OUR PLAN | Template index

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Vision, Values and Goals

OT1

Date compiled:

VISION: The overarching aspirations for the farm business. I.e. the big picture of where you want to be
VALUES: Standards or Principles that are important to the farm business and its owners. Such as family ownership/involvement and being environmentally sustainable
OVERALL GOALS: The long-term (1 year, 2 year, 5 year and more) aims that you want to achieve. Should include business and personal goals.
1. SOILS GOALS
2. FRESHWATER VALUES AND GOALS

Vision, Values and Goals *continued*

OT1

3. BIODIVERSITY GOALS

4. RESPONDING TO CLIMATE CHANGE GOALS

5. WASTE AND CHEMICAL MANAGEMENT GOALS

6. FORAGE CROPPING GOALS

Describe your farm system

OT2

Farm Location (Region; District; Nearest Town)	
Total Farm Area	
Describe farm stocking policy	
Stock numbers	
Lambing/calving dates	
Replacement rate for breeding stock	
Mean weaning date	
Birth rate (lambs, calves, fawns weaned to ewes, cows, hinds mated)	
Meat production	
Antler production (kg/year)	
Velvet production (kg/year)	
Wool production (kg/year)	
Crop area and yield	
Month sown	
Months harvested	
Supplement bought in	
Supplement made on-farm	
Other	

Farm Team

OT3

Team member	Role	Role in implementing farm plan

Resource Chart

OT4

LMU	DESCRIPTION	STRENGTHS	WEAKNESSES	USES AND MANAGEMENT

Resource Chart

OT4

LMU	DESCRIPTION	STRENGTHS	WEAKNESSES	USES AND MANAGEMENT

OUR PLAN

Visual Soil Assessment Score Card - Soil Indicators

ST1

Visual indicators for assessing soil quality under hill country land uses

Date: _____ **Land use:** _____

Site location: _____

Landform: ☐ Ridge ☐ Shoulder ☐ Track ☐ Back slope ☐ Lower slope ☐ Upper slope ☐ Mid slope ☐ _____ ☐ Other

Soil type: **Aspect:** **Slope angle:**

Textural qualifier: ☐ Sandy ☐ Loamy ☐ Clayey

Moisture condition: ☐ Dry ☐ Slightly moist ☐ Moist ☐ Wet

Seasonal weather conditions: ☐ Dry ☐ Wet ☐ Cold ☐ Warm ☐ Average

Visual Indicator of Soil Quality (see soil resources on www.beeflambnz.com for details)	**Visual Score (VS)** 0 = Poor condition 1 = Moderate condition 2 = Good condition	**Weighting**	**VS Ranking**
Degree of soil erosion		x 3	
Surface relief		x 1	
Topsoil depth		x 2	
Organic Matter (Humus)		x 2	
Soil structure and consistence		x 3	
Soil porosity		x 3	
Soil colour		x 2	
Number and colour of mottles		x 2	
Earthworm counts		x 2	
RANKING SCORE (Sum of VS rankings)			

Soil Quality Asssessment	**Ranking Score**
Poor	< 10
Moderate	10 – 25
Good	> 25

Visual Soil Assessment Score Card - Plant Indicators

ST2

Visual indicators for assessing soil quality under hill country land uses

Visual Indicator of Soil Quality	Visual Score (VS) 0 = Poor condition 1 = Moderate condition 2 = Good condition	Weighting	VS Ranking
Pasture composistion		x 3	
Pasture growth and regrowth		x 3	
Pasture utilisation*		x 1	
Area of bare ground		x 3	
Drought stress		x 2	
Stock carrying capacity and fertiliser use*		x 2	
RANKING SCORE (Sum of VS rankings)			

*Perceived

Plant Quality Asssessment	Ranking Score
Poor	< 10
Moderate	10 – 25
Good	> 25

Overall Quality Asssessment		Do the soil and plant indicators give a different soil quality assessment? If so, why?
Soil indicators	Plant indicators	

Notes:

Earthworm Abundance Survey table

ST3

LMU	Number of dung worms	Number of topsoil worms	Number of deep burrowing worms	Notes	Date

Risk Assessment – Soil Health

ST4

Risk to soil health	Risks on your farm	Overall risk	Date

Likelihood	Consequence		
	Slight	Serious	Major
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

OUR PLAN

2 | Freshwater ecosystem health

Freshwater Assessment Table

FW1

Waterway	Date of assessment	Flow conditions	Assessment type	Notes (such as assessment score, overall health (e.g. good, intermediate, low), factors to consider)

Stream Health Check

FW2

Stream Name: _____

Date and Time: _____

Notes on recent climatic conditions:

Notes on recent land use around waterway:

This assessment form is designed for landowners to assess critical aspects of their waterway as an indication of its current level of ecological health. The overall final score ranges from 500 to 50. A score greater than 250 indicates a good stream while a score of less than 120 indicates there are aspects of your waterway that might be contributing to its low health.

Always ensure it is safe to go into the waterway. Where safe, this is a great activity to do with kids.

Choose representative sites of streams on your property where you know you will go back and repeat the assessment. The assessment should be done annually, but you can do it more frequently if you choose.

