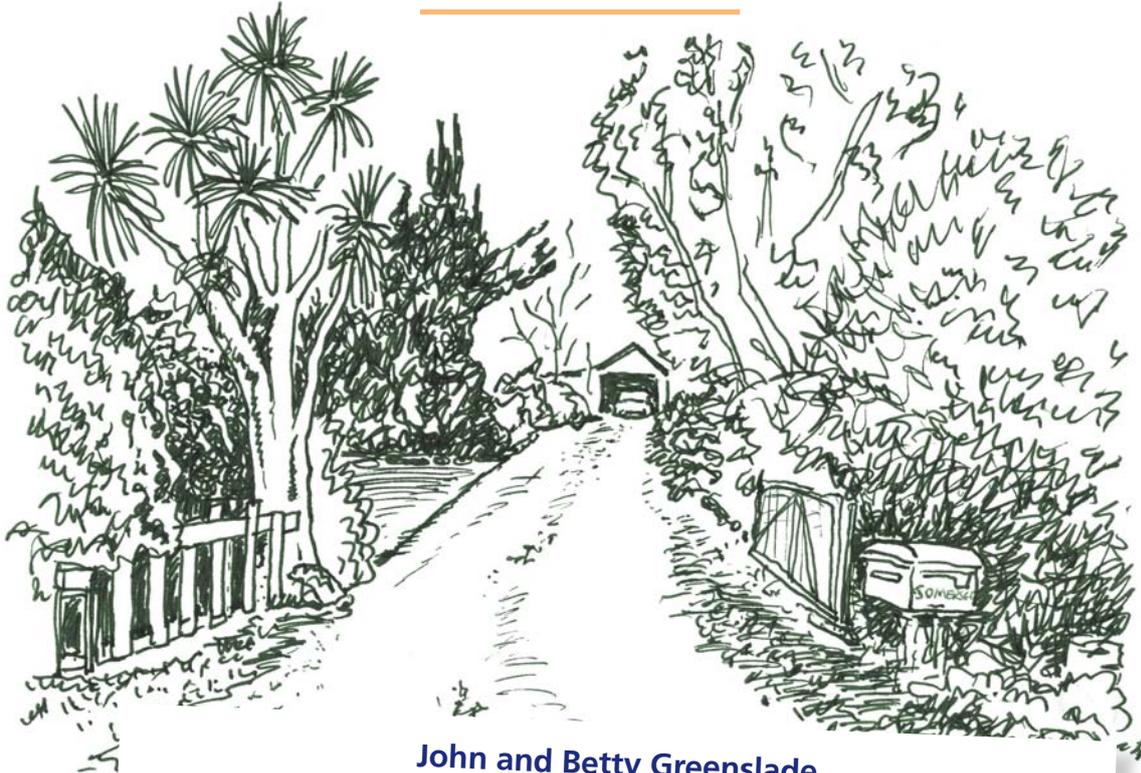


CASE STUDY 11



John and Betty Greenslade,
Somerset, RD8, Ashburton

John and Betty have done a lot of work over the last 30 years to develop the productivity and environmental integrity of their farm



Key facts

Farm size and type: The original farm, bought by John's grandfather in the early 1900s, was 228ha, which has now been expanded to 345ha of which 323ha is effective. The farm is in the Foothills zone of the Canterbury Plains.

Production focus: The main focus is sheep production, with some deer and cattle and winter-feed crops.

Soil type and topography: The soil is Ruapuna stony silt loam. A lot of effort has been put into clearing stones on the farm, work that has been ongoing for the last 100 years with old rock cairns evident. The property is flat.

Climate: Average annual rainfall is about 900mm, from the farm records kept since 1972. Temperature conditions range from very cold in winter to quite hot in summer.

Water: Water is piped to the farm through the Montalto water scheme, which is sourced out of the Hinds River. This provides both domestic and stock water. They are rated by Ashburton District Council for this. This is presently an on-demand scheme with no restrictions on use. One of the disadvan-

changed in the community during the 1980s with closure of the Montalto school and the effects of Rogernomics. The more recent social impact of dairy conversions in Canterbury hasn't reached their community as yet.

John has been a Farm Forestry Association member for the last four or five years and is now on the committee that is planning for the 2006 national conference. With his son now working on the farm, John has more freedom to be involved in things like this.

Main climate features and challenges:

Drought, snow and wind are the biggest climatic challenges, in that order.

