FARM ENVIRONMENT PLAN

FOUNDATION FOR ARABLE RESEARCH

FAR®

Freshwater Module
(Southland)

The Planning Process

Before you begin to fill in the template, save it to your computer hard drive. Remember to keep saving as you work your way through it - at the end of each page or management section would be a good idea. Once it is completed you will need to file your plan and supporting documents in one place. An easy practical solution is to keep all the information in a single, indexed ring-binder.

This template will enable you to create a Freshwater module for your farm environment plan. Refer to the Template Guide for more information.

The template has nine sections

- Property details and farm maps.
- Cultivation and soil structure.
- Nutrients.
- Irrigation and water use.
- Animal effluent and solid waste.
- Waterbodies – Wetlands, riparian areas, rivers, lakes and drains
- Point sources for nutrient and contaminant losses,
- Winter Dairy Grazing
- Documentation

Other sections relating to environmental management may be added at a later stage.

The **documentation section** is for copies of:

- A list of all the resource consents you hold for your farm operation
- Soil tests, nutrient budgets, invoices and all other paperwork relating to your management plans.
- Nutrient budgets; Overseer® or otherwise

Fill in all the sections that are relevant to your farm business.

The planning process is;

1. a) Identify environmental risks: Risks may be associated with topography, soils and/or farm management practices.
   b) Identify wetlands and areas of indigenous bush or plantings you wish to protect.
2. Record your current management practices.
3. Respond to these risks: Develop a response plan with specific actions and targets which may include prioritizing the work, developing a time frame and costing for the work. Some of the responses to the identified risks may be simple and have no cost, others may involve capital investment and may take time.
4. Document your progress: Keep the information relating to your response and progress. Records might include invoices for work completed, soil test results.
5. Review this Farm Environment Plan module at least once every 12 months.

The template guides you through the process. Use the guiding notes to help with your risk assessments.

You will need farm maps to complete your plan.

This Freshwater Module template, specific to the Southland region, was updated in August 2021, based on current available knowledge. It will be updated as new information comes to hand.

Filling in the Template

Completing the template

Fill in the template for each of the management areas.

1. You will need to identify the environmental risks associated with that management practice on your farm.
2. The template lists the management practices you could use to reduce the risk of an environmental loss. Tick the practices you do use. Place an asterisk by the ones you would or might consider changing t.o

Note: In some instances, the listed management recommendations may differ from your local regional rules (e.g. the width of a riparian strip). It is important that you are familiar with your consent conditions and local rules.

As a general rule

- The first reference point is your consent conditions.
- The second reference point is your local regional council rules.
- Otherwise, follow good management practice recommendations. Indicate your current management practices by commenting in the space provided in this template.

If your management practice is not listed, write it in, using the additional blank lines.

3. Consider what you might do differently and fill in the “Management changes to reduce environmental risks” section of the template.

If there is a management section which has no relevance to your farm, leave it blank.

Fill in the HIGHLIGHTED parts of the template

Property Details and Farm Maps

The property details must cover all the properties covered by the farm plan, including leased land.

Property name:

Address:

Owner:
Contact Details:

Manager:
Contact Details:

Property size:

Legal Description of the land.
http://www.linz.govt.nz/survey-titles/find-out/info-property-owners

Farm identifier
(GPS co-ordinates)

Responsibility for implementing the Farm Environment Plan

The farm environment plan has been prepared by;

Note if you have prepared your own plan please indicate whether you have attended a FEP workshop.

I have attended a FAR FEP workshop. ☐

As the person responsible for implementing this plan, I confirm that the information provided is correct:

Name (Plan implementer):

Signature:

Position (e.g. owner/manager):

Date:

Farm consents

Consent Number	Consent Type	Expiry Date

Descriptive Farm Maps for your FEP Freshwater Module

The FEP freshwater module contains map and/or aerial photographs of your farm. These are an important part of your plan as they can provide visual details of where there are areas of environmental risk on your farm.

Use an existing farm map or an aerial photograph of you farm from Google Earth or ProductionWise®.

You will need at least two maps, but more might be helpful. Use your discretion about how many maps you prepare, it will depend on how complex your farm is.