To use the form, read each question thoroughly and circle the score which corresponds to the category best describing your stream (or the specific area of the stream you are assessing). Assess each section of stream 100m up-and-downstream of where you are standing. If your stream isn't described exactly by one category you can give it a score halfway between those given.

Sub-total the scores for each section to give a grand total. Low scores (2-4) to each of the questions can be linked with one or more risks outlined in the risk factors and drivers **Table 2.1** in the Farm Plan resource. The combination of your score and understanding your risk assessment can help you identify management practices to help improve the ecosystem health of the waterway.

Try to assess the stream under low flow conditions so you can see the substrate, and things like periphyton slime have not been washed away. This is when most aquatic life is active. A number of our native fish for example tend to burrow into the sediment (if they can) and remain inactive over winter.

Developed by Dr. Russell Death, Massey University

Related waterway health risk
(see **Table 2.1 Risk factors and drivers**) in Freshwater ecosystem health

Stream banks					
What type of vegetation is along the banks and sides of the stream?	Trees with dense groundcover e.g. tussock, toetoe, ferns, flax, rushes.	Tall grasses with patchy trees and groundcover.	Patchy trees, groundcover grazed or absent.	Grazed pasture grasses to stream edge.	
	16 ☐	8 ☐	4 ☐	2 ☐	
How continuous is the vegetation (other than pasture) along the stream banks?	Tall vegetation (over 3m)/trees continuous, or a few small gaps.	Tall vegetation (over 3m)/trees a few large gaps or several small gaps.	Breaks in tall vegetation (over 3m)/trees frequent and very patchy.	Many large gaps in tall vegetation (over 3m)/ trees or no tall vegetation at all.	**A, D, E, F**
	16 ☐	8 ☐	4 ☐	2 ☐	
What is the average width of the vegetation (other than pasture) along the stream banks?	>30m	10-30m	1-10m	<1m	
	32 ☐	16 ☐	8 ☐	4 ☐	

Related waterway health risk
(see **Table 2.1 Risk factors and drivers**) in Freshwater ecosystem health

Stream banks					
What percentage of the stream is shaded by plants and stream banks?	50% or more	30%	10%	Little or no shading.	**B, F, I**
	16 ☐	8 ☐	4 ☐	2 ☐	
How stable are the stream banks?	Banks stable, rock and soil firmly held by grasses, shrubs and tree roots.	Banks firm but loosely held by grass and shrubs.	Banks of loose soil held by a patchy layer of grass and shrubs.	Banks unstable, of loose soil or sand easily disturbed.	
	16 ☐	8 ☐	4 ☐	2 ☐	
What is the level of erosion on surrounding landscape and on the stream banks?	No evidence of erosion in surrounding landscape, no scarring on stream banks and no undercutting.	Some erosion in surrounding landscape, occasional scarring on stream banks and undercutting.	Moderate erosion in surrounding landscape. Eroding banks slowly widening.	Significant erosion in surrounding landscape, significant areas of stream bank cut away, some loss of farmland.	**A, D, E**
	32 ☐	16 ☐	8 ☐	4 ☐	
In-stream life					
What is the level of algal (periphyton) growth? *NB: this needs to be assessed in summer with about 2 weeks of no flushing or flooding events*.	Stones rough to the touch. Scraping thumb nail over stones yields no slime.	Stones slippery to touch. Scraping thumb nail over stones yields no slime.	Stones very slippery to touch. Scraping thumb nail over stones yields a small amount of slime.	Thick layers of slimy algae. Scraping thumb nail over stones yields large volume of slime.	**A, D, E, F**
	32 ☐	16 ☐	8 ☐	2 ☐	
Are there any natural obstructions to slow the stream flow?	Rocks and old logs firmly set in place.	Rocks and logs backfilled with sediment.	Rocks and logs loose, move with floods.	No obstructions to slow the stream flow.	**H**
	16 ☐	8 ☐	4 ☐	2 ☐	
What are the macroinvertebrates present in the stream? *NB: to find stream insects look under rocks. Or if the stream has no rocks look on water weeds, grass, logs and other debris. Use a sieve and white icecream container if needed. Use the ID chart provided in your resource.*	Lots of mayflies, stoneflies and other types of crawling and swimming insects.	Moderate numbers of mayflies and caddisflies. Variety of other types of insect may also be found.	Very few crawling and swimming insects. Snails, worms and midges abundant.	Mostly snails, worms and midges.	**A, B, C, D, E, F, G, H**
	32 ☐	16 ☐	4 ☐	2 ☐	
How often does your stream overtop (overflow) its banks?	Never known to overtop banks.	Overbank flows rare.	Overbank flows occur during some winter storms.	Overbank flows frequent in winter/ spring storms. Or stream has carved a definite channel.	**A, D, E, H**
	16 ☐	8 ☐	4 ☐	2 ☐	

Related waterway health risk
(see **Table 2.1 Risk factors and drivers**) in Freshwater ecosystem health

