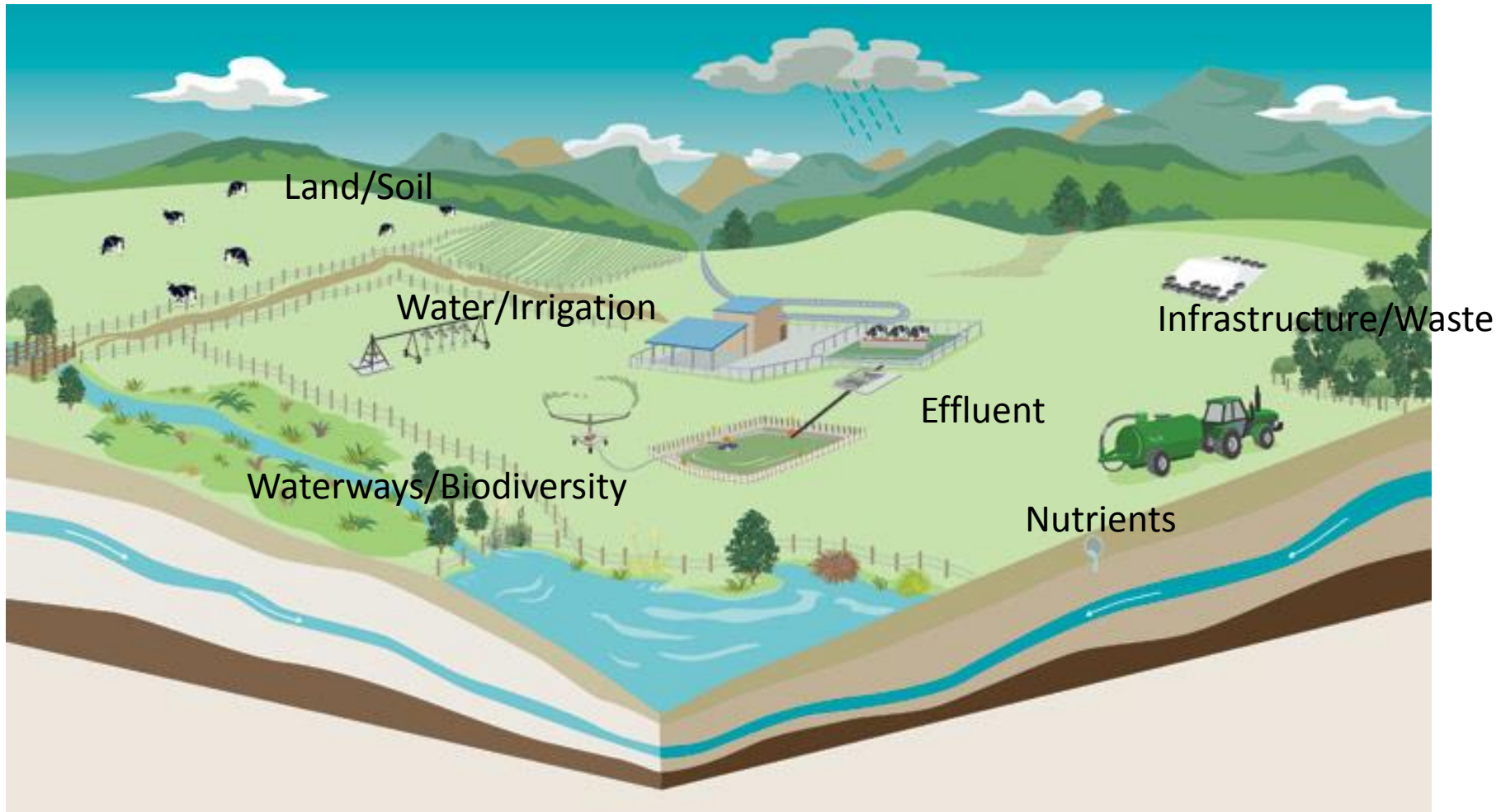


Farm management areas



Each management area has related good management practices (GMP). Each GMP has a list of practices to consider. It needs to be backed by evidence

GMPs

FARM PLANNING AND RECORDING

- GMP 1

Identify the physical and biophysical characteristics of the farm system, assess the risk factors to water quality associated with the farm system, and manage appropriately.