Use a key to identify different features on your maps so you can remember "what's what" when you review the maps in later years.

Add the map scale and orientation to North

Biophysical Maps **Review annually**

On this map clearly show the following;

- The property boundaries;
- Farm buildings, tracks and point sources like offal pits, rubbish dumps and silage stacks.
- The physiographic zones (and variants where applicable) and soil types. You can find this information on Environment Southland's Topoclimate South soil maps. Your personal experience with your soils and information on historical soil maps will provide additional information when you are considering the environmental risks associated with your soils.
- All waterways including; lakes, rivers, streams, ponds, artificial watercourses, modified watercourses and natural wetlands;
- All existing and proposed riparian vegetation and fences (or other stock exclusion methods) adjacent to waterbodies;
- All places where stock access or cross water bodies (including bridges, culverts and fords);
- All known subsurface drainage system(s) and the locations of the drain outlets.

Soils and waterways with riparian management and stock crossings can be on separate maps.

Cultivation and Intensive Winter Grazing Maps

Update annually

On this map clearly show the following;

- All land that is cultivated and land to be cultivated over the next 12-month period;
- All land that may be intensively winter grazed and the land to be planted for winter grazing for the next period - 1 May to 30 September;
- All critical source areas and point sources;
- All intended setbacks from any lake, river (excluding ephemeral rivers), artificial watercourses, modified watercourse or natural wetland;
- All land with a slope greater than 20 degrees;
- For each paddock to be intensively winter grazed, include a map highlighting key management practices such as: grazing direction, semi-permanent fences, buffer zones, bale placement, portable troughs), as well as making a note as to how you will manage adverse weather events.

It might be helpful to make separate cultivation and winter grazing maps. These can be filed in the appropriate management sections.

Brief description of the farm enterprise (crops and stock)

For example: Blue Skies farm is a mixed arable business with grain, seed production, and winter dairy grazing. The cows are grazed on forage crops during the winter. There is one predominant soil type and a natural wetland on the farm.

Land Management Unit (LMU) Description

A land management unit may be as small as a single paddock or an aggregation of a number of paddocks with the same soils and management practices. They may be the same as the blocks developed in your Overseer nutrient budget.

Block name	Area	Soil type	Irrigation	Irrigator type	Crop/Stock management
Example: Mixed cropping block	*50*	*Description from your Topoclimate soil map*	*Yes*	*Pivot*	*Predominantly spring sown grain and seed crops.*

Summary of Farm Environmental Risks and Planned Actions

Location (Where the risk area is - Map reference)	**Identified Risk** (Nitrogen leaching, phosphorus and sediment runoff, microbial contaminants)	**Planned Action (Mitigation)** (What do you plan to do and by whom?)	**Timeframe** (When will the work be done?)

Management Section for the Freshwater Plan

Cultivation and Soil Structure

Management Objective	The physical and biological condition of the soil is maintained or improved to preserve its productive capability Sediment and nutrient losses to water associated with erosion are minimised.
Targets	• Farming activities are managed to prevent erosion. • Farming practices are used to minimise run-off of water and associated sediment and nutrient losses. • Farming practices are implemented to optimise the infiltration of water into the soil profile. • The productive capability of the soil is monitored and maintained.
Identified Risks	The soils on my farm are: The topography of the farm is: The environmental risks associated with the management of these soils are:

Key Actions Management changes to reduce environmental risks relating to soil management.	**When by**	**Evidence of completion**