Potential for contaminants					
Do stock have access to your stream?	Stock do not have access to any of the stream or its banks.	Stock only have access to a small part of the stream.	Stock have access to most of the stream.	Stock have access to the entire stream.	**A, B, C, D, E**
	32 ☐	16 ☐	8 ☐	4 ☐	
What is the potential for the input of sediment to your stream? *(e.g. from stream banks, stock damage/trampling, stock crossings, surface runoff, runoff from farm roads, slips/erosion, gravel extraction, etc).*	No potential.	Low potential.	Moderate potential.	High potential.	**A, B, D, E**
	32 ☐	16 ☐	8 ☐	4 ☐	
What is the potential for the input of contaminants to your stream? *(e.g. from spray drift, sprayer washings (sheep dips), effluent ponds, silage pits, dups, soil and foam, dead animals, etc).*	No potential.	Low potential.	Moderate potential.	High potential.	**G**
	32 ☐	16 ☐	8 ☐	4 ☐	
Potential for contaminants					
Is there any artificial drainage entering the stream? *(e.g. tile, mole, storm water, and/or open drains which are regularly cleared of vegetation)*	No artificial drainage.	Sparse artificial drainage.	Moderate amount of drainage.	Extensive drainage networks.	**B, C, D, E**
	32 ☐	16 ☐	8 ☐	4 ☐	
Are there any Critical Source Areas (CSA's) or overland flow pathways where runoff enters the stream? *(e.g. gullies, depressions, swales on adjoining land)*	No CSA's or overland flow pathways within 100m.	One CSA or overland flow pathway within 100m.	2-3 CSA's or overland flow pathways within 100m.	Greater than 3 CSA's or overland flow pathways within 100m.	**A, B, C, D, E**
	16 ☐	8 ☐	4 ☐	2 ☐	
How much nitrogen and phosphorus fertiliser is used by yourself and/or neighbours?	None	Less than 150kg/ha super or equivalent, no nitrogen fertiliser.	150-300kg/ha super or equivalent, less than 50kgN/ha.	More than 300kg super or equivalent, greater than 50kgN/ha.	**A, B, C, D**
	32 ☐	16 ☐	8 ☐	4 ☐	

Related waterway health risk
(see **Table 2.1 Risk factors and drivers**) in Freshwater ecosystem health

How deeply incised are the stream banks?	Top of stream banks 10m or higher above stream level.	Top of stream banks 5-10m or higher above stream level.	Top of stream banks 1-5m above stream level.	Top of stream banks less than 1m above stream level.	
	16	8	4	2	
What is on the streambed?	Rocks and stones of different sizes, tightly packed together.	Stones, silt present in gaps between rocks/ stones.	Gravel, sand and silt.	Sand and silt, stones absent.	
	16	8	4	2	
If you stand in the stream and dig your feet into the substrate, does the water...	Remain clear.	Clear quickly.	Remain murky for less than 1 minute.	Remain murky.	
	32	16	8	4	**A, D, E**
How cohesive are the soils of the stream bank?	Very cohesive. Mostly rock and cemented material (boulders and bedrock).	Moderately cohesive. Tightly packed gravel or sand in a clay matrix.	Loose soils with fine aggregates. Tightly packed sands or gravel with some silt or clay.	Very loose soils. Loosely packed sand, gravel or pumice material.	
	16	8	4	2	
How well do your soils drain after rain?	Deep, well-drained soils that slow down the flow of water to waterways and drains.	Moderately well-drained soils, with some waterlogging for periods in winter where runoff poses a risk to waterway.	Excessively well-drained soils where water moves freely and rapidly through the soil into underground aquifer likely connected to waterway.	Poorly drained soils where water-logging and surface-ponding occurs where runoff a risk to waterway.	
	16	8	4	2	
TOTAL *(add up each of your scores to generate a total)*					

As part of your Stream Health Check you will have identified areas to help improve your scores and where risks may be greater. The final column in the Stream Health Check links to the 'Risk factors and drivers' table in Step 14. Combining the results from your assessment, identifying specific risk areas, and working through the risk matrix you will complete in Step 14, will help you identify appropriate actions to enhance freshwater ecosystem health on your farm addressing the areas of greatest risk first.

What does my total score mean?

- **More than 250:** Great! Your stream is very healthy and hence has low priority for waterway management. It provides important fish and wildlife habitat and clean water for downstream users.
- **120 – 250:** Your stream has lots of potential and is at in an intermediate level of health. But there are clearly some aspects of your waterway that need attention. The final column in the form links with a list of ecosystem attributes and farm activities that may be impacting on these. By finding questions where you answered 2 or 4 you can find on-farm risks that may need attention in your farm management or planning.
- **Less than 120:** Your stream has been adversely affected by activities on your farm or upstream in the catchment. Again, by finding questions where you answered 2 or 4 you can identify on-farm risks that may need attention in your farm management or planning.

Freshwater Risk Template

FW3

Risk to freshwater health	Risk factors on your farm	Overall risk rating
A. Deposited fine sediment		
B. Excessive algae/ periphyton/slime		
C. Nitrogen		
D. Phosphorus		
E. Faecal bacteria and pathogens		
F. High temperature		
G. Harmful Chemicals		
H. Altered river form and channel margins		
I. Toxic Algae		
J. Other		

Freshwater Actions completed to date

FW4

Action	Location	Date or year

FW5

Freshwater Monitoring Plan

Waterway Site Name	Monitoring Frequency	Date due to monitor	Assessment type	Person Responsible	Notes and scores	Date completed

OUR PLAN

Farm Biodiversity Assessment - Whole Farm

BT1

Adjacent areas of native vegetation:

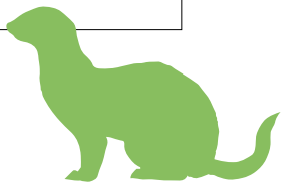
Note if any areas of native vegetation adjoin the property or are located in close proximity including both public conservation land and areas on other farms. Where possible include these on the farm map (below).

