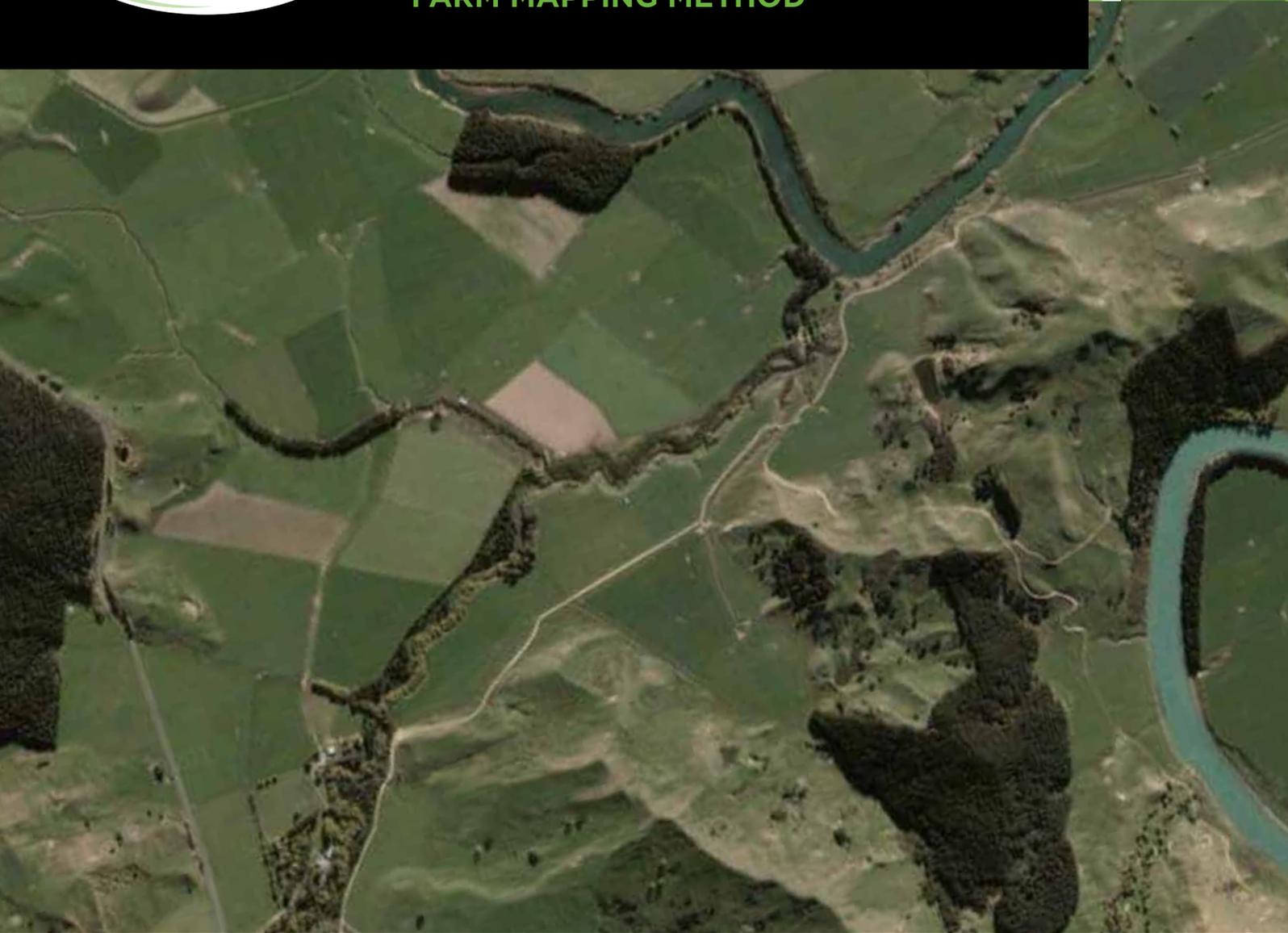


LEVEL 1



**LAND AND ENVIRONMENT
PLAN GUIDELINES**
FARM MAPPING METHOD



0800 BEEFLAMB (0800 233 352) | WWW.BEEFLAMBNZ.COM
BY FARMERS. FOR FARMERS



steps

ASSESSMENT

What and where are the issues?

