loss from paddocks Hill slope erosion Stream bank erosion and trampling Tracks and races	Surface runoff into streams and lakes Stream bank collapse Hill and gully erosion
Faecal matter	It creates a human health risk for swimming and drinking	Dung from stock	Surface runoff into streams and lakes Stock in streams

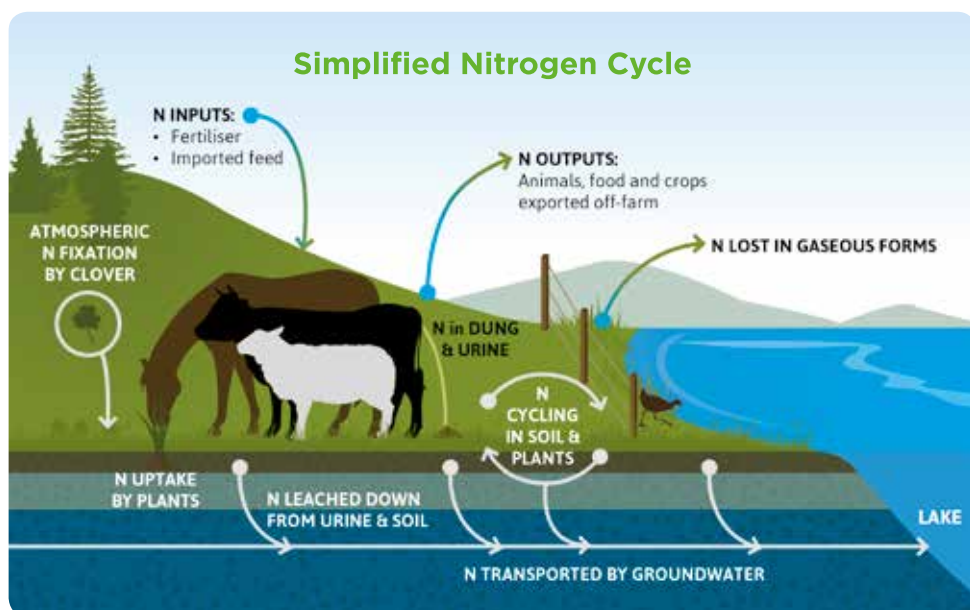
How nutrients get from the land to our waterways and lake

Nitrogen cycle

Nitrogen (N) is an essential nutrient for plant growth. It comes from fertiliser, clover (or other legumes which 'fix' it from the atmosphere) and imported feed. Animals take in nitrogen when they eat and excrete some of it in urine.

Stock urine, particularly from large animals, applies a lot of nitrogen to a small area of soil. This is usually more nitrogen than plants can use, especially in winter, and is easily leached through the soil.

Direct leaching from nitrogen fertiliser can occur but its main impact is via growing more grass and having more animals eating and urinating. Cultivation also releases nitrogen from soil organic matter. In wetland areas, some nitrogen is lost to the atmosphere as nitrous oxide.



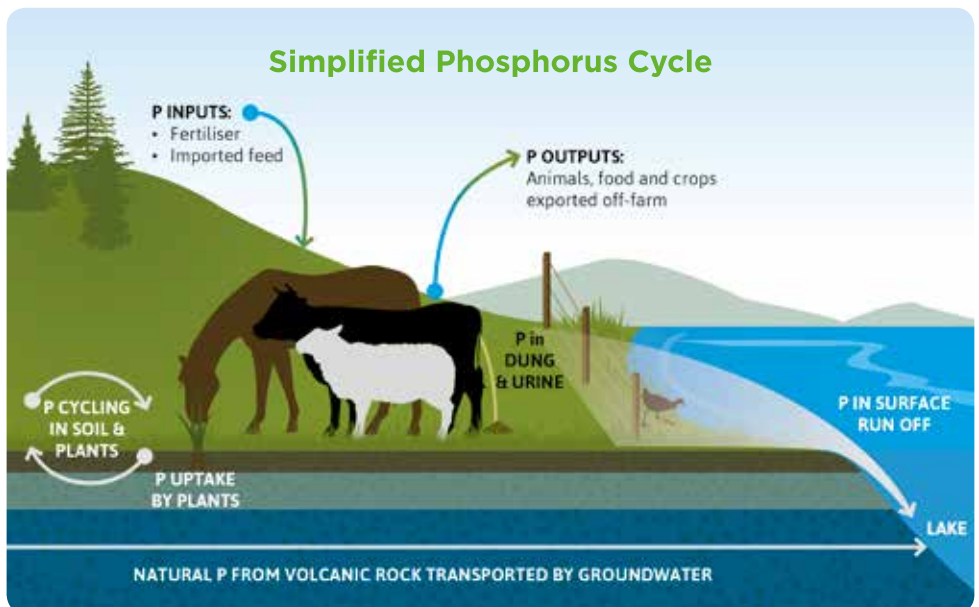
Plant growth and soil fertility are influenced by how nutrients are cycled through the soil-plant-animal system. The two nutrient cycle diagrams below also illustrate how surplus nitrogen and phosphorus can enter our waterways and lakes.