General trends in native birds:

Note if bellbird, tui, kereru, karearea, and ruru are generally seen / heard around the farm and whether their populations seem to be declining, stable, or increasing.

General trends and animal pests and weeds:

Note any particular animal pests or weeds that affect the farm or may potentially affect the farm in the near future and whether they are in decline, stable, or increasing.



Farm map: Mark and number discrete areas of native vegetation on an aerial photo of your farm and then fill in the following assessment sheets for each native vegetation patch.

Farm Biodiversity Assessment - Individual Sites

BT2

For each discrete area of native vegetation record the following

Native vegetation patch number/name:

Assessor: **Date:**

Weather: **Time taken:**

Area (approximate): <1 ha 1-2 ha 2-5 ha 5-10 ha >10 ha

Altitude range (m):

Physiography (including slopes and aspects):

Asset map:

Field drawing of vegetation patch showing route traversed, areas of interest (streams, fencelines, bluffs etc) and locations where photos were taken.

Vegetation summary – circle as many as appropriate
(for patches with > one unit, indicate for each)

Type: Forest Shrubland Wetland Grassland Rock outcrop

Other: _____

Origin: Remnant of original Secondary/regenerating

Canopy cover: Continuous (>70%) Diffuse (15-70%)

Additional vegetation type (% of vegetation patch area)

Type: Forest Shrubland Wetland Grassland Rock outcrop

Other: _____

Origin: Remnant of original Secondary/regenerating

Canopy cover: Continuous (>70%) Diffuse (15-70%)

Additional vegetation type (% of vegetation patch area)

Type: Forest Shrubland Wetland Grassland Rock outcrop

Other: _____

Origin: Remnant of original Secondary/regenerating

Canopy cover: Continuous (>70%) Diffuse (15-70%)

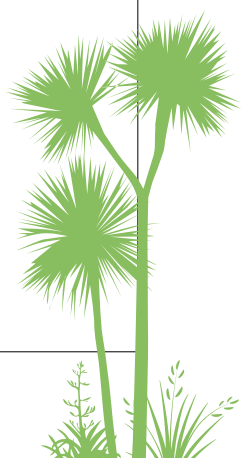
Dominant native plants:

Canopy (height & diameters):

Understorey and ground layer:

Known rare plant species:

Other native plant species:

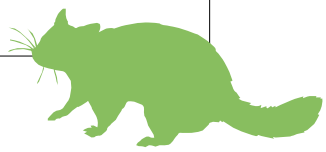


Canopy condition/damage (all vegetation types):

Include evidence of dieback and causes (possums, herbicide, rabbits/hares etc)

Understorey condition/damage (forest and shrubland):

Include evidence of browse by domestic livestock and feral animals. Consider how vigorous regeneration is and the extent that palatable species are represented.

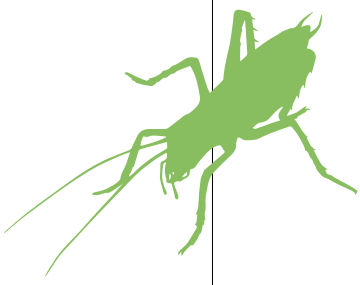


Native birds seen/heard:

Native reptiles seen or suspected to be present:

Native fish seen:

Native invertebrates seen:



Other native fauna (bats):

Soil disturbance & erosion (all vegetation types):

Presence/absence of litter, pugging, sheet or tunnel gully erosion, soil turnover by pigs, browse etc

Evidence of fire impacts (if any):

Include evidence of both historic or recent fires

Modification to hydrology (wetlands, streams, riparian habitats):

Has the hydrology been modified through damming, diversion or realignment of water courses? Indicate modifications on the sketch of the patch.

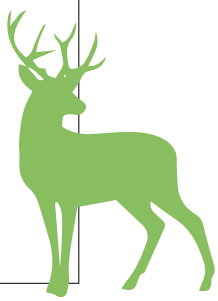
Presence of fences and condition:

Is the patch fenced and for those fences that are present, what is their condition? Indicate fencing on the sketch of the patch.

Exotic predators (seen/sign):

Sign or other evidence of mustelids, rodents, cats, hedgehogs etc.

Exotic herbivores & omnivores (seen/sign) and severity of damage:



Sign or other evidence of deer, goats, pigs, wallabies, possums etc.

Wasps (presence and abundance):

Presence and abundance of wasps, especially in late summer.