- GMP 2

Maintain accurate and auditable records of annual farm inputs, outputs and management practices.

CULTIVATION AND SOIL STRUCTURE

- GMP 3

Manage farming operations to minimize direct and indirect losses of sediment and nutrients to water, and maintain or enhance soil structure, where agronomically appropriate.

GROUND COVER

- GMP 4

Manage periods of exposed soil between crops/pasture to reduce risk of erosion, overland flow and leaching.

- GMP 5

Retire all land use capability (LUC) class 8 and either retire, or actively manage, all class 7e to ensure intensive soil conservation measures and practices are in place.

SEDIMENT, PHOSPHORUS AND FAECAL BACTERIA

- GMP 6

Identify risk of overland flow of sediment and faecal bacteria on the property and implement measures to minimize transport of these to water bodies.

- GMP 7

Locate and manage farm tracks, gateways, water troughs, self-feeding areas, stock camps, wallows and other sources of runoff to minimize risks to water quality.

- GMP 8

To the extent that is compatible with land form, stock class and intensity, exclude stock from waterways.

- GMP 9

Monitor soil phosphorus levels and maintain them at or below

NUTRIENT MANAGEMENT

- GMP 10

Manage the amount and timing of fertilizer inputs, taking account of all sources of nutrients, to match plant requirements and minimize risk of losses.

- GMP 11

Store and load fertilizer to minimize risk of spillage, leaching and loss into water bodies.

- GMP 12

Ensure equipment for spreading fertilizers is well maintained and calibrated.

IRRIGATION AND WATER USE

- GMP 13

Manage the amount and timing of irrigation inputs to meet plant demands and minimize risk of leaching and runoff.

- GMP 14

Design, calibrate and operate irrigation systems to minimize the amount of water needed to meet production objectives.

FEED

- GMP 15

Store, transport and distribute feed to minimize wastage, leachate and soil damage.

FARM EFFLUENT AND WASTE WATER MANAGEMENT

- GMP 16

Ensure the effluent system meets industry-specific Code of Practice or equivalent standard.

- GMP 17

Have sufficient, suitable storage available to enable farm effluent and waste water to be stored when soil conditions are unsuitable for application.

- GMP 18

Ensure equipment for spreading effluent and other organic manures is well-maintained and calibrated.

- GMP 19

Apply effluent to pasture and crops at depths, rates and times to match plant

INTENSIVE GRAZING

- GMP 20

Select appropriate paddocks for intensive grazing, recognising and mitigating possible nutrient and sediment loss from critical source areas.

- GMP 21

Manage grazing to minimise losses from critical source areas.

LEVEL 1

beef+lamb
new Zealand

LAND AND ENVIRONMENT PLAN GUIDELINES
FARM MAPPING AND RISK ASSESSMENT METHOD
Version 4

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BY FARMERS. FOR FARMERS

FARM ENVIRONMENT PLAN



FOUNDATION FOR ARABLE RESEARCH



**Farm Environment Plan
Template for Arable Enterprises**

Examples of completed
Land and Environment Plans

MEAT & WOOL
NEW ZEALAND

Version 1.00



Farm Environment Plan

Property name				Notes
Physical address				Version 1:
Property owner				Version 2:
Postal address	Phone no.			
Postal address	Postcode	Mobile no.		
Postal address				
Contact person for general enquiries				
Postal address	Phone no.			
Postal address	Postcode	Mobile no.		
Postal address				
Is whole property leased?	Yes/No if yes, provide details:			
Name of lessee				
Postal address	Phone no.			
Postal address	Postcode	Mobile no.		
Postal address				
Farm Manager name (if different to owner)	Position (manager, shareholder etc)			
Postal address	Phone no.			
Postal address	Postcode	Mobile no.		
Postal address				
Person responsible for implementing Farm Plan				

This Farm Environment Plan sets out the management practices that will be used to actively manage environmental issues on the property, with a focus on managing water quality and quantity within limits, as specified by Canterbury Regional Council. The Plan will be audited regularly by independent assessors in accordance with the required audit, compliance and enforcement procedures as set out in the OWS Environmental Management Strategy.