Phosphorus cycle

Phosphorus (P) behaves differently to nitrogen. It binds strongly with most soils and only dissolves slowly for plants to take up. Phosphorus doesn't readily leach but can enter waterways through soil erosion and farm runoff.

The dirty runoff you see during wet periods typically contains soil particles and phosphorus. Soil phosphorus levels will decline over time without inputs from fertiliser, manure and bought in feed.

Phosphorus occurs at low levels in the natural environment, so small increases going into waterways can have a big effect. Although Lake Rotorua groundwater has high natural phosphorus levels from its volcanic geology, the additional inputs from human activity can be reduced by good nutrient practices.



Tips on what you can do to help protect our lake

Some of the key actions you can take that will have a positive impact on your lifestyle block and the water quality of Lake Rotorua.



Looking after your soil

Monitoring your soil nutrient status can help improve both the economic and environmental performance of your lifestyle block.

Some people look at their pasture and make assumptions about what fertiliser they need based on what they see, or just apply the same amount of fertiliser each year because that's what they've always done.

Ideally, the amount and timing of fertiliser inputs needs to:

- Match plant/pasture nutrient requirements
- Utilise existing soil nutrients
- Minimise adverse environmental impacts.

Soil testing

Soil testing takes the guess work out of soil fertility and enables cost effective fertiliser application. A basic soil test will confirm if you have any nutrient deficiencies, excesses or imbalances. Soil test results are normally presented alongside 'optimum values' for high pasture production. On lifestyle blocks, lower than 'optimum' values and production may suit your goals.

Three main soil testing services in New Zealand:

Hill Laboratories, Hamilton www.hill-laboratories.com
(specialises in lifestyle block testing)

ARL, Napier www.arllab.co.nz

Eurofins, Auckland www.eurofins.co.nz

These soil testing services provide advice on how to go about preparing soil samples on your property.

Did you know?

*Different soil types can have different nutrient requirements.
You can find out what soil types you have on your lifestyle block online through S-Maps.*

<https://smap.landcareresearch.co.nz/>



Key soil nutrients

For productive pastures, your soil needs to have a pH of around 5.8 - 6.5 and have adequate levels of the following nutrients:

Nitrogen - required for protein synthesis in plants and animals

Phosphorus - needed for energy production and for cell development

Potassium - maintains the water and electrical balance in cells

Sulphur - an important component of proteins and vitamins

Magnesium - required for the photosynthesis process

It is recommended that lifestyle blocks test for these soil nutrients every three to five years.

There are other 'micro-nutrients' needed for plant and animal health, including cobalt (for ruminant animals), copper and selenium.

Soil tests give a scientific basis for fertiliser decisions and help in discussions with your fertiliser retailer or agricultural consultant. Levels of nitrogen (total N) are not usually included in a basic soil test and need to be requested. Soil samples should be representative of the area you want tested. For pasture, this can be done by combining 10-20 soil cores taken down to 75 mm deep. Avoid dung and urine spots, gateways, around water troughs and recently grazed pastures, and do not sample within three months of applying fertiliser or lime. Soil 'corers' can be borrowed from farm supply outlets.

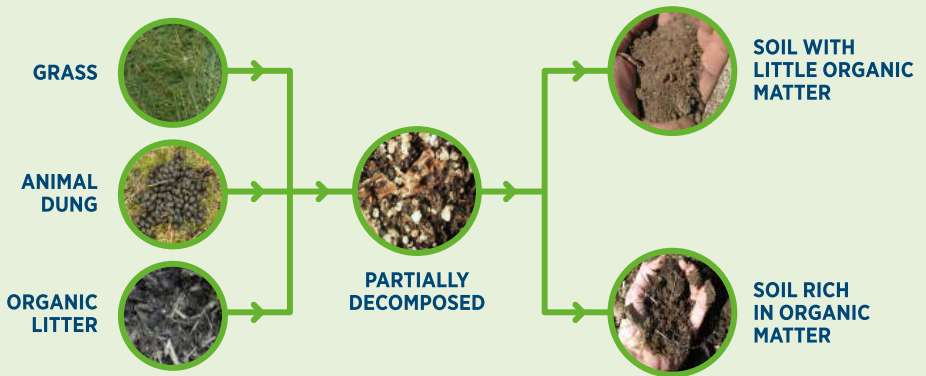
Improving levels of soil organic matter

Raising or maintaining soil organic matter is critical for soil health. Organic matter is the fraction of soil consisting of plant or animal tissue in various stages of decomposition. Organic matter levels are highest in the topsoil.

Organic matter helps retain nutrients for plant growth, reduces the risk of runoff and erosion and improves the overall condition of the soil.