Good management practices currently employed to address the environmental risks associated with soils. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future. Your answers will assist with the development of a plan to reduce and manage the environmental risks on your farm.	**Comment (Indicate answer)**
Reduce cultivation intensity by adopting strip tillage or direct drilling. Minimise the number of passes over the paddock. This is particularly important if your paddocks are sloping or your soils are light and easily eroded by the wind. *Make deliberate decisions about your cultivation practice. There may be times when you need to increase cultivation intensity or bring out the plough to deal with soil constraints and weed and pest issues.*	
Manage crop rotations to maintain soil organic matter levels. *The Organic Matter (OM) in the soil is a source of many plant nutrients, particularly nitrogen. OM also plays a major role in determining soil physical characteristics such as structure, moisture retention and water infiltration. Most of the soil organic matter in intensive cropping rotations is derived from the breakdown of the old roots. This can be a slow process.*	
Reduce run-off from soils by improving infiltration, e.g. remediate soil compaction and surface crusting.	
Identify critical source areas within the paddock. These may include; land adjacent to drains and waterways and intermittent streams. *Leave critical source areas uncultivated, in pasture, to increase the infiltration rate and reduce run-off from the cultivated soil surface.*	
Manage irrigation to avoid ponding and run off. *Applying too much water, too quickly is a risk for most soils, but particularly risky for soils with low infiltration rates.*	
Maintain soil cover with crop or crop residue. *Minimise the fallow periods between crops. Leave crop residues on the soil surface during the winter or use winter cover crops.*	
If you are cultivating sloping ground, work across the slope face rather than up and down the slope. *If the rows are oriented up and down the slope, restrict their length to 200 m. Use contour drains to break the rows up.*	
Cultivation methods are used to slow water flow across paddocks and between crop rows. *Even flat and well-drained paddocks are susceptible to the effects of runoff and erosion. Use wheel track ripping and wheel track dyking to slow run-off and reduce erosion. Contour drains are temporary drains used to collect run-off water, they control the speed of run-off water when the correct gradient is used.*	
Silt traps and/or soil containment systems are used to prevent soil and sediments reaching waterways.	
Buffer zones and/or riparian strips are used between cultivated soils and waterways. *Environment Southland's permitted activity rule for cultivation is for a 5 m buffer strip beside a waterbody. Avoid having bare ground between cultivated soil and waterways. Undertake risk assessment for overland flow. Factors which may influence the risk of overland flow include:* • *Slope (length and grade).* • *Soil vegetation cover.* • *Intensity and volume of rain and/or irrigation.* • *Soil physical properties - compaction, infiltration rate.* • *Tillage choices.* • *Grazing strategies.*	
Intensive grazing is managed to reduce the risk of pugging and sediment run-off. *Where possible choose paddocks away from waterways to plant winter crops.* *Break-feed towards waterways as this provides a wider buffer for filtering runoff and retaining nutrients within the paddock than if grazing beside the waterway first. Back-fence stock away from areas that have already been grazed.*	

Soil quality is monitored at regular intervals. *Use visual soil assessment (VSA) methodologies e.g. mini VSA for cropping farmers (https://www.far.org.nz/articles/1260/how-to-diy-mini-soil-visual-assessment-vsa).*	
Management practices other than those listed above.	

Management Section for the Freshwater Plan

Nutrients

Note: *For all landholdings above 20ha, the FEP freshwater module needs to contain a nutrient budget calculated with the latest version of OverseerFM in accordance with the latest version of the OverseerFM Best Practice Data Input Standards (or an alternative model approved by the Chief Executive of Southland Regional Council).*

Management Objective	To use nutrients efficiently and minimise nutrient losses to water
Targets	• The amount, rate and timing of fertiliser applied does not exceed the agronomic requirements of the crop. • Fertilisers are stored, loaded and applied in ways that minimise the risk of spillage, leaching and loss to water bodies. • Available mitigation measures for nitrogen losses are implemented. • An OveerseerFM nutrient budget has been prepared for the whole farm. • Phosphorus losses from farming activities are minimised.
Identified Risks	Risks associated with the soils on the farm: Risks associated with the farm nutrient management strategy

Key Actions Management changes to reduce environmental risks relating to nutrient management.	**When by**	**Evidence of completion**