FARM PLAN NO: xxx
Version no: xx

Plans

FARM ENVIRONMENT PLAN

SN: 74650
Sinclair Family Trust
Newmans Road
Te Awamutu

new ZEALAND FARM SOURCE

Confidential to Forterra Farm Source

DairyNZ Sustainable Milk Plan

Contact Person(s):	Paul and Mandy Burrows	Farm Name:	Kilvarock Farming Company Ltd	Plan Writer:	Aron Hutton
Physical Address:	2630 North Rakaiia Road,	Ownership type:	Owner Operator	Date:	17-Mar-15
Email Address:	pmbur@kilvarock.net.nz	Supply Number:	37415	Region:	Canterbury

Farm Identifiers, Location, & Key Statistics:

Title Legal Description:	LOT 12 DP 81616 LOT 1 DP 73371 LOT 2 DP 78940 LOT 2 DP 347796 RS 40748 SEC 1 & 3 BLK XII SELWYN SD	(ha):	204.95	District/Zone:	Selwyn/Wahora Zone
Additional Title:		(ha):	0.00	Catchment:	Selwyn Wahora
Additional Title:		(ha):	0.00	Climate Size:	0
Total Effective Area (ha):	185	Total Farm Area (ha):	204.95	Peak Herd Size:	580
				Stock Rate:	4.14

Major environmental risks identified for this farm:

These environmental risks shall be managed through practices and actions identified in this plan.

Free Draining Soils with moderate to low water holding capacity
River erosion risk on land bordering Rakaiia River

Resource Consents Held:	Nutrient Management Indicators:
Farming land use:	Date of last NB:
Effluent:	NB created by:
Ground Water Take:	Overseer Version:
Surface Water Take:	N Baseline (2009-13) (kg N/ha):
Human Sewage:	Overseer Version:
Other:	Nitrogen Leached: Actual Max
	2013/14 (kg N/ha): 37 72
	2014/15 (kg N/ha): 35 65
Application Area (ha):	Phosphorus Actual Max
Pg effluent/N/ha/yr applied:	2013/14 (kg P/ha): 0.9 1.1
Storage Volume (m ³):	2014/15 (kg P/ha): 0.9 1.1
Storage Lining Material:	

Your Farm Nitrogen Loss

Your Farm Phosphorus Loss

beef+lamb
new Zealand

CANTERBURY

FARM ENVIRONMENT PLAN WORKBOOK

By farmers. For farmers



Sinclair Family Trust

To Awamutu



- ADWSE
- Not Applicable
- NADWSE
- Bridged/Culvert
- Rank Grass
- Unknown
- Weed Dominated