Weed presence/abundance and severity of infestation

Shrub/tree weeds:

Vine weeds:

Ground cover weeds:

Human impacts/management:

Trampling and damage to vegetation, garden waste, rubbish, evidence of timber harvesting etc. Any evidence of past/current conservation management – e.g. planting, plant and animal pest control etc

Summary score for each patch (circle the most appropriate category)

Patch attributes

Current condition	degraded	average	good
Relative size	v small	medium	large
Connectivity	v isolated	gaps not too big	well connected
Diversity	v few species	lower than expected	high
Rare/distinctive species	none	some importance	high importance

Management required

Fencing needed	lots	some	none
Weed control	lots	some	none
Deer/goats/pigs	lots	some	none
Predators	lots	some	none

Value to farm

Provides shelter	high	medium	low
Stock water access	high	medium	low
Cultural values	high	medium	low
Recreation	high	medium	low
Water regulation	high	medium	low
Timber, honey etc	high	medium	low
Sediment reduction	high	medium	low
Food gathering	high	medium	low

Is the asset considered ecologically significant in the district plan, or might it meet the plans' criteria for ecological significance? (in your view or the views of your farm team)

Recording sheets for birds

BT3

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

Recording sheet for native invertebrates, lizards and bats

BT4

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

Information	Species	Numbers observed
Date:		
Time:		
Location and description: (GPS reference if possible)		
Habitat:		
Approximate elevation:		
Photo		

BT5

Risk Assessment – Biodiversity

Risk to biodiversity	Risks on your farm	Overall risk

Likelihood	Consequence		
	Slight	Serious	Major
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

BT6

Photo-point Record Data Sheet

Use this sheet to record all of the data from each photo-point assessment location.