What has already been accomplished?

RESPONSES

What can be done?

PLAN

What, how, where, when, how much?

IMPLEMENT

Carry out activities, monitor and record.

REVIEW

Review progress annually.

Farm mapping method

These guidelines provide one method of preparing an entry level Land and Environment Plan (LEP). Emphasis is on using a farm map to identify areas or sites where actions need to be taken to address land and environmental issues, and to highlight any outstanding areas where further work is required.

A farm map is needed, which can be a copy of a farm aerial photo, a paddock map, or a digital map used with computer software. Many regional councils will help with sourcing an aerial photo or map for LEP purposes.

Instructions

Creating an entry level LEP using the farm mapping method involves:

- Locating likely sites and areas with land or environmental issues or risks.
- Recording existing progress towards land or environmental improvement.
- Generating responses to issues that need further attention.
- Summarising responses as a plan, including a ranking of priority, cost- estimate, and basic scheduling.
- Reviewing progress regularly and at least annually

When reviewing this LEP you can assess progress, consider new issues if and when they arise and carry over any incomplete activities.

Contact your local Beef + Lamb New Zealand Extension Manager for assistance or further information about Land and Environment Planning (regional offices are provided on back page).

By completing this entry level LEP you will be joining the growing number of farmers using good management tools to future-proof their farms.

1) Map out the issues

Start with a farm map

You will need a farm or paddock map. Make several copies of the original because you will be drawing on them.

Alternatively, a copy of an aerial photo (or equivalent) can be used to create a new farm map. Draw fences onto the photo. Accuracy is not critical because this LEP level does not require accurate measurement.

You can also use electronic mapping packages which let you create maps on your computer. If you cannot get a map, you can switch to the 'risk assessment method' guidelines for developing a LEP as it does not need a farm map.

Map in farm features and existing land and environmental works

Examples of features and works are provided on the map that follows. Use symbols, lines and hatching to mark the location of features and works on your map.

Start a list or key to describe what each map symbol represents (see map example on following page).

Locate land and environment priorities

Most key land and environmental issues will be well known to you. Mark them on your map. Coloured pens can be useful for highlighting differences.

A paddock-by-paddock approach can be useful to help you get started.

1. Pick a paddock and focus on it.
2. Think about key issues, and whether or not they relate to the paddock in question. Does the paddock pug? Do stock enter the creek? Where is runoff going? What if I fenced off that wetland? Consider the examples below to help locate possible issues. If an issue is worth attention, then draw it on your map.
3. Repeat the same exercise with the next paddock. The idea is to think about each paddock in detail, until the whole farm has been covered.

Prioritise your list of issues in order from most to least important. We recommend that you plan to action no more than 10 issues per year for this LEP level. Set aside the remaining issues so you can refer to these when you are reviewing and updating your plan at the end of the year and as your priorities change.

Examples of features, existing works, and priority locations

Existing works requiring maintenance

- Erosion control plantings e.g. poplars
- Fences for streams and gullies
- Stock crossings, bridges and culverts
- Riparian zones
- Wetlands
- Fenced bush (e.g. QE II)
- Shelterbelts
- Woodlots/forestry
- Dams and other structures

Target areas

- Waterways and unprotected riparian areas
- Erosion prone slopes
- Pugging and compacted areas
- Fragile soils
- Marginal production areas
- Unprotected wetlands
- Pest areas (e.g. scrub, gorse, ragwort, possums)
- Unprotected bush remnants

Hotspots

- Stock fords
- Slips
- Dumps
- Offal holes
- Chemical storage sheds
- Runoff points to water (dips, yards, tracks)

2) Develop Responses

What are responses?