SUPPLY 74650

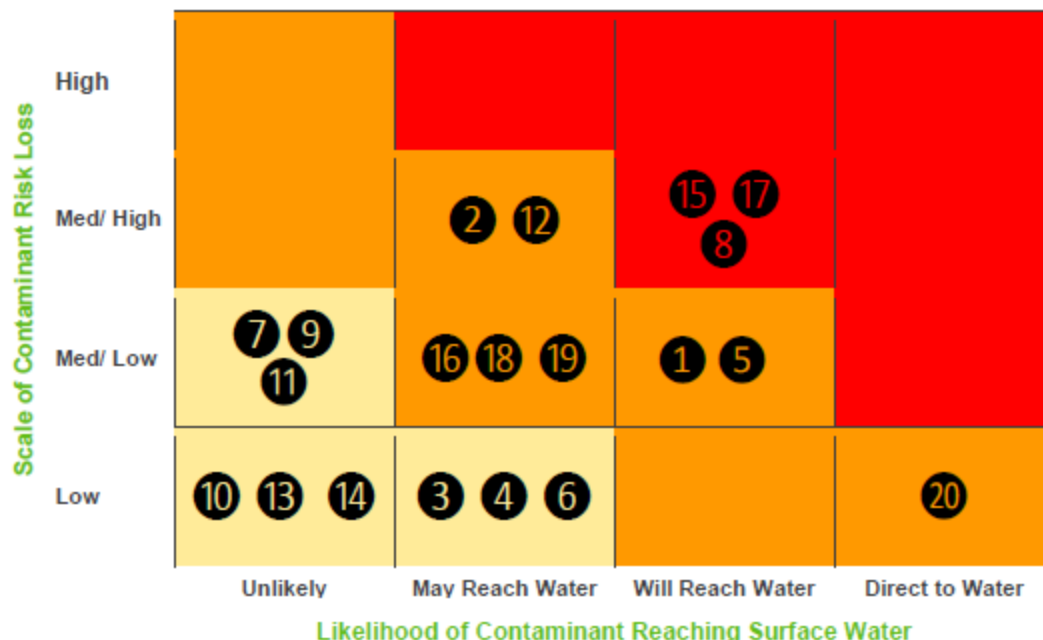
Riparian Management Map



Map Key

1	Intermittent Waterway	10	Farm Dump Site	19	Race Crossing Point 3
2	Effluent System	11	Race Wall Slumping	20	Unfenced Area
3	Baleage Storage	12	Quarry	21	Steep Area
4	Tyre Dump Site	13	Good Race Cutouts	22	Walkway to Pdk 10
5	Race Crossing Point 1	14	Spring Water Take Site	23	Puniu River
6	Race Cutouts	15	Race Crossing Point 2		Farm Dairy
7	Steep Sidling	16	Intermittent Wet Spot	—	Permanent Water
8	Steep Drystock Area	17	Pugging	- - -	Intermittent Water Fenced
9	Race Walls	18	Farm Ponds	- - -	Intermittent Water Unfenced

Location & Risk Identification



Explanation

This graph displays the scale of the potential loss of contaminant against the likelihood of the contaminant reaching surface water for each risk area identified. These risk areas and potential impacts on water quality were identified during the farm assessment.

1 INTERMITTENT WATERWAY

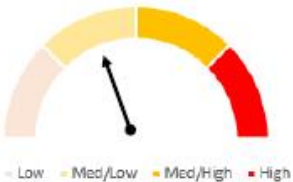


Description:
Spring fed waterway, does not run all year, steep topography on one side / flat on the other.

Risk Type:
Sediment and Phosphorus

Actions:
Use temporary fencing on the steep side to give a 3m buffer when the waterway is running
Move the uphill fence to allow a 1m buffer to the waterway to provide better filtering of sediment

Contaminant Loss Risk



Risk of Reaching Surface Water



2 EFFLUENT SYSTEM

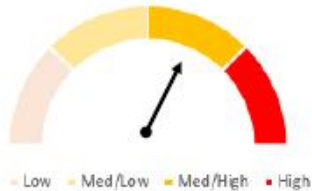


Description:
A well designed farm dairy effluent system with a new 500m3 Tasman Tank for storage.

Risk Type:
Nitrogen, Pathogens and Phosphorus.

Actions:
Pump down volumes in the Summer / Autumn in order to have capacity for high risk months
Install a Flashing Light warning system to indicate pumping
Install a level indicator on the storage tank
Install a high level warning alarm on the sump
Establish an effluent system maintenance plan.

Contaminant Loss Risk



Risk of Reaching Surface Water



5 RACE CROSSING POINT 1



Description:

A narrow stock crossing point on steep race which is close to the farm dairy. The crossing point is a natural collection and pooling point for sediment runoff from the uphill race and surrounding area.

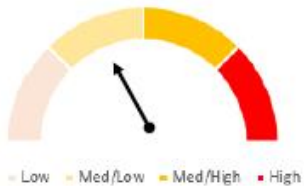
Risk Type:

Nitrogen, Phosphorus, Pathogens

Actions:

- Race improvements done in conjunction with improved cutouts from Zone 8 by October 2017
- Raise the crossing point with rhyolite to divert runoff away from the waterway by October 2019
- Increase the buffer strip to the stream by October 2021
- Install a new culvert increasing the width of the crossing point by October 2026

Contaminant Loss Risk



Risk of Reaching Surface Water



6 RACE CUTOUTS



Description:

Steep race with sediment runoff.