Site name: ____________ Location: ____________ Date: ____________

Recorder: ____________ Camera type: ____________

Photo Number(s)	GPS coordinates	Compass bearing	Time	Notes

Site name: ____________ Location: ____________ Date: ____________

Recorder: ____________ Camera type: ____________

Photo Number(s)	GPS coordinates	Compass bearing	Time	Notes

Site name: ____________ Location: ____________ Date: ____________

Recorder: ____________ Camera type: ____________

Photo Number(s)	GPS coordinates	Compass bearing	Time	Notes

Site name: ____________ Location: ____________ Date: ____________

Recorder: ____________ Camera type: ____________

Photo Number(s)	GPS coordinates	Compass bearing	Time	Notes

OUR PLAN

Greenhouse gas and climate change values and goals

CC1

Current Areas of Woody Vegetation

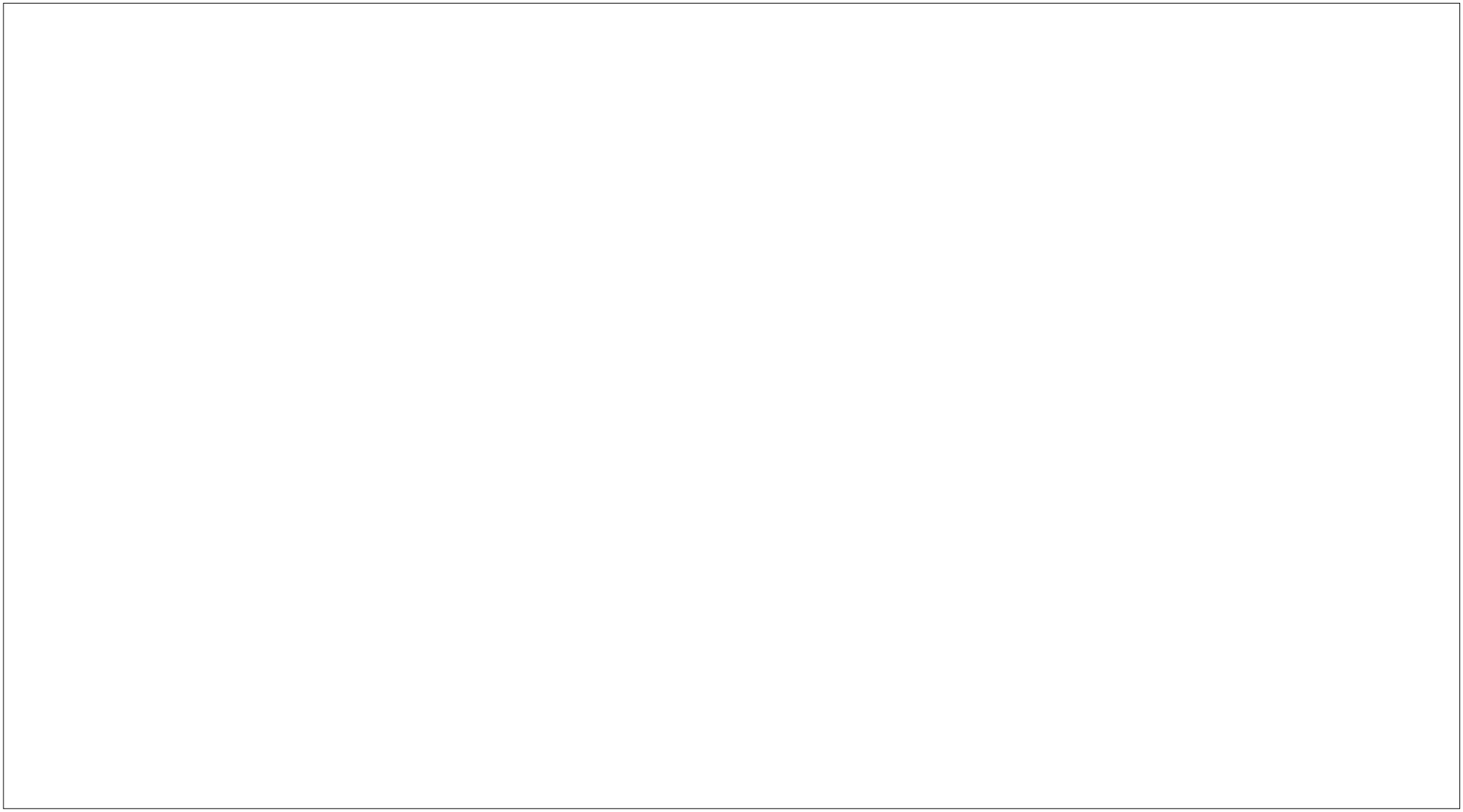
CC2

Vegetated area type and description (native, exotic, shrubland)	Approx age or year of planting	Area (ha) Pre-1990	Area (ha) Post-1989	Approx canopy cover (%)	Annual sequestration if known (kg CO2, provided from some calculators)	ETS eligible? Y/N	State (declining, static, improving)
TOTAL							

Areas of sequestration map

CC3

In this section please include a map of your farm to identify areas of sequestration. These may include planted forest blocks, native bush and scrub blocks and also other areas of woody vegetation such as waterway plantings and shelter belts. A useful way to do this is on a copy of your farm map or using an aerial photograph. Mapping can also be done online using various free tools and then printed out. These tools can also help to calculate the size of different areas.



Our Farm's Emissions and Sinks

CC4

Production/ Financial Year and Date Calculated	Emissions – Methane		Emissions – Nitrous oxide		Emissions – Carbon dioxide	Deforestation	Gross emissions	Sequestration or sinks	Net emissions	Tool used for calculations
	$kgCH_4$/ha/year	$kgCO_2e$/ha/year	kgN_2O/ha/year	$kgCO_2e$/ha/year	$kgCO_2e$/ha/year	$kgCO_2e$/ha/year	$kgCO_2e$/ha/year	$kgCO_2e$/ha/year	$kgCO_2e$/ha/year	

Note - some tools only provide values for methane and nitrous oxide in CO_2e. Fill in what you can, CO_2e gives enough information to complete the calculations of gross and net emissions.

Climate change and Greenhouse gas emissions risk template

CC5

Climate change and GHG emissions risks	Potential risks on farm	Overall risk rating
Climate change impacts		
Risk to business		
Methane		
Nitrous Oxide		
Carbon dioxide		
Carbon sequestration		
Other		

Action plan to manage emissions and respond to climate change impacts

CC6

	Areas to consider	Action to address risk	Location, Land Management Unit or paddock	Timeframe or date implemented	Person responsible/ Others involved	Budget	Priority (Low, Medium, High)	Evidence of completion and storage location e.g. photo	Date completed
Eco-efficiency									
Methane									
Nitrous Oxide									

For more information, see Tables 4.1 - 4.5 in the 'Responding to a Changing Climate' chapter.

Action plan to manage emissions and respond to climate change impacts *Continued*

CC6

	Areas to consider	Action to address risk	Location, Land Management Unit or paddock	Timeframe or date implemented	Person responsible/ Others involved	Budget	Priority (Low, Medium, High)	Evidence of completion and storage location e.g. photo	Date completed
Carbon dioxide									
Carbon sequestration									
Climate change impacts									
Other									

For more information, see Tables 4.1 - 4.5 in the 'Responding to a Changing Climate' chapter.

Actions to date: Climate Change and Greenhouse Gas emissions management

CC7

	Areas considered	Action	Location or Land management unit (if applicable)	Date or year
Eco-efficiency				
Methane				
Nitrous oxide				
Carbon dioxide				
Carbon sequestration				
Climate change impacts				

For more information, see Tables 4.1 - 4.5 in the 'Responding to a Changing Climate' chapter.

Monitoring Plan - to manage emissions and respond to climate change impacts

CC8

Monitoring or review action	Evidence	Monitoring frequency	Due Date to monitor	Assessment	Person responsible	Notes	Date completed

OUR PLAN

Local compliance requirements

WC1

Compliance document	Requirements	Notes	Date

OUR PLAN

Why am I forage cropping?

FC1

- [ ] Pasture renewal
- [ ] Providingadditional feed to fill summer or winter feed gaps
- [ ] Limiting the impact stock may have on pastures
- [ ] Other: (please describe below)

Forage Crop Programme

FC2

Year:					
Crop type sown					
Season or month the forage crop fed					
What month do you usually sow?					
Cultivation and sowing method					
Location/Land management units used					
Identification of any unfenced waterways in winter crop paddocks					
Area sown in crop (ha)					
Typical yield (t DM/ha)					
Fertiliser used					
What class(es) of stock graze this crop?					