Responses set out what you will do to address the issue or priority. They can be management activities (e.g. use conservation tillage), building works or structures (e.g. a sediment retention dam), or simply getting more information or advice before making a decision.

General Responses

Recognising general responses can be helpful for identifying how to deal with a specific issue. General types of response include:

AVOID: For ensuring that the issue does not develop into a problem (e.g. “I plan to avoid pugging by grazing cattle on forestry blocks if at-risk soils become saturated”).

REMEDY: For fixing issues that have already occurred. (e.g. I will stop the cattle trampling the gully wetland by fencing it).

MITIGATE: For predicable issues that cannot be avoided. Use responses that minimise or manage the degree of impact (e.g. “I will minimise P-runoff risk by switching to RPR fertiliser”).

PREPAREDNESS: For issues difficult to predict (e.g. flooding). Develop contingency responses so you know exactly how to respond should they ever happen.

Specific responses

Develop specific responses for each priority issue marked on the LEP map. Be specific:

- A non-specific response: “Plant some poplar poles” ✗
- A specific response: “Plant 90 Kawa poplar-poles with protector sleeves on the steeper faces of Lower Gorge paddock” ✓

Examples for a range of possible responses are provided on the next page.



Examples of potential responses (non-specific)

Maintenance of existing works

- Replace missing space-planted poplars on slip-prone slopes
- Regular silviculture for existing conservation trees and woodlots
- Maintain fence condition for protected areas (riparian, bush, wetlands, etc)
- Regularly desilting drains, detention dams, and silt traps
- Maintain track drainage and runoff diversion earthworks
- Other...

Hill country erosion

- Retire or afforest areas with problem erosion
- Space plant poplars, willows or other suitable species
- Strategic use of space-planting or woodlots to protect tracks, buildings, fences, etc.
- Design or locate tracks, fences, etc. in a way that minimises risk of damage from erosion

Seek additional information

- Libraries
- Regional councils
- The internet
- Rural newspapers
- Field days
- Conferences and workshops
- Other...

Pugging and compaction

- Use alternative grazing areas when high-risk paddocks are wet
- Install and maintain drainage
- Avoid cultivating when at-risk soils are plastic
- Avoid intensive grazing by heavy cattle
- Other...

Wind erosion

- Use conservation tillage techniques
- Establish and maintain shelter belts
- Plant stabilising species, or containment structures in sand country
- Other...

Seek local or expert advice

- Neighbours
- Regional council officers
- Farm consultants/advisors
- Fertiliser reps
- Universities and research organisations
- Other...

Water quality

- Exclude stock from streams, wetlands and other water bodies
- Provide alternative stock water in all paddocks (e.g. troughs)
- Fence and retire riparian zones
- Fence runoff convergence zones (e.g. headwaters)
- Avoid superphosphate applications if rain is forecast
- Install dams for trapping sediment
- Consider low solubility types of P-fertiliser
- Install culverts or bridges where stock cross waterways
- Maintain Olsen P levels at or below the biological optimum
- Avoid direct fertiliser application to waterbodies
- Avoid super phosphate applications in high risk months (June, July, Aug, Sept)
- Avoid excessive N-application rates (>150 kg N/ha/yr)*
- Use N-inhibitor products if appropriate
- Avoid winter applications of N-based fertilisers
- Site ofal holes, dumps, septic tanks, dips away from water and leaching-sensitive areas

* *Note that urine patches rather than N fertiliser are the key source of N leaching in most pastoral systems*

3) Develop the response plan

Use this table to help fill in the response plan

- List each issue that you identified on the LEP map.
- Rank or list each issue in terms of priority.
- Write down what you will do about each issue. Make your responses SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). An example is given for erosion.
- Estimate possible cost (if any), and the timeframe for completing the response