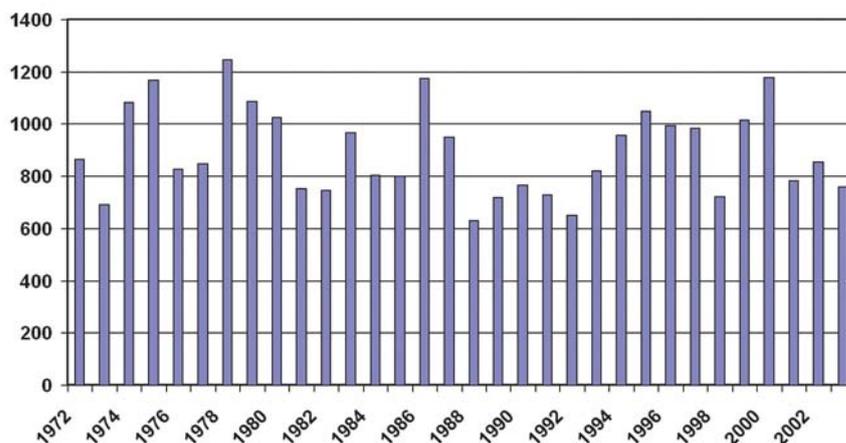
Dry, nor'west conditions: Strong nor'westers can be a challenge at lambing. They used to get some rain with nor'westers but they have tended to be drier over the last 30 years. When they get the dry nor'westers they know that conditions will become dry very quickly.

Snow: Snow brings a big stress factor. It is hard work, dealing with broken fences, stock everywhere and broken tree branches.

Cold, southwest winds: These can be linked to snow. They provide a challenge at lambing, which starts around mid September. They shear twice a year, in January and July. They've found July weather to be pretty good in recent years.

Winters were a lot harder in the 1970s, with more frosts.

Somerset Annual Rainfall, 1972 to 2003



tages with this is that there is no pressure on water users to maintain their pipes and to ensure that the water is being used efficiently.

Social: John and Betty have always worked as a team on the farm. Their children were always part of the farm and their son is now working towards taking it over. Things



Historical development and influence of climate and weather extremes

Period

Production focus and major changes Climate and weather effects

Pre 1960s

There was more browntop in the pasture, paddocks were a lot larger (about 20ha, which is four times the current paddock size), and the stocking rate was about half the present level. In the late 1950s and 1960s the farm was able to support John's grandparents, another married couple, and a single farm worker. They made a good living.

There was a big snowfall in 1945.

1960s

There were all Romney ewes, and all-grass farming (no cropping). John took over the running of the farm in 1965 and he and Betty have owned it since the late 1970s.

1970s

They changed to Coopworth ewes. Tree planting for shelter and shade was begun at this time with support from the former Catchment Board. Paddock sizes were reduced and stocking rate was doubled, with better use made of pasture. These changes were made over about a 10-year period.

In early August 1973 there was heavy snow, about 70cm. There have been other times of snow since, in August 1975, July 1976 and in 1992. Snowfalls at lambing (September) have occurred in 1977, 1983 and 2003.

1980s

Direct drilling of pasture began in 1982 and is still being done. Tree planting was ongoing.

Droughts in the late 1970s and the 1980s influenced changes in their farm management policy, although they had already been implementing changes before that time. With the effects of Rogernomics they also had to restructure their loan with the Rural Bank to keep going.

There was flooding in March 1986 with children drowning at Peel Forest. The farm was protected by stopbanks.

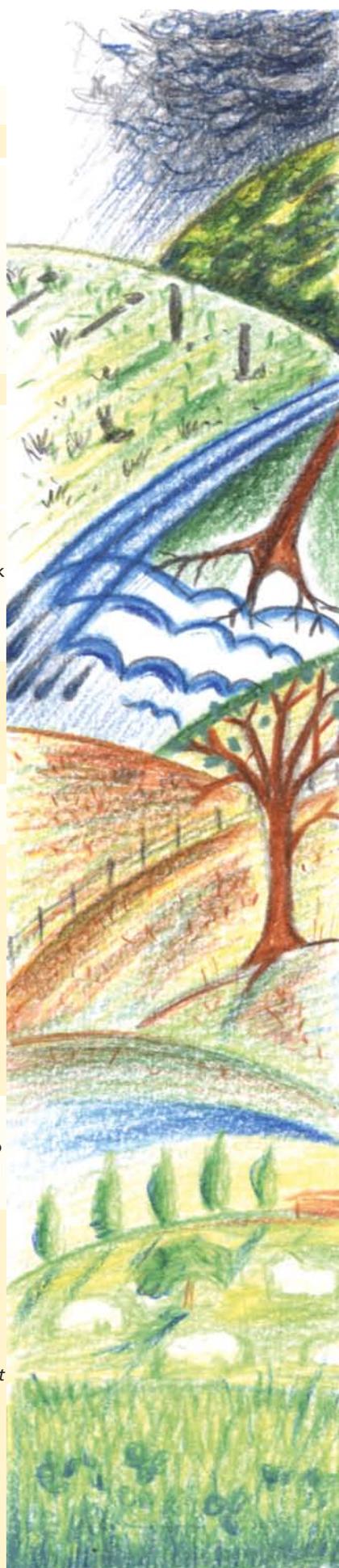
1990s to present

In the 1990s they crossbred their ewes and moved to composite ewes in the late 1990s. Tree planting and maintenance of existing shelter is ongoing.