Good management practices currently employed to address the environmental risks associated with nutrients. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future. Your answers will assist with the development of a plan to reduce and manage the environmental risks on your farm.	**Comment (Indicate answer)**
Develop a soil testing strategy to ensure all paddocks have regular soil tests and the sample collection is representative of the cropped area.	
Test the soil before making a nitrogen (N) input decision to consider the amount of readily plant available N at the time of sampling (Mineral N). A measure of the likely amount of N that could become available to the crop over a given period (Potential Mineralisable N) can also be estimated and used to inform your N input decision making. *The Mineral N test (sometimes called Deep Nitrogen Test) is a lab based test which measures the two forms of plant available N (nitrate-N and ammonium-N) at the time of sampling. Nitrate quick test strips allow nitrate-N in the soil to be measured in the field. The potential mineralisable nitrogen (PMN test) is a measure of the amount of N that could potentially become available to a crop as soil organic N is mineralised over a 3 month period under optimal conditions of soil temperature and moisture. The actual amount of N that will be mineralised will likely be less than the PMN because temperature and moisture in the field are often not optimal for mineralisation.*	
Prepare a pre-season nutrient budget for each crop, taking into consideration a realistic crop yield (use your long term average yield as a guide) and likely soil supply of N (from soil tests) and amount of residue from the previous crop. *Your fertiliser consultant or farm advisor will prepare pre-season crop budgets for you if required.*	
Prepare a post-season nutrient budget to show how well your risk assessment and management practices are improving the nutrient management on your farm. An Overseer nutrient budget is an example of a post – season nutrient budget. *A nutrient budget provides useful information about nutrient flows on the farm.* *In Southland all landholdings over 20ha, require a nutrient budget in the FEP. OVERSEER nutrient budgets or budgets from an alternative model approved by the Chief Executive of Southland Regional Council, may be used.*	
Use a decision support tool to predict N demand for the crop. *Decision support tools use soil test and crop information to prepare a nutrient budget and predict the fertiliser requirements for the expected yield.*	
Soil and weather conditions are considered before fertiliser is applied. Fertiliser is applied when the risk of run-off, volatilization and leaching is low. *Nitrogen fertiliser is not applied when the ground is saturated and/or when the tile drains are running. Nitrogen is not applied when the 10 cm soil temperature at 9am is less than 6 degrees Celsius.*	
Soil constraints and other limiting factors are taken into consideration when determining fertiliser requirements. *Soil restraints include shallow soils, soils that are poorly drained and/or compacted soils and soils where structural constraints will limit crop yield.*	
Use a certified (Spreadmark) fertiliser spreader or calibrate your own spreader before use to deliver the correct rate for the crop. *Do not spread fertiliser onto riparian strips and into waterways.*	
Avoid storing and applying fertiliser near waterways: drains, streams, wetlands, ponds, lakes and rivers. Do not apply fertiliser within 10 m of a waterway or wetland. *Fertiliser storage and loading sites should be located at least 50 m from open waterways on areas that are not susceptible to flooding.*	
Consider crop rooting depth as well as nutrient demand and ability to grow through the season to utilise or 'mop up' nutrients from high fertility soils, e.g. in soils cultivated after long term pasture, or soils that have had regular effluent applications.	
Intensive grazing is managed to reduce the risk of nitrogen leaching. Consider the increased risk associated with paddocks with free draining soils. Use on-off grazing to distribute urine patches more widely, and if you can, use a quick growing mop-up crop in late winter/early spring to take up soil nitrate and reduce the risk of N loss via leaching.	

Test the nutrient content of manure, slurry, compost or effluent before application. *The release of N from organic sources can be difficult to predict. Usually the mineral forms of N are immediately available to the crop, whereas the organic forms are released slowly through microbial activity.*	
Measure and record Olsen P levels regularly. Reduce phosphorus fertiliser applications if levels are above the target levels for your soil-type and crop. *Your fertiliser consultant will advise on the crop requirements for P.*	
Consider the type of phosphorus fertiliser being applied. Losses are more likely from products with readily soluble forms of P. *Examples of the more common forms of soluble phosphorus fertilisers include; superphosphate, triple superphosphate, sulphur super, MAP, DAP and compound fertiliser formulations.*	
All fertiliser applications (product, rate, timing and placement) are recorded. *Become familiar with and use a farm data recording system to collect and manage your farm information.*	
Management practices other than those listed above.	

