

WRITING A FRESHWATER FARM PLAN EXTRA GUIDE:

# A farm operator's guide to Freshwater Farm Plan mapping

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# Introduction

This guide is designed to be read alongside “A farm operator’s guide to writing a freshwater farm plan”.

This guide outlines the maps you need to provide to meet freshwater farm plan (Plan) certification requirements, gives advice on creating maps, and has useful checklists at the end to make sure all certification requirements are met.

## Maps to be provided in a Plan

To meet certification requirements, you’re required to provide maps containing information that relates to your risk identification and action selection process.

The regulations allow you to present maps in a way that makes sense to you, providing the requirements are met. This means you can choose any mapping tools, the form, size, the number of maps, and the combination of features you display on each map.

However, you should check with your regional/unitary council if they have any guidance or specific mapping requirements. They may also have some maps you can use. For example, maps of areas which show the catchment context, challenges, and values (CCCV).

*TIP: Deciding the number of maps and their combinations will give you a strong foundation to work from once you start drawing your maps.*

## Planning your maps

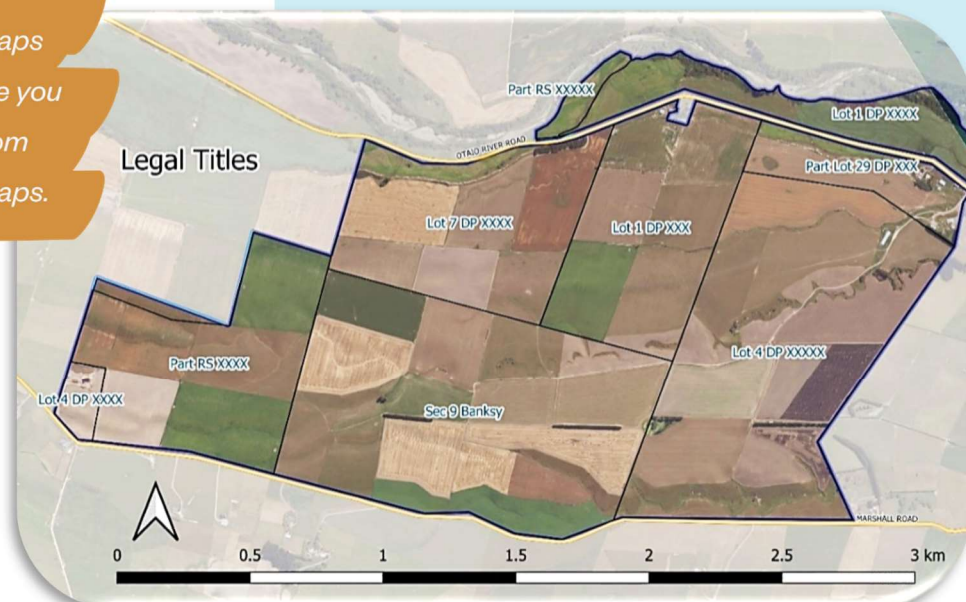
The purpose of mapping is to help you, the certifier, and the auditor understand your farm, identify your risks, and show how your actions are managing these.

Before you begin to create your maps, you should consider what features can be placed together on maps and which features, if any, might be best mapped on their own. It’s important that maps are logical and readable.

Maps which are “busy” with information are overwhelming and will not tell your story clearly. This means certification takes longer, or you may be required to submit more info. However, producing maps which have two or more items mapped together, may better convey the information to the certifiers and auditors making certification faster.

For example, maps showing the property boundary and the associated legal titles give context as well as meets the requirement to map boundaries. The map below is an example of this. Note the inclusion of a north arrow and scale.

**Map 1: Property boundary and legal titles**



# Maps required under the regulations

You must map features related to inherent vulnerabilities, farming activities, and CCCV. These features and tips to help find the data to map are outlined in the tables below.