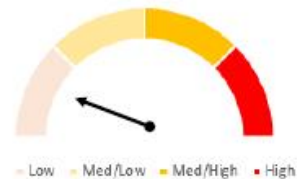
Risk Type:

Sediment, Phosphorus

Actions:

- Construct an effective cutout on the downhill side of the race uphill of the stock crossing point to divert any runoff and sediment to land prior to waterway crossing (Zone 5).
- Install a drum and culvert pipe on the steep side of the race uphill of the stock crossing point to divert any runoff and sediment to land prior to waterway crossing (Zone 5).

Contaminant Loss Risk



Risk of Reaching Surface Water



Risk Area	On Farm Action	Completion Date	Completed <input type="checkbox"/> / <input type="checkbox"/>
Phosphorus Fertiliser Use	Continue annual soil testing Phosphorus fertiliser use considered against soil and plant needs with soil test results.	Ongoing Management	<input type="checkbox"/>
Nitrogen Fertiliser Use	Ensure that Nitrogen fertiliser application timings are matched to times of high plant growth, with a minimum of 1000 kg DM/ha cover, the soil temperature exceeds 6°C and the soil is not saturated. Ensure that Nitrogen Fertiliser is used strategically to align feed on hand with animal feed requirement	Ongoing Management	<input type="checkbox"/> <input type="checkbox"/>
Cultivation	Select paddocks suitable for cultivation; whilst avoiding areas with slopes over 15° Ensure that there is a minimum cultivation setback of 5 metres from any waterway; irrespective of the location of the fencing.	Ongoing Management	<input type="checkbox"/> <input type="checkbox"/>
15 Race Crossing Point 2 (High Risk)	Don't let cows stand there as a management tactic Construct race outcuts approx. 15m uphill of the crossing diverting runoff to minimise build up of water at crossing point Build up the level of the crossing so the low point of the race is not above the crossing.	Ongoing October 2017 October 2020	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
17 Pugging Damage on Paddock 5	When the soil is saturated stock will be excluded from the low point in paddock 5 between the race and the waterway using with a temporary fence	Ongoing	<input type="checkbox"/>
12 Quarry	Maintain current bunding to contain stormwater and Sediment If stormwater buildup is required to be released, the water is to diverted away from surface water	Ongoing As required	<input type="checkbox"/> <input type="checkbox"/>
4 Effluent System	Lower effluent volume in the storage tank during Summer & Autumn Install a flashing light to indicate that the effluent pump is active Install a level indicator on the effluent tank Install a high level alarm on the effluent sump	Annually October 2018 October 2018 October 2018	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1 Intermittent Waterway	Use temporary fencing on the steep side to give a 3m buffer when the waterway is running Move the uphill fence to allow a 1m buffer to the waterway to provide better filtering of sediment	As Required October 2026	<input type="checkbox"/> <input type="checkbox"/>
5 Race Crossing Point 1	Build up the crossing point with rhyolite to divert runoff away from the waterway Increase the buffer strip to the stream Install a new culvert increasing the width of the crossing point	October 2019 October 2021 October 2026	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
21 Steep Area on Pdk 6/7	Use temporary fencing to remove from the grazing rotation during high risk months	Ongoing Management	<input type="checkbox"/>
23 Puniu River	Relocate the fencing from the Puniu river back a minimum of 1m in paddock 8	October 2020	<input type="checkbox"/>

Implementation:

Ecan:

Created industry with trained and certified consultants

Southland:

Farms must have an FEP in accordance with the conditions of the Regional Plan.
They can be part of an independently audited self management scheme.

Waikato:

Farms must have an FEP in accordance with conditions specific to their fresh water management units/catchments
They can be part on an industry audited self management scheme
Or otherwise must use a consultant and apply for a resource consent