

5 Larger Commercial Operations.

Larger commercial operators require a more formal reporting structure...

Sustainable land management plans are a key tool.

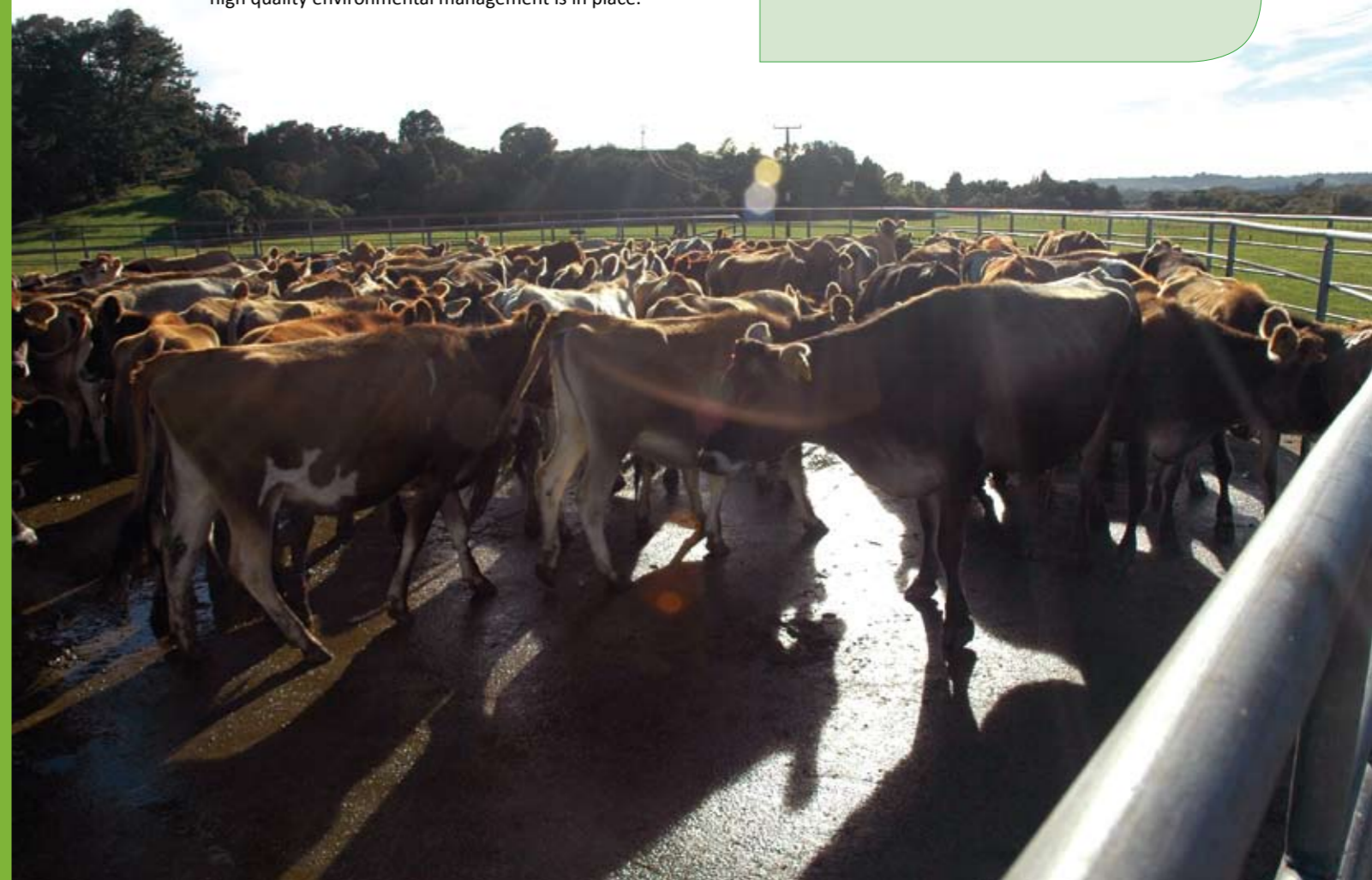
Sustainable land management planning is particularly important for larger commercial farming operations. These larger businesses are distinguishable by their ownership structure; in contrast with an owner operator they feature investors whose core business might not necessarily be farming. Owner operators may function quite well with an informal approach to planning however larger commercial operators require formal planning structures which may involve reporting to a board of directors who monitor progress on behalf of investors. Therefore, sustainable land management plans form a natural part of a large commercial farming operation.

A Sustainable Land Management (SLM) plan starts with an analysis of soil, land and other resources. It provides the basis for broad land management planning, taking into account issues such as return on investment and support for environmental services (biodiversity enhancement and water quality maintenance). It allows land managers to run a profitable business and leave the farm in a more sustainable condition for the future. These structured plans provide evidence of how economic, environmental, social and cultural issues associated with the land are managed, demonstrating to markets and regulators that high quality environmental management is in place.