FEATURES RELATED TO INHERENT VULNERABILITIES	TIPS TO HELP FIND DATA
Farm boundaries, noting on the map any land that is leased or licensed	Any mapping tool can be used to outline the farm boundary. It is helpful to show what land is leased or licenced vs owned. Showing the different legal descriptions for different parcels also helps satisfy the requirement to provide legal descriptions.
Areas of land use if the farm is split into distinctly different land uses	If multiple land uses are used on the same land (for example spring/summer cropping and winter grazing) you need to identify this land as being used for both purposes.
Location of land units (LU)	Land units are decided by identifying areas that have similar climates, soil types, and landforms. A LU may be made of several smaller areas that are not necessarily next to each other. Keep your LUs to a minimum.
Surface freshwater bodies	Google maps and earth show water bodies and their names. You may also find on council maps if they have mapping tools on their websites.
Artificial freshwater bodies (drains/storage ponds/farm dams/irrigation races)	Google maps and earth will show water bodies. You may also find these on Council maps if they have mapping tools on their websites.
Soils- identify different soils. This is important as soils may be what defines the boundaries of your Land Units.	Soil info can be found using SMap or if your area is not covered by this you can use council records or the Fundamental Soil Layer (FSL) <a href="http://www.smap.landcareresearch.co.nz/">www.smap.landcareresearch.co.nz/</a> <a href="http://www.soils.landcareresearch.co.nz/tools/fsl/maps-fsl/">www.soils.landcareresearch.co.nz/tools/fsl/maps-fsl/</a>
Landforms, including slope	Slope mapping can be completed using various tools online. For example Maanaki Whenua has two tools which have slope attributes: <a href="http://www.ourenvironment.scinfo.org.nz/maps-and-tools/app/Landscape/slope">www.ourenvironment.scinfo.org.nz/maps-and-tools/app/Landscape/slope</a> <a href="http://www.Iris.scinfo.org.nz/layer/48064-nzlr-slope/">www.Iris.scinfo.org.nz/layer/48064-nzlr-slope/</a>
Potential areas of intensive winter grazing (IWG) and critical source areas within areas of IWG	These can be marked/highlighted on any aerial map (e.g., Google maps).
Critical source areas not within areas of intensive winter grazing	These can be marked/highlighted on any aerial map (e.g., Google maps).
Drainage systems and areas. Draw areas with subsurface drainage and the outlet point, and open drains.	You may have this information of subsurface drains from the installer or you can draw it onto an aerial map.
Irrigation and frost protection. Areas under irrigation and frost should be drawn and system type identified.	One source of this information may be the design plan from your irrigation designer or you may be able to draw the areas onto an aerial map using any mapping product you wish.

FEATURES RELATED TO FARMING ACTIVITIES	TIPS TO HELP FIND DATA
Fencing to exclude stock from freshwater bodies	Free drawn onto an aerial map Remember fences can be permanent or temporary. You should draw this in a way which makes the two fence types easily differentiated by the certifier and auditor.
Planted riparian areas	Free drawn onto an aerial map
Soil erosion control plantings or works	Free drawn onto an aerial map
Effluent systems and application areas	You should have system design maps from your effluent designer that show the type of system and areas of application. If your system is old or inherited you may not have the design plans, you can free draw this onto an aerial map.
Water-take bores and surface water abstraction points or intakes, including fish screens	This information is usually available on regional councils' websites in their environmental data mapping displays.
Freshwater crossings, including formed crossings, such as bridges, culverts, and fords, and unformed crossings	These can be marked on aerial maps.
Stock-holding areas, including feedpads, winter pads, stand-off pads, and loafing pads	These can be marked on aerial maps.
Other stock-related infrastructure, including milking sheds, wintering barns and shelters, and stock yards	These can be marked on aerial maps.
Farm accessways (for example, formed roads, tracks, races, and underpasses)	These can be marked on aerial maps.
Point source discharges, including rubbish dumps, offal pits, and silage pits; and feed storage bunkers or sheds; and agrichemical, fertiliser, and fuel storage sites; and agrichemical washdown areas:	These can be marked on aerial maps.
Private drinking water supply points.	These can be marked on aerial maps. Identify the ones you know of. Some councils publish the location of these supply points.



FEATURES RELATED TO CCCV	TIPS TO HELP FIND DATA
<p>Existing information on landforms, soil data, climate data, freshwater data, freshwater bodies, contaminants, sites that are significant to the community, and significant <b>species</b> or ecosystems.</p> <p>Identified cultural matters of importance to tangata whenua, including—</p> <ul style="list-style-type: none"> <li>• the cultural significance of the local area; and</li> <li>• the traditional names of freshwater bodies in the local area; and</li> <li>• sites and species in the local area that are significant to tangata whenua.</li> </ul>	<p>Most of these maps should be able to be found in the CCCV information provided by your regional or unitary council.</p> <p>You can copy/include in your own plan.</p>

<b>NEW PHYSICAL WORKS AS PART OF AN ACTION PLAN</b>	Depending on work proposed, different mapping products may be useful.
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### Example table:

Mapping requirement	Map Number
Features related to inherent vulnerabilities <i>Insert features...</i>	<i>Insert map number...</i>
Features related to farming/ growing activities	
Features related to CCCV information	
New physical works (Action Plan)	

*TIP: It is helpful for certification purposes to include a table that sets out which requirements are illustrated on which map.*



# Guide to best practice mapping

## Drawing your maps

Once you have decided on the number of maps and the combinations of features to be mapped on each, you will need to choose the mapping tools that are best for you.

Some maps may be simple with points marked or shapes drawn over an aerial photo or map in a word document. For others you may use more sophisticated options, such as an industry mapping product or a public mapping tool hosted by a region or unitary council.

## Map basics

A good map is one that clearly communicates its message to the certifier or auditor. It should be easy to get orientated, determine distances, and interpret map elements based on the symbols and graphics used.