Management Section for the Freshwater Plan

Irrigation and Water Use

Management Objective	Irrigation is managed to meet plant demands and minimise the risk of leaching and runoff. All water use is efficient.
Targets	• New irrigation systems are designed and installed in accordance with industry codes of practice and standards. • The performance of irrigation systems is assessed annually and they are maintained and operated to apply irrigation water at optimal efficiency. • The timing and depth of the water applied takes account of crop requirements and is justified through soil moisture monitoring or soil water budgets and climatic information. • The timing and rate of irrigation applications does not exceed the crop requirements or the available water holding capacity of the soil. • Staff are trained in the operation, maintenance and use of irrigation systems. • Non-irrigation water use is monitored and efficient.
Identified Risks	Risks associated with the soils and topography of the farm: Risks associated with the irrigation system and its management:

Key Actions Management changes to reduce the environmental risks associated with irrigation practice.	**When by**	**Evidence of completion**

Good management practices currently employed to address the environmental risks associated with irrigation. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future. Your answers will assist with the development of a plan to reduce and manage the environmental risks on your farm.	**Comment (Indicate answer)**
The system has been designed with site specific knowledge of the soil, climate and crop needs. *Refer to Design Standards for Piped Irrigation Systems in New Zealand (Irrigation NZ, October 2012); Code of Practice for the Design of Piped Irrigation Systems in New Zealand (Irrigation NZ, October 2012).*	
All staff involved in the operation and maintenance of the irrigation system are suitably trained.	
The irrigators and pumps are regularly maintained.	
The system is checked regularly for blocked nozzles, leaking hydrants or hoses, irrigator alignment and any problems are fixed.	
Application rates have been checked at the start of the season and results recorded. The water distribution is even. *Measured irrigation application depths should be within +/- 10% of the target depth (not including end gun).* *Distribution uniformity (DU) describes how evenly irrigation is applied to the crop. Distribution uniformity should be at least 0.8. Application depth and DU can be checked using a bucket test with industry approved guidance. Bucket tests should be undertaken on each irrigator at least once every three years.*	
During irrigation, there are regular checks for excessive runoff or ponding and the system is adjusted or turned off if excessive runoff and/or ponding occurs.	
Non-productive areas such as tracks, impermeable surfaces, rivers streams are not irrigated.	
All irrigation applications are justified by monitoring and/or other assessment or information. Water is not wasted. *Rainfall and soil temperature is measured and recorded. Weather forecasts are consulted. Soil moisture monitoring or a soil water.*	
Soil moisture levels are assessed and used to track soil deficits.	
Crop growth and development is monitored.	
Soils are well-managed to optimise infiltration and minimise runoff. *Soil compaction is remediated. Heavy machinery restricted to specified pathways. Some crop residue is left in the soil.*	
Water meters are installed to measure water use. *Water meters are the most effective way to monitor water use. They can detect small leaks and losses and are an effective way to track seasonal and annual consumption.*	
Water usage is regularly monitored and there is a system for tracking water use. *Read meters at the same time and day on a regular schedule to ensure readings are consistent. A water-use tracking form works well.*	
There is a regular trough maintenance programme, including the water reticulation system. Leaks are fixed. *Include replacing troublesome ballcocks and checking balls, strings, arms and pins. Have a system to record and sign off these checks.*	

Management practices other than those listed above.

Management Section for the Freshwater Plan

Waterbodies - Wetlands, Riparian areas, Rivers, Lakes and Drains

Refer to the Biophysical map with details about wetlands, drains and riparian plantings.

Management Objective	Wetlands and riparian areas are managed to avoid damage to the water body's bed and margins and to minimise the risk of the direct input of nutrients, sediment, and microbial pathogens to the water.
Targets	• Stock are excluded from water-bodies in accordance with regional council rules or any granted resource consent. • Vegetated riparian margins of sufficient width are maintained to minimise nutrient, sediment and microbial pathogen losses to water bodies. • Farm tracks, gateways, water troughs, self-feeding areas, stock camps, stock crossings, wallows and other farming activities that are potential sources of sediment, nutrient and microbial losses are located to minimise the risks to water quality. • Drains are managed in accordance to regional rules with respect to sediment discharges, the preservation of mahinga kai and exotic species, and the management of weeds.
Identified Risks	

Key Actions Management changes to reduce the environmental risks associated with water-bodies.	**When by**	**Evidence of completion**