Formal techniques such as land use capability mapping and biodiversity assessment are used in an SLM. They provide a consistent and transparent approach which suits larger commercial operations which may operate multiple properties across a region. The techniques often rely on digital mapping and provide data that can be continually re-used in management of the property (e.g. planning and operational control of fertiliser application). The mapping approach also provides visual information that is easily understood by shareholders and the wider community.

Key Concepts:

- Matching land use to underlying land capability
- Understanding the whole range of resources that make up the property
- Identifying integrated approach to property management that sustains both economic returns and environmental services – ‘win-win approach’



Why is sustainable land management planning important?

Protecting the long term health of fundamental farm resources.

Soil can be regarded as the biggest capital investment in farming. It is a key and limited resource and SLM planning helps us to look after it. A basic premise is that farming activities are dictated by the limits of each unit of land. Soil is a key limiting factor and good farm managers recognise this and work to protect and enhance it. An SLM plan will provide a detailed breakdown of the soil types on a farm and offer an excellent platform on which to base initial management decisions.

A way to integrate management of economic and environmental requirements.

Farm managers deal with complex natural systems such as pasture growth and stock production. They also face increasing requirements to demonstrate performance in managing a range of factors that impact on the environment; effluent management, nutrient runoff and biodiversity enhancement.

Economic factors are integrated within the plan and link directly with long term productivity and the provision of environmental services. Therefore SLM plans allow an integrated look at overall property objectives and the relationship between economic, environmental, social and cultural resources.

Benefits of a sustainable land management plan:

- Ability for the owner to match land management for forestry, agriculture and other land uses to the capability of different parts of the property – ensuring sustainability and maximum long term returns
- Providing a clear basis for any future investment – so money is put into appropriate investments on the right parts of the property
- Planning of planting, e.g. forestry, soil conservation works, stream works, riparian plantings, restoration, shelter etc.
- Property value increases and landscape enhancement
- Optimal use of fertiliser and other inputs – through development of a nutrient management plan which includes application based on soil fertility, land use and soil type



Land information to land management.

The following describes the process for the development of a comprehensive sustainable land management plan. Less detailed plans are unlikely to involve as many steps.

Understanding property management objectives and constraints.

Firstly it is essential to define the property management objectives and any associated constraints. A discussion needs to be held between landowners, land managers and other interested parties to confirm these points. Property information such as stock numbers and fertiliser use can be gathered at this stage. Constraints such as existing management agreements and easements need to be confirmed.

Existing property information and resource maps.

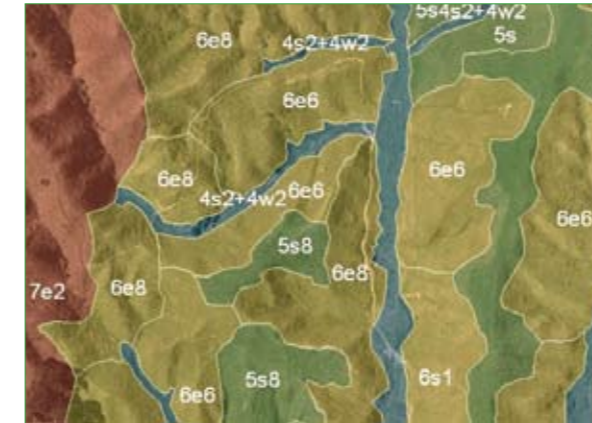
Existing property maps or aerial photographs showing key features are obtained. An electronic GIS map is created and overlaid with property resource information such as Land Use Capability (LUC), fence lines, buildings etc.

Property survey and map generation.

A land resource survey of the property is undertaken to gather additional information. This will generally include but is not limited to:

- Land use capability (LUC)
- Biodiversity and vegetation cover
- Recreational or tourism use
- Carbon farming potential
- Visual landscape zones
- Production forest
- Waterways

Mapped information is transferred to electronic GIS maps to allow different 'layers' of information to be compared. Examples of some of the resources that are generally mapped are provided in the following examples.



Land Use Capability mapping.

A key component of good SLM planning is Land Use Capability (LUC) mapping. This widely used system has been developed and refined in NZ since the 1970's. Land Use Capability (LUC) classification is an assessment of the land's capacity for sustained productive use. It identifies the class of land from 1 (the most versatile and productive class) to 8 (the class with most limitations to use). The dominant limitation on productive use is identified as one of four types of limitation – erodibility, climate, wetness, or soil within the rooting zone. A particular land management unit has particular management and soil conservation requirements.



Amalgamation of LUC units into more general production zones is sometimes undertaken to assist planning.



Biodiversity.

A survey of vegetation cover and biodiversity values is important to allow areas with significant biodiversity value to be incorporated into the plan. Indigenous vegetation values, rare species etc. are taken into account.



Carbon farming potential.

The potential carbon credits for a farm can be quantified once forest areas are fully identified (species and age). A value can be assessed in relation to future farm emissions liabilities, harvest liabilities and forest management plan.