All good maps have a:

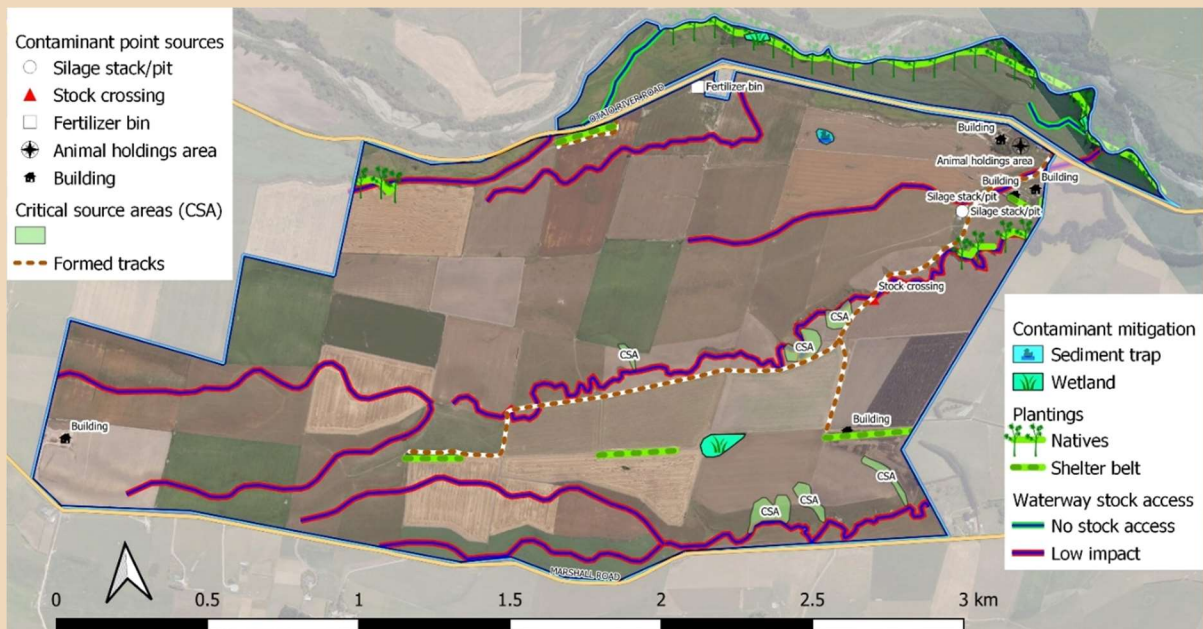
- Title
- Scale
- North arrow
- Legend to identify the different features shown on the map

Bad maps commonly have:

- No scale or a scale which is too big or small
- No north arrow which makes orientation hard
- No legend to identify the different features shown on the map, or show too many features
- Features without supporting context

## Map basics example

This map is an example of a good map straying towards poor. It has a scale, north arrow, and legends. However, it is starting to become cluttered with some features becoming harder to see.



# Map checklist

All maps	Tick
Title	
Scale	
North arrow	
Legend to aid interpretation	

Features related to inherent vulnerabilities	Map #	Tick
Farm boundaries, noting on map any land that's leased or licensed		
Areas of land use (if farm is split into distinctly different land uses)		
Location of land units		
Surface freshwater bodies		
Artificial freshwater bodies		
Soils		
Landforms, including slope		
Potential areas of intensive winter grazing/critical source areas within areas of intensive winter grazing		
Critical source areas not within areas of intensive winter grazing		
Drainage systems and areas		

Features related to farming	Map #	Tick
Fencing to exclude stock from freshwater bodies		
Planted riparian areas		
Soil erosion control plantings or works		
Effluent systems and application areas		
Water-take bores and surface water abstraction points or intakes, including fish screens		
Freshwater crossings, including formed crossings, such as bridges, culverts, and fords, and unformed crossings		
Stock-holding areas, including feedpads, winter pads, stand-off pads, and loafing pads		
Other stock-related infrastructure, including milking sheds, wintering barns and shelters, and stock yards		
Farm accessways (for example, formed roads, tracks, races, and underpasses)		
Point source discharges, including— rubbish dumps, offal pits, and silage pits; and feed storage bunkers or sheds; and agrichemical, fertiliser, and fuel storage sites; and agrichemical washdown areas.		
Private drinking water supply points.		

Features related to catchment context, challenges, and values	Map #	Tick
Existing information on landforms, soil data, climate data, freshwater data, freshwater bodies, contaminants, sites that are significant to the community, and significant species or ecosystems.  Identified cultural matters of importance to tangata whenua, including— <ul style="list-style-type: none"> <li>the cultural significance of the local area; and</li> <li>the traditional names of freshwater bodies in the local area; and</li> <li>sites and species in the local area that are significant to tangata whenua.</li> </ul>		

New physical works as part of an Action Plan	Map #	Tick
Physical works as identified in Action Plan		