Building soil organic matter takes time. Here are a few ways to do it:

- Reduce or eliminate tillage/cultivation. Tillage speeds up the decomposition of organic matter. Tillage also increases erosion risk. No-till practices can help build organic matter.
- Reduce erosion. Most soil organic matter is in the topsoil. When soil erodes, organic matter goes with it.
- Maintaining good pasture cover throughout the year helps to maintain soil organic matter.



For more information on soil organic matter, take a look at:

www.boprc.govt.nz - Factsheets and resources on soil organic matter and soil structure and the Soil Health Toolkit.

www.landcareresearch.co.nz - Visual soil assessment kit.

Meet Martin Hawke & Bronwyn Webster

Enjoying panoramic views across Lake Rotorua and Mokoia Island, Martin and his partner Bronwyn have created a tranquil sanctuary on their 0.8 ha lifestyle block in Brunswick.

Their desire to live on a lifestyle block began 12 years ago when they bought a bare section on the edge of what is now known as Brunswick Park. Building a house and landscaping their property has been a welcome challenge.

Martin and Bronwyn's two donkeys, Kiri and Mist, are the only animals on their property. Twenty year old Kiri was named for her operatic prowess. Kiri's enthusiastic late night 35 hee-haw performances were calmed by the arrival of her blood sister Mist.

While Martin only has the two animals, he knows a lot about farming. He worked for the Department of Agriculture and the Ministry of Agriculture and Forestry between 1966 and 2004 and managed a research station at Tikitere. Specialising in agroforestry, Martin developed a keen interest and expertise in combining drystock farming with forestry.

Martin's interest in trees continues on the lifestyle block. In 2008 they planted over 50 truffle trees. It's now fingers crossed whether these nine year old trees will bear the prized winter fungi.

Bronwyn's long standing dream of having an avenue of liquid amber trees has also been realised with 34 trees providing a majestic line down the property towards the lake vista.

Martin recently retired but keeps busy working on his block, coupled with some soil sampling for his old business. As an ex-mountain safety instructor, Martin relishes the opportunity to wander the hills around Rotorua doing this work. When asked what he likes to do for relaxation, he said "there's no time to consider that!"



Best use of fertiliser

If you use fertiliser on your lifestyle block, use the '4R' principles of good nutrient management practice endorsed by the fertiliser industry.

The 4R's	
Right fertiliser	Use soil tests and advice from your fertiliser retailer or agricultural advisor to choose the right type and rate of fertiliser for your needs.
Right rate	
Right time	Fertiliser is most effective when used on actively growing plants or pasture, typically spring to early summer. Phosphate fertilisers shouldn't be applied when the soil is wet or when rain is forecast in the next seven days. In contrast, nitrogen fertilisers should be applied when rain is forecast and applied only when plants are actively growing. However, nitrogen should not be applied if the soil is saturated. If applying fertiliser after a drought, wait until soil moisture is sufficient to restart pasture growth.
Right place	The right placement of fertiliser increases plant growth and reduces nutrient loss. To avoid run-off, ensure fertilisers are not spread on areas close to waterways and avoid application on compacted or heavily pugged soils.

Other fertiliser tips

- Split applications reduce the risk of leaching and generally improve utilisation of nutrients by plants.
- Ensure your fertiliser spreader is well maintained and calibrated. Use the calibration tool at www.fertspread.nz
- Contractors spreading fertiliser should be accredited under the Spreadmark scheme.

- Keep records on your fertiliser applications including product, rate, date and location. This helps you understand pasture response and inform discussion with advisors and retailers.
- Store fertilisers securely under cover to minimise spillage and loss into waterways.

For more information on fertiliser application, take a look at:

www.boprc.govt.nz - Efficient fertiliser use factsheet

www.fanz.org.nz - Fertiliser Code of Practice





Feeding your stock

Good grazing management is all about maintaining pasture at a height and quality that provides nutritious feed for stock. Pasture is the cheapest feed for stock, so it is worth looking after.

Maintaining good ground cover reduces the risk of erosion, nutrient run-off and leaching.

Pasture is typically made up of different varieties of grasses, clovers and weed species.

- The most productive grasses are ryegrass, cocksfoot and fescues.
- White and red clovers provide good feed for stock as well as improving soil fertility by fixing nitrogen.
- Less productive grass species include Yorkshire fog, brown top and kikuyu.
- Generally, good pasture is 70% ryegrass, 30% clover but this can vary due to location, livestock needs and season.

An animal needs about 2% of its body weight each day in feed dry matter. This amount increases for pregnant or lactating animals or for stock that you want to gain weight. Dry matter is what's left in the feed if the water is taken out. For example, a ewe weighing 60 kg requires 1.2 kg dry matter

each day (=2% of body weight). As a general rule of thumb, Ryegrass/ clover dominant grass is about 15 % dry matter in winter/spring and about 25% in dry summer conditions.