RESPONSE PLAN				Year:	
PRIORITY	ISSUE	RESPONSE	COST	TIME FRAME	PROGRESS
Rank each response in order of priority	Detail the issue of concern	Specify your response to minimise or manage the issue	Estimate cost	Time-frame to be completed within	Tick when completed. Carry over if not
2	Erosion in far corner of Sam's Paddock	Plant 120 poles @ 10 metre spacings. Use Kawa poplar because of disease resistance.	120 poles @ \$4/pole 120 sleeves @ \$3.80 per	50 poles this year (2013) 70 poles in 2014	
1	Steers pugging the wet part of the flats in winter	Test using the lane as a stand off area when really wet. Check the tile drain outfalls and make sure they're clear.	nil	Winter 2013	
1	Offal hole fills with water. Must be getting into the water table.	Fill in current hole and have a new one excavated near the pine shelterbelt on the top terrace. Find out about cost.	\$800?	Cost estimate by Jan 13 Excavate Feb-Mar 13	
3	Unfenced wetland	A) Fence off the wetland from the main paddock (70 metres) approx \$700 for fencing. B) Plant some native trees and flaxes. C) Find out if Ducks Unlimited would be interested. D) Find out if the regional council can help.	Contact DU & council Jan 08 Need to find other costs from DU or council	Look to fence late Feb 13 Plant natives in winter	

4) Implement, monitor, review and register

- Implement each response according to your priority and timeline.
- Monitor and record all your achievements.
- Remember to review and reassess each year.
- Register your completed plan at LEP@beeflambnz.com. This way you can be sure to receive the latest news on LEPs and be notified of the latest modules on topics such as Keeping Stock out of Waterways, Phosphorus and Sediment Management, and Nutrient Budgets.

Congratulations on designing a Land and Environment Plan specifically for your farm.

For full integration with farm business planning you can refer to this LEP when making decisions about farm development and financial planning.

Other LEPs

Level 2 LEPs

Level 2 Land and Environment Plans look at your farm's land and soil resources, develop Land Management Units (LMU), use LMUs as the basis for nutrient budgeting, strengths and weaknesses analysis, and yield gap appraisal. LEP 2 summarises opportunities for more sustainable farming as a three year response plan.

The aim is to produce a LEP that can be audited and used as part of a quality assurance programme or used to meet regional council requirements.

Level 3 LEPs

Level 3 Land and Environment Plans build on the work done in LEP 2, but with greater emphasis on specifications and methods used by professional farm planners. This includes a paddock scale inventory describing land resources, an Overseer® budget prepared by a qualified operator, and increased emphasis on monitoring to measure how the farm environment is improving.

Beef + Lamb New Zealand Regional Offices

Beef + Lamb New Zealand
51 Norfolk St, Regent
PO Box 5111
Whangarei 0112
Phone: 09 438 0672

Beef + Lamb New Zealand
Lvl 4, 169 London St
PO Box 9062
Hamilton 3240
Phone: 07 839 0286

Beef + Lamb New Zealand
75 South Street
PO Box 135
Feilding 4740
Phone: 06 324 0390

Beef + Lamb New Zealand
Farming House,
211 Market St South
PO Box 251
Hastings 4156
Phone: 06 870 3495