By the time of the 1997/98 drought they had a well-developed strategy in place and so were more able to cope than in the past. Surplus stock were sold, however, there is always an ongoing effect on lambs after a drought.

Strong winds have caused tree damage, most recently in November, December 1997 and September 2002.

Over the last five years they have been able to manage drought even better than in the past. Most people build up a store of silage now, its advantage being that it lasts longer than hay.



Adaptations to develop the resilience of the farm

John and Betty have done a lot of work over the last 30 years to develop the productivity and environmental integrity of their farm and improve its resilience to the extremes of the Canterbury climate. This work was reflected early in 2004 through the Ballance Farm Environment Awards, for which they were supreme winners in Canterbury.

They began with planting shelter along all fence-lines on the property, initially focusing on protection against the hot, dry nor'westers and cold southerlies. This work is about two thirds complete, with the focus now towards intermediate shelter. Changing the sheep breed over time has been important, with a hardier mixture now that also gives a good lambing percentage. Direct drilling of pasture began in 1982, influenced by a succession of dry years in the late 1970s. The focus has been towards more drought tolerant pasture species. The other important strategies are the build up of supplementary feed, including contracting a neighbour now to produce it, and storing of silage.

The ongoing planting of shelter trees, continuing improvements in pasture and a planned shift to more trading stock are the main strategies for the future. Water is not limiting at present, although can be short during drought. If the current water supply were to become less reliable they have few options.

Forestry/trees: There is a small 6ha woodlot on the recently purchased block. The principal focus with trees has been planting for shelter and shade, to support the predominant land use which is grazing stock. John wanted to get away from pines, which he experimented with initially, and

has tried a range of species. Over time he has identified a number of species that will withstand dry conditions a lot better.

With the main shelter in place, John is now planning to develop intermediate shelter plantings, possibly with low-growing native species, including flax. The aim is to have all fence lines in some form of shelter or shade trees.

Benefits: The biggest benefits are improved animal health, with less stress on the animals, and much fewer lamb losses. The benefit of shelter is greatest in dry conditions, with grass still growing near the trees as a result of better moisture retention.

Information/support: Initially they learnt by trial and error. In the late 1970s and early 1980s they benefited from a scheme with the former South Canterbury Catchment Board which provided grants on a 50:50 cost sharing basis for fencing and trees.

Constraints: There are no real constraints, aside from the cost factor.

The main focus is sheep production.



The ongoing planting of shelter trees, continuing improvements in pasture and a planned shift to more trading stock are the main strategies for the future.





When conditions get really dry they are able to put their stock on the race banks.

Water: Water is reticulated to all of the paddocks with the aim of having two troughs per paddock. The system is pretty much at its limit now. Low water pressure can be a problem during a drought. One advantage they have is that the Rangitata Diversion Race runs through their farm (including a small hydro plant owned by Trustpower). When conditions get really dry they are able to put their stock on the race banks.

The catchment for their water supply is on farmland in the foothills, and so is potentially vulnerable to drier conditions. The current system is pretty much at its limit, although wastage can occur on some farms with an unrestricted water supply. There aren't any options other than this scheme, so it could be a major issue in the future if water was in short supply.

Soil: They do annual soil testing on selected paddocks and work closely with their fertiliser company to maintain fertility levels. A lot of work has gone into removing stones from the soil.

Pasture management: Direct drilling of pasture is the main strategy that they

developed, which goes hand in hand with their shelter planting. They use A1 ryegrass species and are experimenting with chicory and plantain.

Stock management: Their principal income is from sheep but, with some deer and cattle, they have some diversity to help buffer the extremes. With a higher stocking rate there is more of a stress factor but this is compensated for by the various strategies that they've implemented on farm and the returns they get. Their ability to raise their lambing percentage is really a consequence of everything they've done on the farm. There is no single factor.

At present they are looking to implement a move to more trading stock and less capital (breeding) stock. This will give even more flexibility in drought periods.

They provide stock to four different companies (Canterbury Meat Packers, Alliance, 5-Star Beef, and PPCS for the deer) and all have similar Quality Assurance systems which are focused on the whole management system.

Some deer and cattle provide diversity to help buffer the extremes.



Meso connections

They have good interactions with their neighbours, and aren't yet feeling the impact of changes that are taking place down country. A dairy farmer has recently bought a runoff up the road and is thinking of putting in a well, which could be a cause for concern. In general, the Foothill country (defined by State Highway 72) is presently considered to be OK with regards to water. John's brother, who is down country, is being affected by the pumping of groundwater by dairy farmers.