Good management practices currently employed to address the environmental risks associated with the management of waterways and drains and farm biodiversity. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future. Your answers will assist with the development of a plan to reduce and manage the environmental risks on your farm.	**Comment (Indicate answer)**
Stock are excluded from waterways in accordance with national and regional regulations to mitigate stream bank erosion and contamination from direct deposition.	
Use vegetative buffer strips / riparian plantings to mitigate run-off.	
Manage areas where animals congregate to reduce pugging and run-off. *For example tracks, troughs, gateways and feeding out areas.*	
Consider the paddock selection for winter grazing. *Wherever possible, select paddocks with soils that are not vulnerable to leaching, pugging and compaction, and do not have significant artificial drainage via mole and tile drains, waterways, temporary streams or natural drainage channels.*	
Grazing is managed to minimise losses from critical source areas (CSA). *For example, graze gullies and swales in areas of fodder crop and areas closest to waterways last. If soils are saturated in a critical source area, avoid grazing it.*	
There is a programme of planting in place to protect stream edges from erosion and provide shading to the water. *Shading can enhance in-stream habitats.*	
Stock crossings points (bridges and culverts) are effectively managed to contain surface water runoff and associated contaminant losses.	
There is a management plan to prevent riparian plants from becoming an issue in the future. *Some plants may spread and choke up waterways. Seek advice from your council about suitable plants for riparian plantings in your region.*	
There is a management plan to prevent weeds from establishing in the riparian zone and becoming an issue in the future.	
Drain management practices are consistent with Environment Southland's Water and Land plan.	
Drain clearance is planned to avoid adverse effects on spawning times or migration of native and exotic fish.	
Worksites are checked before starting drain clearance for any native nesting birds. If present, plan work to avoid disturbing them.	
If there is potential for fish to be stranded during the work, there is a plan for their recovery to increase the chance of their survival.	
Drain clearance material is disposed of so that: • Sediment is not lost back into waterbodies; • Damage to mahinga kai species and/or their habitats is avoided.	
Areas of remnant native vegetation, wetlands and springs are being protected.	

I participate in Southland's High Value Area programme or I have retired land under a QE 11 covenant to protect remnant native vegetation and wetlands on my farm.	
Ways to enhance on-farm biodiversity (e.g. habitats and/or corridors) have been identified and over time continuous progress is being made to protect these. Habitats of all species are protected.	

Management Section for the Freshwater Plan

Critical Source Areas and Point Sources for Nutrient and Contaminant Losses

Management Objective	The location of point sources for contaminant losses are identified and managed to minimise the risk to human health and water quality. Point sources may be associated with: • The biophysical characteristics of the farm. • Constructed objects such as offal pits, silage stacks, spray sheds, sprayer wash down areas and rubbish pits. • Management practices, e.g. winter grazing and cultivation.
Targets	All point sources for nutrient and contaminant losses are identified and managed to avoid direct discharges of pollutants to groundwater or surface water.
Identified Risks	

Key Actions Management changes to reduce environmental risks associated with all point sources.	**When by**	**Evidence of completion**

Good management practices currently employed to address the environmental risks associated with point sources. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future.	**Comment (Indicate answer)**
Critical source areas and point sources where run-off water enters drains and wetlands are identified.	
Appropriate management is implemented at critical source areas to reduce the risk of contaminants entering water bodies. *For example: leaving uncultivated, strategic grazing, fencing off, bunding and vegetated containment areas.*	
The design, construction and siting of the offal pit adheres to any regional council regulations.	
Offal pits, silage stacks and rubbish dumps are sited more than 50 m from waterways, wetlands, bores and property boundaries and are in an area that is not prone to flooding and ponding.	
Surface runoff water is directed away from pits, stacks and dumps. Leachate is contained and unable to enter ground or surface water.	
Animals and rodents do not have access to the pits, stacks and dumps.	
The offal pit is only used for waste originating from this property.	
Point sources are managed to reduce odour.	
Areas where stock congregate and stock camps have adjacent vegetative buffer strips or sediment traps at critical source points to intercept runoff water.	
The risk of soil compaction where stock congregate is reduced by considering soil vulnerability and the placement of feeding out areas and water troughs.	
Areas of soil compaction are removed, thereby reducing the risk of run-off. *Sub-soiling or ripping followed by cultivation may be required. The soil will need to be dry enough to do this successfully.*	
There is an approved procedure (NZS 8409 detailed in the Growsafe procedures) in place for washing down agrichemical sprayers and wash-down water is contained. *No run-off of wash-down water and spray mixture enters any surface water, including streams, ponds, field drains, septic tanks, or sewerage systems.*	
Storage of agrichemicals and the disposal of agrichemical containers is managed in accordance with an approved procedure to reduce the risk of contaminants entering the environment. *(NZS 8409 detailed in the Growsafe procedures).*	