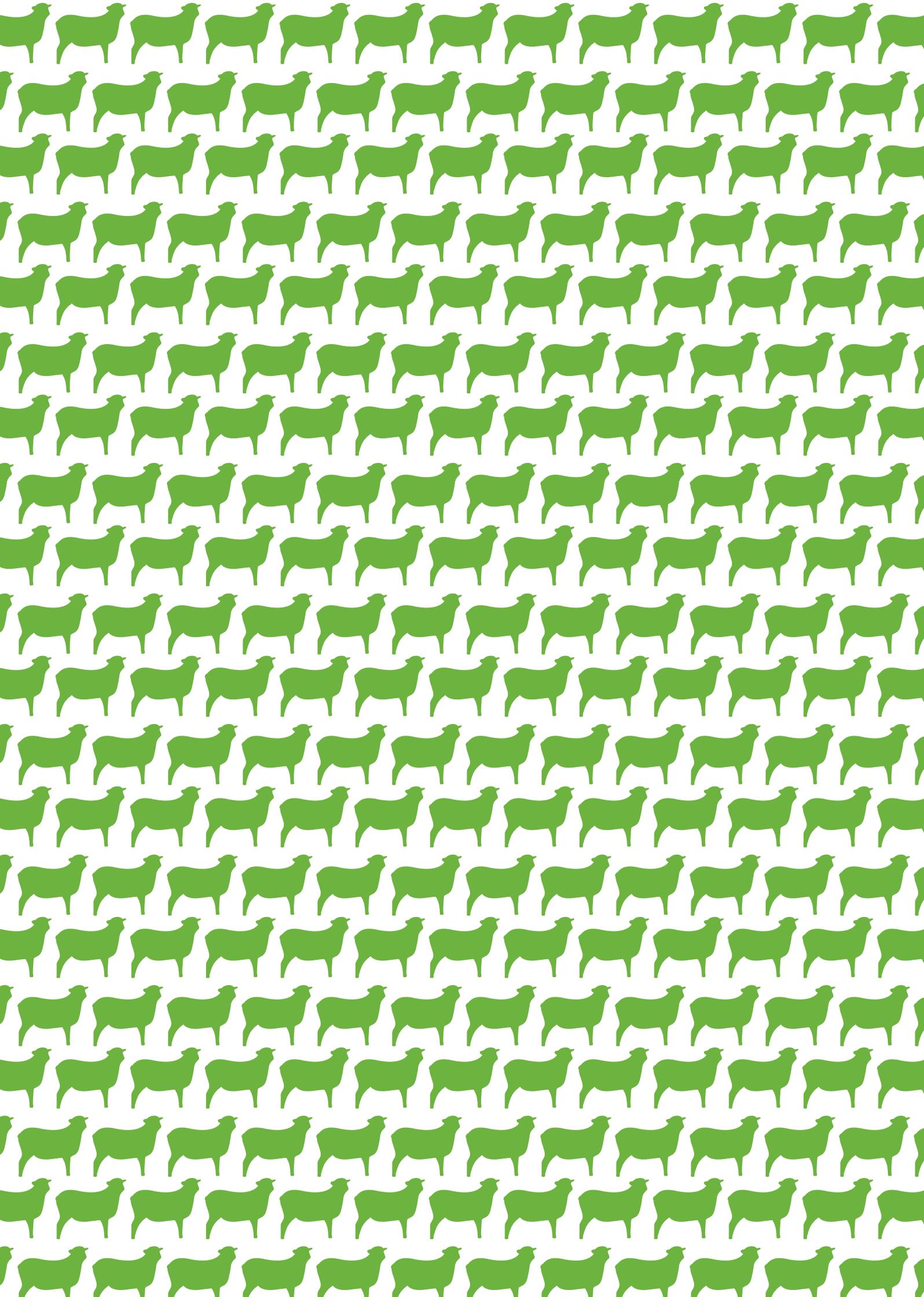
Beef + Lamb New Zealand
140 Dixon Street
PO Box 487
Masterton 5840
Phone: 06 370 2389

Beef + Lamb New Zealand
1/585 Wairakei Rd, Harewood
PO Box 39085
Christchurch 8545
Phone: 03 357 0693

Beef + Lamb New Zealand
465 Cormacks-KiaOra Road
16 C Road
PO Box 390
Oamaru 9444
Phone: 03 433 1392

Beef + Lamb New Zealand
69 Tarbert Street
PO Box 37
Alexandra 9340
Phone: 03 448 9176







0800 BEEFLAMB (0800 233 352) | WWW.BEEFLAMBNZ.COM
BY FARMERS. FOR FARMERS