A feed budget will help ensure there is enough pasture on your lifestyle block to meet the needs of your stock. This can be complicated, but you'll find a detailed guide on how to calculate feed budgets at www.lifestyleblock.co.nz

For more information on pasture management, take a look at:

www.boprc.govt.nz - Grasses and legumes factsheet

'What grass is that?' by N.C. Lambrechtsen

www.lifestyleblock.co.nz - Allocating feed budgets

Supplementary feed

Imported feed can be costly. While many lifestyle block owners may not have the machinery to make their own silage or hay, consider using local contractors to turn your excess pasture in the spring flush into feed for the leaner months. Mini bales are an easy and convenient option on lifestyle blocks.

- **Silage** (pickled grass) should be made before 10% of ryegrass seed heads have emerged, typically in November. After cutting the grass, it should be left to wilt before being completely covered to keep air out. This will ensure that you get good acetic acid fermentation. Make sure your silage is protected from rats and birds.
- **Hay** (dried, cut grass) is made from mature pasture (more seed heads) and when the weather is fine, typically during mid to late summer. While hay has more dry matter than grass, it is less digestible. Where spring pasture is 70% digestible, medium quality hay is about 45% digestible.

Stocking rate guide

Lowering stocking rates can reduce the amount of nitrogen entering the lake. A low intensity stocking rate table (as shown on pages 24 - 25) has been developed as part of the Lake Rotorua nutrient rules. Stocking rates are based on winter carrying capacity. Lifestyle block owners with 5 ha or less are encouraged to follow these stocking rates as a voluntary good practice.

Stocking rate guide

	Stock Class	Total animals by stock class allowed per hectare	Total hectares required per animal in each stock class
Horses	Pony	2.1	0.48
	Small horse (including w/foal)	1.6	0.64
	Large horse (including w/foal)	1.0	0.96
Dairy	Dairy bull	1.5	0.66
	Dairy cow	0.9	1.15
	Dairy heifer 1-2 years age	1.6	0.65
	Dairy heifer calf (weaned)	3.5	0.29
Drystock	Beef bull	1.5	0.68
	Beef cow	1.3	0.79
	Bull 1- 2 years age	1.5	0.65
	Steer 1-2 years age	1.8	0.56
	Heifer 1-2 years age	1.7	0.58
	Steer calf <1 year (weaned)	3.8	0.26
	Bull calf <1 year (weaned)	3.5	0.29
Heifer calf <1 year (weaned)	3.0	0.33	
Sheep	Ram	15.5	0.06
	Adult ewe	15.0	0.07
	Sheep 1-2 years of age	14.2	0.07
	Sheep <1 years of age (weaned)	25.9	0.04
Goats	Bucks & does <1 year	24.9	0.04
	Angora does	11.3	0.09
	Feral does	13.8	0.07
	Feral bucks & wethers	24.9	0.04

	Stock Class	Total animals by stock class allowed per hectare	Total hectares required per animal in each stock class
Deer	Stag	4.9	0.21
	Breeding hind	5.0	0.20
	Hind 1-2 year	9.9	0.10
	Stag 1-2 years age	13.2	0.08
	Fawn (weaned)	15.2	0.07
Other	Alpaca	15.4	0.06
	Llama	7.7	0.13

NB: These rates give a leaching rate of about 18 kg Nitrogen per hectare per year

Here are two examples of how to use this table to calculate recommended stocking rates:

Fixed area, how many stock?

Jane owns a 5 ha block and wants to raise llamas. The stocking rate table indicates that Jane will ideally have 7.7 llamas per ha. This means that Jane can have 38 llamas on her property.

Fixed stock, how much area?

Tony has two ponies (0.48 x 2), one beef bull (0.68) and five sheep, one to two years of age (0.07 x 5). This means Tony will ideally need just under 2 ha (1.9 ha) to accommodate his stock levels.

Grazing management

Pasture growth is combination of soil fertility, temperature and rainfall, pasture species and grazing management. Pasture quality and growth determines the stocking rate. A stocking rate is best measured by the number of stock the block can carry at the start of winter.

- Too few animals and your pasture can get out of control and its quality can deteriorate.
- Overstocking can result in your pasture being grazed to low levels and slower regrowth.
- Overstocking contributes to excess nutrient losses, soil compaction and erosion in areas where plant material has been destroyed.
- Overstocking may result in reliance on imported feed which can be costly.

Avoid pugging

Pugging occurs when wet soil is trampled by farm animals, especially larger stock, resulting in an almost completely muddy surface. Hooves create shallow holes of compacted soil, damaging the pasture by burying it in the mud. Soil types differ in their vulnerability to pugging. Avoiding damage from pugging is beneficial to waterways, as pugged areas increase surface runoff.

An area of seriously pugged pasture in spring will produce about 40% less dry matter than undamaged pasture through the following season. Here are some tips to avoid pugging:

- Graze low-lying or slow draining paddocks before the wettest part of the season.
- Good pasture cover gives better protection against pugging – build pasture cover leading in to the wet season.
- Graze land that is at risk of pugging with lighter stock.