Management Section for the Freshwater Plan

Intensive Winter Grazing

Management Objective	Winter grazing is managed with consideration of the associated environmental risk.
Targets	• The Water and Land rules pertaining to winter grazing are understood and followed. • Sediment losses and faecal contamination into waterways is minimised. • Soil degradation and loss quality from pugging is minimised. • Nutrient loading after the grazing event is managed to minimise nitrogen losses. • The welfare and productivity of the animals is managed.
Identified Risks	

Key Actions Management changes to reduce environmental risks associated with winter grazing.	**When by**	**Evidence of completion**

Requirements and Good management practices associated with intensive winter grazing. Use this list of management practices to identify what is already being done on your farm and what you might consider changing in the future. Your answers will assist with the development of a plan to reduce and manage the environmental risks on your farm.	**Comment (Indicate answer)**
Consider the paddock selection for winter grazing. *Wherever possible, select paddocks with soils that are not vulnerable to leaching, pugging and compaction, and do not have significant artificial drainage via mole and tile drains, waterways, temporary streams or natural drainage channels.*	
There is a feed-plan in place for the stock. *Consider using the B+LNZ FeedSmart app. - www.feedsmart.co.nz.*	
There is an ungrazed vegetated buffer zone of crop between the livestock and any waterways. *Five metres is a good starting point (Southland's Water and Land Plan minimum buffer is 5 m) Increase this distance with slope and soil type risk.*	
Critical source areas where soil, nutrients and faecal matter to can enter waterways are identified and fenced off. These are grazed last or quickly and lightly when soil and weather conditions allow. *This is potentially a requirement and not a GMP, if grazing is within 5-20 m from a waterway.*	
Graze stock on sloping ground from the top of the slope towards the bottom; Leave a 20m 'last bite' buffer at the base of the slope. *The standing crop acts as a filter.* *This is potentially a requirement if grazing is within 5-20 m from a waterway.*	
If there is a waterway present, grazing is started at the end furthest away from the waterway.	
If there is a regionally significant wetland, sensitive waterbody, estuary or coastal marine area adjacent to grazing area, there is a 20 m buffer between the grazing area and the water. *This is a requirement of the Water and Land Plan.*	
Feed breaks have a long grazing face – Research shows that the crop will be utilised more efficiently.	
Back fencing is used to prevent stock access to the grazed breaks. This helps to minimise pugging damage and reduces the risk of run off from the bare, recently grazed soil.	
Transportable water troughs and portable feeders for supplementary feed are used. Portable troughs and feeders are moved with the breaks and kept away from critical source areas. *Regular movement reduces the risk of soil damage from pugging and run-off from compacted soils.*	
Test the soil for mineral N and potentially available mineral N prior to the next crop being planted. Adjust the crop's fertiliser requirement to capture the soil supply of nitrogen.	
Consider how you will manage areas of intensive winter grazing in adverse weather events over the coming season.	

Documentation

It is important to keep good farm records for all your activities relating to crop and stock management.

The following document list will support your FEP freshwater module.

Document	Yes or No
Regional Council Consents:- water, land use, and discharge consents.	
OverseerFM nutrient budget.	
Soil test results.	
Crop nutrient budgets - fertiliser recommendations based on soil test results.	
Fertiliser placement maps.	
Training records.	
Soil moisture monitoring records.	
Irrigation records.	
Irrigator maintenance records.	
Fertiliser spreader calibration records.	
Crop diaries (ProductionWise® reports).	
Growsafe certificates.	
Stock records.	
Winter grazing records.	
Photos.	