

EverGraze

More livestock from perennials

More perennials

Better livestock

Healthier catchments

North East (Victoria) and Murray (New South Wales) catchments



FUTURE FARM
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meat & livestock AUSTRALIA



australian wool
innovation
limited

EverGraze is testing farming systems for the future that meet the profit needs of producers and the natural resource outcomes of catchments.

These future farming systems will improve the long-term viability of meat and wool production enterprises and simultaneously improve catchment health.

EverGraze recognises that profit drivers for natural resource outcomes are essential if we are to achieve on-farm land management change on the scale needed to address the environmental challenges in the high rainfall zones (above 550 mm rainfall).

Industry workshops and an extensive review of literature were used to design a project that optimises the trade-off between profit and natural resource management outcomes. EverGraze aims to provide answers at both the catchment scale where integrated planning takes place and at the farm scale where change occurs.

Innovative farming systems that apply current information and with previous research results have been designed. These systems integrate native perennial pasture with introduced perennial pastures, along with high-performance meat and wool production systems, and have the potential to achieve ambitious profit and natural resource outcomes.



EverGraze has national relevance, with Proof Sites (Fig 1) across the high rainfall zone of southern Australia including the North East catchment in Victoria and Murray catchment in New South Wales.

Research in the North East and Murray catchments will investigate inexpensive management strategies that can be adopted on-farm that will improve the contribution of native grasses to profitability and catchment health across the whole-farm. The research will develop new sheep production systems from native based pastures that increase profit and perenniality.



Figure 1: Regional locations of EverGraze

Regional guidelines will help livestock producers improve the persistence of perennials in native based pastures and increase productivity



The problem

Native pastures in northern Victoria and southern NSW are usually dominated by annual species. They occupy a considerable proportion of the landscape and are mostly used in wool production and generally offer low returns per hectare.

Low profitability from native pastures is a complex issue and may have as much to do with landscape and soil factors as with the pasture species themselves. Attempts to boost productivity by using fertiliser have been successful but nearly always at the expense of the native perennial grasses that are integral for sustainability. Much of the landscape cannot be and will never be sown, therefore keeping and improving from the current perennial base is essential.

The key natural resource management issues are related to the perenniality of these pasture systems. Native perennial grasses have an important role in these systems with respect to water use, ground cover and biodiversity. Hence, any approach which aims to boost productivity while not protecting or, even, encouraging these species will not properly address NRM issues. This research is testing inexpensive management strategies that can be adopted on-farm that will improve the contribution of native grasses to profitability and NRM outcomes across the whole farm.

The opportunity

We know from previous research that we can improve native grass pasture production by the application of superphosphate. We also know that grazing management can be used to improve the perennial native grass component of pastures. These experiments will investigate the effects of both grazing management and fertiliser inputs on pasture and animal productivity and NRM outcomes such as ground cover, perenniality and groundwater recharge.

The project is exploring realistic grazing options that can be used to maximise production while making sure that perennial species (particularly native pastures) are protected.

An economic analysis of sheep based production systems that utilise the pasture assets, both introduced and native, within the farm will be undertaken.

In line with current best management practices on-farm, both experiments are using a breeding flock of high performance ewes to measure or capture the economic benefits of the systems imposed. While the majority of native pasture experiments to date have used wethers, the potential productivity of the system can be gauged by the use of a breeding system.



The new farming system

There are two experimental sites, one in the North East Catchment Management Authority's region at Chiltern in Northern Victoria and one at Holbrook in the Murray CMA region in Southern New South Wales.

These experiments are looking at the two different systems in which native grass pastures operate. In one of these systems the farm has only non-arable land, and therefore the enterprise is based solely on native perennial pasture. In the other, the farm has a mixture of both arable and non-arable land, and therefore has a combination of native and introduced pastures. Where there are native and introduced pasture systems, there is the potential to integrate them, providing opportunities to increase profitability while maintaining or increasing the perennial component in the native pastures.

The two sites are integral to providing greater insight into native pastures systems on farm and across catchments. One site (Chiltern) has good composition of native grasses within the pasture, and is optimising this pasture for production. The other site (Holbrook) is looking at maintaining or increasing the perennial component of the native grass pasture by using a phalaris pasture.

North East Victoria

Chiltern, North East CMA

At Chiltern EverGraze we are investigating how to increase the productivity of native-dominated pastures and ensure the persistence of native perennial grasses by combining fertiliser application with appropriate grazing management.

The experiment is the first to combine higher superphosphate use with rotational grazing. The site is a mixed wallaby grass/weeping grass pasture.

This trial is aimed at comparing the systems, of either rotationally grazing or set stocking native grass pastures. The four different systems that are being evaluated are:

1. Low fertility, set stock system. This is seen as the current management practice that is used on many native grass pastures.
2. Higher fertility system that is set stocked.
3. Higher fertility system with rotational grazing. The rotation is a simple four paddock system. The sheep graze the paddock for two weeks, and then it is six weeks before they return to that paddock. In spring the paddock is grazed for one week and then rested for three weeks.
4. Higher fertility system with rotational grazing. It is not always easy to undertake rotational grazing when there are lambs at foot. Therefore at lambing the internal fences will be removed and the ewes and lambs will graze the whole area.

These systems are being run on 3 ha paddocks. These four treatments are replicated.

Table 1: North East Victoria site grazing systems

Fertiliser treatment	Grazing system	Stocking rate dse/ha
Low Phosphorus	Set stocked	6.2
High Phosphorus	Set stocked	9.3
High Phosphorus	Rotational grazing – time based	9.3
High Phosphorus	Rotational grazing – tactical	9.3



NORTH EAST
CATCHMENT
MANAGEMENT
AUTHORITY



Murray
CMA CATCHMENT MANAGEMENT AUTHORITY



NSW DEPARTMENT OF
PRIMARY INDUSTRIES



State Government
Victoria Department of
Primary Industries



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Established and supported under the Australian Government's Cooperative Research Centres Program. Through the implementation of innovative research outcomes and new technologies, the Future Farm Industries CRC is developing new and adaptable farming systems for Australia that will improve livestock and cropping industries productivity, offer new woody crop options, make better use of limited rainfall and create more diversity in landscapes.

Southern NSW Holbrook, Murray CMA

This site will look at whether grazing management can be targeted to increase the abundance of native perennial grasses in native pastures as part of an integrated whole-farm grazing system.

The research will measure the overall gains (profits and NRM) from running a rotationally grazed phalaris system with a native grass pasture. The native grass pasture for this experiment is based on wallaby grass, weeping grass and red grass.

Treatment 1) is a control with separate flocks for each pasture type. Wethers are set-stocked on the native pasture and breeding ewes on the phalaris-based pasture.

Treatment 2) is an integrated treatment with one flock of breeding ewes grazing the phalaris and native pastures in one system. Movements between the phalaris and native pastures will be made on a tactical basis.

Treatment 3) is a partial integration in which separate flocks of wethers and ewes but grazing in the one system. A leader/follower (ewes followed by wethers) grazing strategy will be adopted and movements between the pastures types will be as for treatment 2.

Both Holbrook experiments are using a breeding flock to measure/capture the economic benefits of the treatments imposed.

A network of Supporting Sites is being developed around the Proof Site allowing groups of livestock producers to try the new farming systems.



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