Looking after your animals

As an owner of stock and pets you have certain legal responsibilities. These obligations are set out in the Animal Welfare Act 1999. This act requires you to provide for your animals' 'physical, health and behavioural needs'.



Key aspects of this act include:

- You must not ill-treat any animal so that it experiences unnecessary or unreasonable pain or suffering.
- If you have a sick or injured animal you must treat it or get it treated.
- You must not kill any animal, even one you own, in such a way that you cause it unreasonable or unnecessary pain or distress.
- To report any animal welfare issue or make a complaint to the Ministry for Primary Industries, call **0800 008 333**.
- For more information about animal welfare visit **www.biosecurity.govt.nz**



Meet Fran & Ash Gribble

Moving out of town to their 5 ha lifestyle block near Ngongotaha fifteen years ago was an easy decision for Fran. She grew up on a Waikite Valley dairy farm where she developed her love of rural living and horses.

Career and family commitments put an initial hold on Fran's rural dreams. Eventually Fran's daughter, Amanda, inspired her to get back into horse riding. Fran convinced her husband Ash that it was time to take the next step and get their own land.

Finding 'Gribble Farm' made this decision easy because the property came with a ready-made dressage arena. Once the stables were completed, Fran and Amanda could focus on enjoying more time with their horses. While Ash was initially reluctant to make the move, he now loves living on their lifestyle block and can't imagine living anywhere else.

One of the biggest challenges the Gribbles first faced, was managing the erosion on the edge of Waiteti Stream. This involved contouring paddocks to divert surface runoff, fencing off stock from the stream and developing a planting programme to stabilise the banks. These actions have made a big difference but there is still more to do.

Fran worked with Bay of Plenty Regional Council in 2014 to help remove the mature Eucalypts that threatened to fall into the stream, taking a lot of soil with them.

Fran enjoys the challenges each day brings. "There's always plenty to do. But it's great to reflect on the changes we've made here, and enjoy the rewards of our hard work. It's definitely a labour of love," she says.

Managing erosion

The deep pumice soils found across the Lake Rotorua Catchment are highly susceptible to erosion from water flowing across the surface. Eroded sediment can severely impact stream habitat and lower water quality. Maintaining good pasture cover is key to minimising runoff and erosion. Heavy stocking rates increase erosion risk while reducing pasture production. When pastures are grazed hard, bare soil becomes compacted and exposed. These effects are more pronounced when soil is wet (see pugging on page 26).

Here are a few other ways you can manage runoff on your lifestyle block:

- Consider over-sowing on areas where rain water flows have formed channels (known as 'rills') using mat-forming pasture species.
- Monitor soil compaction with the Visual Soil Assessment Kit available from **www.landcareresearch.co.nz**
- Site fences, troughs and gates carefully to minimise stock tracking issues.
- Consider retiring steep land or eroding gullies and plant with trees. Retired land has no fertiliser requirements and therefore allows you to concentrate your fertiliser budget on the more productive areas.
- Establishing woody vegetation (native or exotic) will bind the soil and help with stability. Woodlots for timber production may also provide alternative income.

For more information on managing erosion, take a look at the following factsheets on www.boprc.govt.nz

Erosion Toolkit

Management of Retirement Areas

Runoff Management on Pasture

Plant Selection for Disturbed Sites

Grasses and Legumes for Erosion

Planting woodlots

A supply of timber on your block can be valuable, both as a source of firewood and as a future source of income. Woodlots also provide shelter and erosion control, as well as improving the landscape and value of your lifestyle block.

Choosing where to plant and which species needs to be thought through carefully. If it is purely firewood that you're after, you may get enough wood from pruning your current shade, orchard or ornamental trees.

For a potentially valuable timber crop, you need specialist advice on species, site selection, access, pruning, pest management and other matters. An excellent starting point is the NZ Farm Forestry Association, www.nzffa.org.nz. The following advice should be seen as high-level guidance only.

Where to plant

It's important to plant your trees in an area that is accessible for ease machinery and vehicle pruning. Make sure your trees are planted near the main road or your internal farm roads.

You also need to visualise how big the trees will get at maturity so you plant at a safe distance from buildings and garden areas. Remember to consider your neighbours and the impact a woodlot can have on boundary fences, shading and view corridors.

What to plant

- New Zealand's most common timber species, *Pinus Radiata*, is generally not suitable or economic for lifestyle blocks. Higher value, special purpose trees should be considered.
- High value timbers for small woodlots, include Totara, Cypressess and Eucalyptus species. These species require a rotation of around 40 years, and are more specific in their site requirements and marketing opportunities than Radiata pine.
- Consider having a mix of wood that provides a range of burning potentials for home heating.