Winter forage crop grazing – Farm details

FC3

Farm details	Farm Name	
	Farm Address	
	Total farm area (ha)	
Farm owner details	Name	
	Phone number	
	Email address	
	Mailing address	
Manager details (if applicable)	Name	
	Phone number	
	Email address	
	Mailing address	
Stock owner details (if applicable)	Name	
	Phone number	
	Email address	
	Mailing address	
Staff details	Name	
	Phone number	
Other		

Winter forage crop grazing – Animal details

FC4

	Stock type and class or crop type		Number of stock, area or supplement				
			Total Across farm	Location (on-farm), Land Management Unit (LMU) or paddock (if applicable)			
				Name	Name	Name	Name
Stock numbers wintered on forage crop (break up by age or class as required, e.g., R1/R2 cattle, mixed-age cattle, mixed-age ewes, lambs, hoggets, weaners, stags, hinds)	Beef Cattle						
	Dairy Cattle						
	Sheep						
	Deer						
Area of Winter forage crop to be grazed over coming winter (ha)	Bulb brassica (swede/turnip) (ha)						
	Kale (ha)						
	Fodder beet (ha)						
	Other (please specify) (ha)						
Other supplements to be fed to winter grazed stock (e.g. silage, baleage, hay, straw)							
Other							

Risk Assessment for forage cropping

FC5

Risk	Risk factors on your farm	Risk rating (High, Medium, Low)				
			Land Management Unit (LMU) or paddock (if applicable)			
		Whole farm	Name	Name	Name	Name
Sediment and Phosphorus loss risks Sediment or phosphorus potentially entering waterways may cause excess algae growth, habitat loss other harm to freshwater health.	**Slope risk**					
	Erosion potential risk					
	Overland transport of sediment and nutrients risk					
	Other risk					
Faecal microbe loss risks Contaminants, like pathogens such as *E. Coli*, potentially impacting on human health	**Contamination of freshwater risk**					
	Other risk					
Nitrogen loss risks Nitrogen potentially entering waterways impacting freshwater health or drinking water quality	**Nitrogen leaching risk**					
	Nitrogen sources risk					
	Other risk					
Soils damage risks Soil health and structure is damaged impacting on nutrient and sediment flow pathways as well as productive capabilities.	**Stock class type risk**					
	Soil Type risk					
	Crop type risk					
	Other risk					
Social or cultural values at risk Your values or catchment values at risk from your winter grazing activities.	**Social risk**					
	Cultural risk					
	Other risk					
Animal Welfare risks Animal health and wellbeing considerations	**Temperature and shelter risk**					
	Feed and water risk					
	Ground surface risk					
	Other risk					
Human risks Risks created or increased by people (rather than risks to people) that may impact on winter forage cropping activities	**Training and skills risk**					
Other risks						

Winter grazing paddock plan template

FC6

On your paddock map draw on or indicate:

Physical features of this paddock	
Feature	**Key (symbol)**
Fences and gates	
Slope direction	
Waterways and drains	
Critical source areas	
Waterlines and troughs	
Shelter	

Action plan for this paddock	
Feature	**Key (symbol)**
Cultivation direction	
Grazing direction (which way the breaks will move)	
Areas not grazed	
Buffer areas around waterways and critical source areas	
Other (such as backfences or reserve areas)	
Other	

Notes

Paddock name or number:		Date:	

Adverse weather event planning

FC7

	Location or area that stock will go to	Feed type and allocation	Number of days of feed budgeted for adverse events	Preparation before winter	Conditions when stock will return to regular winter grazing
If there is an adverse (large) rainfall event					
If there is an adverse (very cold) storm event					

Forage Cropping Monitoring and Review

FC8

	Yes/ No	Notes
Was the paddock sown to plan?		
Was the paddock grazed to plan?		
Were you able to avoid significant pugging in the paddock(s)?		
Do you have some photos of the forage cropping paddocks before, during and after grazing?		
Do you have locations recorded for each photo e.g. geolocated with GPS on mobile phone camera?		
Have you saved photos in a place you can easily access?		
Have you taken some notes over the forage cropping season?		
Did you need to action your adverse weather event plan for extreme weather?		
Did you have sufficient feed and area allocated for your adverse weather plan?		
Did you sow any catch crops?		

Based on your check, at the end of the season or cropping period it's important to reflect and review on:

1) What worked well

2) Areas that need improvement

3) Things that you learnt over the cropping period or action that you will implement next season?

Forage cropping checklist

FC9

Plan in place to identify:

- [ ] Feed requirements by stock class
- [ ] Paddock/s selected based on appropriate soil type, low slope, low risk in relation to waterways, low flood risk
- [ ] Animals have shelter, fresh clean water, dry place to rest
- [ ] Use of catch-crops
- [ ] Management of Critical Source Areas
- [ ] Transition of animals onto crop
- [ ] Access by staff, animals and machinery to minimise impacts
- [ ] Winter forage crop grazed in accordance with national and regional rules and regulations
- [ ] Response if conditions change through the grazed period

---

Crop sown using good practice:

- [ ] Direct drill or minimum tillage
- [ ] Sown across the slope
- [ ] Sown when soil moisture level was appropriate
- [ ] Critical Source Areas were left uncropped

- [ ] Stock excluded from Critical Source Areas and waterways
- [ ] Supplementary feed placed prior to grazing or supplementary feed fed in a dry, central part of the paddock
- [ ] Portable troughs used or trough located in a dry, central part of the paddock

Animal health and welfare managed:

- [ ] Fresh clean water
- [ ] Shelter
- [ ] Dry place to rest
- [ ] Stand-off area identified in case of very wet conditions or snow