The Emissions Trading Scheme states that Pre-Kyoto Exotic forest is eligible for a one-off allocation of credits while Kyoto Exotic is eligible for annual credits. Pre-Kyoto native is not eligible for credits but Kyoto Native is eligible for annual credits.



Management zones and management directions.

Once the resources of the property are mapped and understood the relationships between the various aspects can be examined. Management zones can be identified, where a similar broad management approach can be used. There might be zones such as high production pasture management, integrated farming and forest woodlots, biodiversity enhancement etc. A discussion of the resource information with the management team is useful to identify possible management zones and broad management directions.

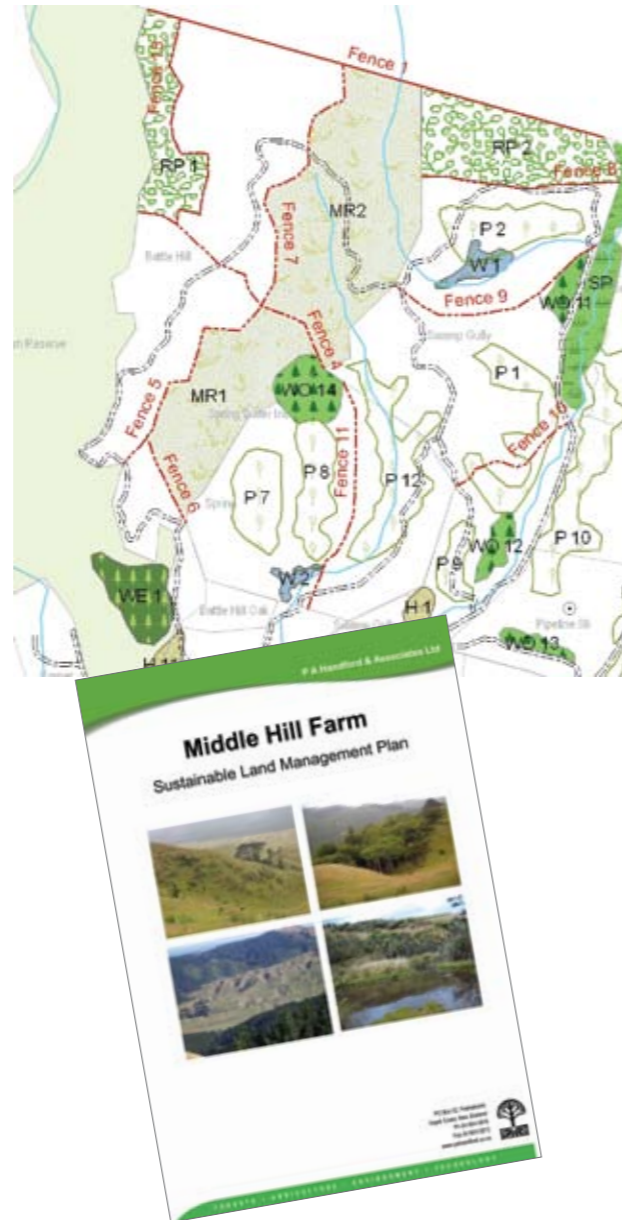
Draft plan.

Based on management team discussions, a draft property plan and associated maps are produced identifying developments such as:

- New landuse options
- Agricultural productivity improvements
- Soil conservation plantings
- Biodiversity management and restoration options
- Waterway management approaches
- Alternative effluent management approaches
- Provision of carbon credits

Sustainable land management plan and implementation.

A practical work programme is set out to implement the SLM plan. It is developed in conjunction with the landowners and their management team.



For guidance on creating a sustainable land management plan simply contact your local NZ Landcare Trust Regional Coordinator or local council.

Example: Kakaho wetland, SLM planning in action.

Wetland areas on a farm create potential problems for stock management. They contribute minimal pasture production and can form an ongoing stock hazard, particularly if stock attempt to enter the areas in search of feed in dry periods. On the other hand, wetlands can provide significant environmental benefits. Wetland systems are increasingly rare and can contain threatened native wetland plant communities which in turn provide important lowland habitat for native birds and fish. Wetlands are often described as 'nature's kidneys', as they have a fantastic ability to filter out sediment and nutrients from water moving through the wetland system.

Fencing and restoring wetland areas on a property can provide significant benefits, such as improved farm productivity through avoiding stock losses and time lost rescuing stock. It can provide increased biodiversity and water protection performance for the property. The enhanced landscape can improve the look and real estate value of a property.

SLM planning allows wetland areas to be identified within the whole farm property and approaches to fencing and management identified that benefit the overall farm operation.

This wetland area has been fenced and planted following completion of an SLM plan. It removes a problem area for stock management, and provides capture of sediment and nutrients to protect downstream waterways and the Pauatahanui Inlet. It is providing important habitat for native waterfowl and will provide increasing habitat for other native birds as restoration plantings develop.