For more information on planting trees, take a look at the following factsheets and resources on www.boprc.govt.nz

- Erosion Toolkit
- Planning Farm Woodlots
- Multi-purpose Exotic Tree Species
- Alternative Woodlot Species

Other resources

www.treecrops.org.nz - a useful resource, particularly the 'crops' section

www.lifestyleblock.co.nz



Bush, gully and riparian protection

If you have steep gullies, pockets of bush or wetlands on your lifestyle block, you may want to consider enhancing or protecting these natural features and improve the visual appeal of your property.

Protecting waterways

Excluding stock and increasing vegetation on wetlands or waterway margins will reduce erosion of stream banks and sediment runoff, and improve water quality.

You can protect waterways on your lifestyle block by maintaining a wide buffer strip back (riparian margin) from waterways to filter sediment and contaminants getting into the waterway.

Consider:

- Erecting permanent or temporary fences well back from the wetland or waterway – the steeper the slope, the wider the buffer strip should be.
- Planting riparian areas with indigenous plants and trees.

Fencing and planting are likely to be the biggest costs to enhancing biodiversity, preventing gully erosion and protecting our wetlands and waterways. Fencing costs will depend on your terrain, type of fence and stock.

Enhancing biodiversity

Biodiversity, short for biological diversity, is the term used to describe the variety of life found on Earth. It's about the number and variety of living things like animals, birds, plants, insects and micro-organisms in a particular area, as well as the complex relationships between them.

Looking after natural bush and wetland areas on your lifestyle block can help protect local biodiversity and water quality.

You may have an existing pocket of native bush that you could enhance or extend.



You may have a gully or other erosion prone areas that you could turn into a natural feature through native planting.

Enhance the natural features on your lifestyle block by:

- Excluding stock from the special area or feature
- Having an ongoing pest and weed control programme
- Restoring an area with enhancement planting, this will provide a habitat for insects, birds and micro-organisms.

Encouraging birds

Invite birds to your lifestyle block by planting native trees, flax and shrubs that provide a year round supply of food. The Department of Conservation is a great source of information about plants that are a food source for birds.

Getting help with a riparian management plan

If you have wetlands, waterways and gullies on your lifestyle block, you may be eligible for a Bay of Plenty Regional Council 'Riparian Management Plan' which includes the following free support:

- Identification and mapping of relevant riparian areas
- An assessment of erosion issues in the riparian areas



- A schedule of works with cost estimates
- Specifications for site preparation and fencing
- Identification of any works eligible for grants
- Provide technical expertise on erosion control of gullies

Council staff can also advise on what financial support is available.

For more information on protecting natural features, take a look at the following factsheets and resources on www.boprc.govt.nz

- Erosion Toolkit
- Riparian Protection
- Protection Fences
- Plant Selection for Environmental Protection Areas
- Native Plants for Revegetation Projects
- Biodiversity
- Riparian Management Plans

www.doc.govt.nz - Plants to support birds and other wildlife.

Meet Jonathon & Linda Findon

Jonathan and Linda moved to their lifestyle block in Brunswick Park four years ago. They bought the 8000 m² bare block five years earlier which gave them time to prepare the site and build their new home, to take advantage of the great views of Lake Rotorua.

Moving from urban Christchurch to lifestyle block living was a new experience for Jonathan. But for Linda, who had grown up on farms in the Eastern Bay, it was a welcome return to rural living.

They have divided the block into four small paddocks to graze stock and fill their freezer. Their animals consist of seven sheep, chickens, one piglet and an energetic dog called Spud. Looking after stock has been very much a 'learn as you go' experience for Jonathan. He manages the pasture without using fertiliser and has incorporated a simple rotation plan to keep the paddocks in good condition.

Supplementary feed is sourced from his own and neighbouring lifestyle blocks. "We're pretty good at working in with each other. A phone call typically goes out early summer to see if anyone wants hay baling done. Teaming up helps with getting contractors in," says Jonathan.

Keeping work on their lifestyle block to a minimum is important for the Findons. Their priority is growing their own business, Geohazard Environmental. "I spend very little time on the property during the week. We've got the place set up now so that it pretty much looks after itself," he says.

Recent landscaping includes planting a strip of native trees on the eastern boundary. Looking ahead, Jonathan and Linda plan to establish a small wetland that takes advantage of a drainage easement running across the property.





Managing gorse

Gorse first arrived in New Zealand in the early 1800s for use in hedge rows, but is now a major pest plant. Like peas and beans, gorse is a legume, or nitrogen fixing plant. Gorse leaches large amounts of nitrogen to groundwater which flows into our lake. It is estimated that 870 ha of gorse in the Rotorua Catchment leaches about 30 t of nitrogen every year.

Gorse seed can lie dormant for decades. Removing adult gorse plants by burning or bulldozing actually creates ideal conditions for dormant seeds to germinate.

Foliar spraying is the recommended method for eradicating large infestations and scattered plants.