---

- [ ] Staff are adequately trained in identifying any animal health issues, and to minimise impacts to soils
- [ ] Staff have appropriate clothing and equipment to manage grazed area
- [ ] Crop grazed from top down or at opposite end of paddock from waterway
- [ ] Long and narrow breaks used

Soils looked after

- [ ] Minimised use of heavy machinery
- [ ] Back-fenced
- [ ] Stand-off areas used when very wet or in snow

- [ ] Critical Source Areas lightly grazed when soil not too wet near the end of crop
- [ ] Catch-crop sown or paddock sown into next crop or pasture as soon as soil conditions allow

Catchment values and objectives – in relation to forage cropping:

FC10

As part of planning forage cropping, consider the wider catchment and catchment values and what impact winter grazing activities could have. Your local catchment group or Regional Council may already have some documentation on catchment values. These values can be things such as ensuring the ability to swim in waterways, maintaining or improving ecosystem health, and providing for māhinga kai.

In the box below, identify your local catchment(s) and what values or objectives your catchment group, community, and/or Regional Council has identified for the area. (Note, there is more detail in the Introduction and Overview section of the Farm Plan – Environment Module on catchment values and how to address them).

My Local Catchment:
Your Catchment values or objectives *E.g. Clean, healthy waterways for safe swimming*

OUR PLAN

Action Plan

☐ Soils ☐ Freshwater ☐ Biodiversity ☐ Climate Change

☐ Waste and chemical management ☐ Forage cropping ☐ Irrigation

IT1

Date: _____

Identified Risks	Action to address risk	Location, Land Management Unit or paddock	Timeframe or date implemented	Person responsible/ Others involved	Budget	Priority (Low, Medium, High)	Evidence of completion and storage location e.g. photo	Date completed

Action Plan

☐ Soils ☐ Freshwater ☐ Biodiversity ☐ Climate Change

☐ Waste and chemical management ☐ Forage cropping ☐ Irrigation

IT1

Date: _____

Identified Risks	Action to address risk	Location, Land Management Unit or paddock	Timeframe or date implemented	Person responsible/ Others involved	Budget	Priority (Low, Medium, High)	Evidence of completion and storage location e.g. photo	Date completed

Action Plan – Specific Projects

IT2

In response to your goals and objectives, your resource assessments and risk assessments, outline the project actions you have identified. These are new projects which may address one or more areas of your plan and may be carried out over a period of time rather than as an ongoing management practice.

Project: _____ **Date:** _____

Areas addressed:

- ☐ Soils
- ☐ Freshwater
- ☐ Biodiversity
- ☐ Climate Change
- ☐ Waste and chemical management
- ☐ Forage cropping
- ☐ Irrigation

Desired outcomes	How will outcomes be monitored:

Tasks	Timeframe	LMU action applies to	Person Responsible	People involved	Budget	Priority (H, M, L)	Date completed/ implemented	Evidence of completion (e.g. photo)

Action Plan – Specific Projects

IT2

In response to your goals and objectives, your resource assessments and risk assessments, outline the project actions you have identified. These are new projects which may address one or more areas of your plan and may be carried out over a period of time rather than as an ongoing management practice.

Project: _____ **Date:** _____

Areas addressed:

- ☐ Soils
- ☐ Freshwater
- ☐ Biodiversity
- ☐ Climate Change
- ☐ Waste and chemical management
- ☐ Forage cropping
- ☐ Irrigation

Desired outcomes	How will outcomes be monitored:

Tasks	Timeframe	LMU action applies to	Person Responsible	People involved	Budget	Priority (H, M, L)	Date completed/ implemented	Evidence of completion (e.g. photo)

Monitoring Plan

IT3

Update your monitoring plan annually following this template.

Date: _____

Monitoring tool/approach	Date of monitoring	Person responsible	Notes	Date completed
Visual Soil Assessments				
Earthworm Abundance Survey - Optional				
Cotton Strip Test - Optional				
Chemical Soil Testing				
Update of OverseerFM Nutrient Analysis				
Stream Health Checks				
Wetland Assessments				
Photo-point monitoring				
Individual native birds				
Individual native fish, invertebrates, lizards, and bats				
Annual emissions and sinks calculated				
Adverse events plans updated				
Forage cropping management area mapped and plan updated				

Annual Review

IT4

Your Farm Plan should be reviewed at least annually. If you are reviewing your budget throughout the year, you may choose to do additional reviews of the plan. If you are working on implementing a project it can be useful to review progress of tasks throughout the year. It is always satisfying to record progress.

Part of your review will be linked to your annual monitoring referenced in the previous section. Hopefully as part of this you have established a range of locations for photo-points. Additionally, take photos of your progress towards the plan – before and after photos are great to reflect your progress. Below is a template to help with your review process.

Resource Review

Date: _____

Questions to consider	Response
Are there any issues or risks associated with where infrastructure is located?	
Are there any new features or risk areas such as Critical Source Areas to locate on the map?	
Are there any new sites of significance to locate on the map?	
Are Land Management Units still appropriate?	
Review and Update Action Plan - Soils	
Review and Update Action Plan - Freshwater	
Review and Update Action Plan - Biodiversity	
Review and Update Action Plan - Climate Change	
Review and Update Action Plan - Waste & Chemical Management	
Review and Update Action Plan - Forage Cropping	
Review and Update Annual Monitoring Plan	