- For solid blocks of gorse, spray with metsulfuron-methyl (e.g. Escort, Matrix) during late spring and summer. With a knapsack or CDAX use 5 g per 10 L water. With a handgun use 20 g per 100 L water. This is a non-selective herbicide that will also kill grass so is best used on solid patches of gorse.
- For selective control that will not damage pasture, use Triclopyr (e.g. Grazon, Tricop 600). Applied with a knapsack, use 60 ml per 10 L of water or with a hand gun, 200 ml per 100 L water.

- Always add a penetrant (e.g. Organosilicone or Pulse) to the spray mix. This will help the herbicide penetrate into the plant leaves. Use 10 ml for every 10 L water.
- Always read the label to ensure the correct rates and safety precautions are used.

Thorough coverage is important. All foliage should be wet to the point of runoff. Ongoing treatment is recommended until the seed bank in the soil is exhausted. Grazing sheep and goats can also help reduce gorse seedling survival and establishment.

In the Bay of Plenty Region, gorse is classified as a 'Boundary Control Pest Plant' which means that gorse within 10 m of any property boundary needs to be destroyed (See Council's Pest Management Strategy).

Need advice on gorse control?

If you have significant areas of gorse on your lifestyle block, Bay of Plenty Regional Council may be able to help with advice and support.
Call **0800 884 880**.

For more information on managing gorse, take a look at the following factsheet and resources on www.boprc.govt.nz

- Pest Plant Control: Gorse
- User Guide to the Bay of Plenty Regional Pest Management Plan



Other plant and animal pests

If you've taken the first steps to protect natural features on your property by fencing out stock and planting, it's a good idea to consider animal and plant pest management as well. In most cases, it will be important to coordinate any control efforts with neighbouring landowners to achieve the best results.

Plant pests

Many common plant pests or weeds are not invasive and pose no serious threat - they are simply a nuisance. Many invasive weeds are species that have escaped from gardens and 'gone wild'. They can be spread through green waste dumping or when the seeds are eaten and processed by birds. Invasive weeds can also be unintentionally introduced through stock feed (e.g. seeds in fodder crops).



Identifying weeds

If you're having trouble identifying weeds on your property, there are a few online resources that can help you put a name to them:

- **www.weedbusters.co.nz** includes a 'Find that Weed' tool with a comprehensive image library and list of common and not so common weeds.
- **www.apest.co.nz** is also a useful site for weed identification.

Weed control tips

1. Start small. Avoid creating large cleared areas which often allow new and different weeds to establish. Tackle outlying weed patches first to slow the rate of weed spread before starting on the worst areas. Replace weeds with natives or non-weedy plants as you go.
2. Destroy weeds before they fruit or seed to prevent a new generation of weeds growing inside your work area.
3. When shifting dead weeds, take care not to spread any seeds or fragments around that could grow again.
4. Decide on the best disposal method to use before you start, particularly if working in a large area.
5. Stop the spread of pasture weeds by making sure machinery is clean before using it on a new job or property.

Animal pests

Animal pests can significantly damage native vegetation, prevent regeneration and affect bird life, undoing your good work. Pest management costs will vary with pest type, numbers and the way you decide to control them. Key animal pests to watch out for are possums, rats, wallabies, rabbits, hares, feral cats, ferrets and stoats. If you see any wallabies in the Hamurana, Kaharoa or Ngongotaha areas, contact a Bay of Plenty Regional Council Biosecurity Officer.

The main control options include traps, bait stations and shooting. Bay of Plenty Regional Council can provide advice about the latest humane traps, the best bait station designs and appropriate poisons for your situation.

Getting help with animal and plant pest control

You can get help and advice on managing invasive weeds and pests on your property from Bay of Plenty Regional Council. A biosecurity officer can help you with:

- Identifying unknown weeds and pests
- How to plan and go about your weed and pest management
- Where to get herbicides, pesticides and equipment
- Project coordination with multiple landowners

For more information on managing animal and plant pests, take a look at:

www.boprc.govt.nz - User Guide to the Bay of Plenty Regional Pest Management Plan and Plant and animal pest factsheets

www.weedbusters.co.nz & **www.agpest.co.nz** - Useful for identifying weeds and weed control options

TOP 4 PEST ANIMALS TO LOOK OUT FOR IN YOUR AREA



Dama Wallaby



Rainbow Lorikeet



Rook



Koi Carp

JOINING FORCES AGAINST PESTS

REPORT PESTS TO:

P 0800 STOP PESTS (0800 786 773)

W www.boprc.govt.nz/pestpatrol



Meet Tracey & Wayne Denize

Tracey is no stranger to lifestyle block living. In 2015 Tracey and Wayne moved onto their third lifestyle block in Hamurana. Each move was to a smaller property with its own set of challenges.

Their 1.3 ha property is tucked away from the main road. It offers peace and privacy while still being relatively close to town so they can juggle family, full-time employment and several projects on their block.

Their first major challenge was restoring the 80 year old house that had been relocated from Haupapa Street to their Hamurana block about 20 years ago. After many months of living in chaos, the house has been returned to its former glory and is now the much loved home of Tracey, her husband Wayne, daughter Amanda and their two dogs Toby and Zoe.

The vegetable gardens and chook run have also been established but there's still plenty to do. One long-term project is managing the erosion caused by the Hauraki Stream that borders their property. While the stream is normally just a trickle, during flood events it can become a torrent eroding the stream banks in its flow path.

To help control the bank erosion, the Denizes have a Riparian Management Plan with Bay of Plenty Regional Council. This plan contributes to the costs of clearing, tree planting and weed spraying, as well as re-shaping the stream banks to divert the flow.

There are no grazing animals on their lifestyle block, which is a welcome change for Tracey. "Not having stock gives us the chance to focus on doing other things around the place. The property has not experienced a lot of love in the past, but little by little we're changing that."



Looking after your septic tank

Poorly designed, constructed and maintained septic tanks allow bacteria and nitrogen laden wastewater into the natural environment, seeping into the groundwater, streams and our lakes. Approximately 400 lifestyle blocks (0.4 ha - 5 ha) remain un-reticulated in the Lake Rotorua Catchment. With an average occupancy of 2.6 per household, the estimated nitrogen load from these septic tanks is about 7 t per year.

Caring for your system

Your septic tank needs to be pumped out and inspected regularly (about every three years) to make sure it operates efficiently. Provided your on-site effluent treatment system is properly cared for, it will effectively dispose of effluent and give you many years of reliable service.

A failed septic tank system is a serious health and environmental hazard. The warning signs are obvious: wastewater ponding on the ground surface, the smell of sewage near the tank or land treatment area, and slow running drains or toilets.

How can I find out about my system?

The Rotorua Lakes Council (07 348 4199) should have details of your system on your Property File. It is a good idea to have a copy of these details available so that if anything should go wrong and you need assistance from a drainlayer, you can make informed decisions about what to do.

Septic tank good practice

Do:	Don't:
<ul style="list-style-type: none">✓ Install water saving devices, such as dual flush toilets.✓ Use biodegradable and low phosphate soaps and washing powder.✓ Divert stormwater away from your soakage field.✓ Make sure your tank lid is easily accessible to assist with pumping. Install an outlet solids filter.✓ Take note of who installed it.✓ Keep a record of when it is pumped out.✓ Keep a careful record of where your tank, soakage and any filter is installed, with photos.	<ul style="list-style-type: none">✗ Don't use a waste disposal.✗ Don't flush items like sanitary napkins, disposable nappies or baby wipes even if they are labelled 'flushable'.✗ Don't over-use powerful bleaches and disinfectants, or put chemicals or paint down the sink.✗ Don't allow vehicles or stock on the soakage field.✗ Don't cover the mushroom vent.✗ Don't grow plants with invasive roots over soakage trenches or pipes.✗ Don't empty chemical toilet waste into your system.✗ Don't build on your reserve land application area.

For more information on septic tanks, take a look at the following factsheets and resources at www.boprc.govt.nz

- On-Site Effluent Treatment Regional Plan (OSET Plan)
- Why it's important to maintain your septic tank
- Managing your Wastewater
- Plants suitable for planting on wastewater disposal systems.

Being a good neighbour

Living on a lifestyle block means your nearest neighbour may be some distance away. However, your activities can still impact on them. How you manage vegetation, water, waste, fire, domestic animals, livestock, vehicles and machinery, fencing, and noise will all impact on your neighbours and the relationship you have with them.

Ten ways to keep your neighbours on-side

1. Maintain boundary fences so that stock cannot stray.
2. Have a weed control plan to keep on top of problem areas.
3. Carry out rodent control where needed.
4. Dispose of rubbish by taking to a transfer or recycle station, including tanalised timber waste and plastics, as burning can release toxins.
5. Minimise the noise of barking dogs by situating kennels away from your neighbours' homes or property boundaries
6. Minimise smells by situating your compost bin or site away from neighbouring homes and property boundaries.
7. Dry green waste first before burning, and burn when fire risk is low.
8. Consider the impact trees and woodlot can have on boundary fence lines, shading and view corridors. Keep shelter belts well-maintained and topped.
9. Identify the flood risk areas on your property and remove any materials or obstructions that may cause problems for yourself or downstream neighbours during a flood.
10. Co-operate with neighbours to control weeds and pests (e.g. gorse, possums). This will be far more effective than working alone.



Looking for more information?

Contact Bay of Plenty Regional Council

- P** 0800 884 880
- E** info@boprc.govt.nz
- W** www.boprc.govt.nz
- A** 1125 Arawa St, Rotorua

Useful resources for lifestyle block owners

Websites

- www.lifestyleblock.co.nz
- www.thisnzlife.co.nz
- www.treecrops.org.nz/resources
- www.ruralresidentialliving.com.au

Magazines

New Zealand Lifestyle Block
(monthly magazine)

Books

FMG Lifestyle Block Owner's Manual
- A free, how-to guide. Order this
online at www.fmg.co.nz

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