

Repairing the land

People investing in a better place

Forecast of change for the better



Trees and permanent pastures on sloping lands which were formerly cultivated has helped return "Wessling" to a more sustainable production enterprise.



Forest Hill farmer Donella Van Der Est with a 3 year old forest gum revegetation site beside Laidley Creek.



Natural regeneration on a property east of Tenthill.

In 1996 Laidley Shire Councillor Graham Moon saw the challenge of changing land ownership as an opportunity for a positive outcome.

"With increasing population pressures, particularly in the south-east corner, we are likely to see more of our uplands being managed by people who may value the area more as a rural retreat than for (just) its agricultural production. Whichever way it goes we need to be able to demonstrate practical and cost effective ways of avoiding further degradation and 'rejuvenating' the land as a sustainable, attractive and productive water supply catchment."

– from Landcare Stories from the Lockyer Valley, by Trudy Townson

This is evident in many properties around the Lockyer catchment. Like old inner city houses that people have restored to former glory, in rural areas there are landholders – some from families of many generations in the district, others new to the district – who are renovating their lands.



Dam good idea: At the bottom of the Grubb property water is collected in a small dam which provides excellent habitat for plants and animals.

Renovation over the years

Location:	Property Size:	Landuse:
Ma Ma Creek	160ha	Dairy

Case study 1

Renovating the land has been a part of some landholders' activities in the Lockyer Valley over many years. In 1996, former project officer with the Lockyer Watershed Management Association, Trudy Townson, wrote an article describing the renovation of the property "Hillside" in the Ma Ma Creek catchment over the previous decades.

This story shows that renovation of the land is not a new concept, the challenge has been to get more widespread acceptance of this responsibility.

The Hillside Property

"Hillside" commands a beautiful rural outlook over the picturesque Ma Ma Creek valley. It's only about two kilometres west of the Ma Ma Creek village with its historic general store, garage, school, churches and a modern community hall.

Small properties were first selected in the late 1800s in this district. By the early 1900s most of the lower, sloping, rich scrub land had been cleared, stumped and cultivated and was growing crops of maize, sweet potatoes, cotton and fodder crops for cattle. Dairying became the main enterprise and, until the 1950s, there were over twenty small farms each of about sixty-five hectares with thirty to forty dairy cows supplying cream to the Grantham Butter Factory. Today there are only three dairy farms left in the Ma Ma district. "Hillside" is one of them. It is now made up of three small properties from the past – an area of just over 160 hectares.

Landcare on "Hillside":

When these properties were purchased in 1958 about 142 hectares had been used by their previous owners for annual cropping. Many of the cultivated paddocks had already lost much of their originally fertile topsoil to erosion. With the luxury of more land, "Hillside" could afford to rotate the cultivation paddocks allowing them to lie fallow under grass every two to three years. About forty hectares of winter grazing crops and twenty-four hectares of summer grazing crops were grown each year for the 100 plus dairy herd.

This was beneficial to the land but "Hillside" was still losing too much soil. A lot of costly tractor power was being used to grow progressively poorer crops and soil was still being washed off the property and silting up many of the stock water dams.

In 1978, a fifty-six hectare block was purchased about seven kilometres away in the adjoining Flagstone Creek valley. This had about forty hectares of deep alluvial flats with a supply of underground irrigation water.

After establishing a drainage, strip cropping and irrigation system, this block provided the opportunity to grow high yielding fodder, grain and hay crops for feeding the dairy herd and at the same time helping to reduce soil erosion and fertility decline.

Since 1985 all the paddocks previously used for cultivated cropping have been established with improved pastures. Species grown include Green, Gatton and Bambatsi Panic; Callide and Katambora Rhodes grass (*Chloris gayana*) and Purple Pigeon grasses (*Setaria spp.*). These varieties were selected to suit the various soils and conditions.

The "Hillside" life today

Now there is very little soil erosion on the property and the dams are not filling with silt. Although there are actually fewer dairy cows, total milk production has almost doubled. Production now averages eighteen to twenty litres per cow per day from ninety milkers, with top cows producing thirty litres per day. Changes in farming operations have provided opportunities for improved breeding, feeding, land and stock management practices.

Hills grassed plus some new trees

Case study 2

Property Owner:	Location:	Property Size:	Landuse:
John Hudson	Ropely	116ha	Cattle grazing



Ground covered despite dry: Well maintained groundcover on "Wessling" is important for protecting the soil resource.

In many places within the Lockyer catchment, past land use practices have caused severe soil erosion and degradation. This is particularly evident on sloping lands of the Lockyer landscape, however some landholders have been restoring these lands to more sustainable production enterprises with considerable success. The "Wessling" story is an example of one such success.

The "Wessling" property consists of alluvial flats along a creek bed with intermittent flow, flanked by sloping lands which formerly supported ironbarks, brigalow (*Acacia harpophylla*) and scrub species. When John Hudson purchased the 116 hectare "Wessling" property in the Ropely area in 1974 it had severely eroded hillsides after years of being used as a dairy farm and, prior to that, growing crops such as maize, sweet potato and even cotton. Since purchasing the property, John has had an ongoing program of restoring and protecting the land from erosion.

Restoring the land for production

Initially John set about developing an overall land conservation plan in conjunction with the Queensland Department of Primary Industries (DPI) officers. The plan covered:

- controlling runoff with good groundcover
- using land within its capability
- installing a system of contour diversion banks that would lessen erosion and feed water into dams.

Only the lower sloping or level deeper soil areas have been cultivated for cropping. The steeper eroded or erosion prone lands are managed for pasture. Existing tree cover is maintained and in some areas has been increased.

Early pasture improvement included plantings of green panic (*Panicum maximum var. trichoglume*), and later Gatton panic (*Panicum maximum va coloratumt*) with siratro (*Macroptilium atropurpureum*) and lucerneas legume components. The legume components have proved difficult to maintain.

The diversion banks have been successful in safely delivering water to the dams. However, a challenge in the scrub soil types has been that some of the dams have not been very successful in holding water.

The flatter alluvial areas have been managed on an interchanging basis of cropping and pasture. Sloping areas with particularly serious erosion were restored using a program of pasture, leucaena (*Leucaena leucocephala*) and tree establishment.

Studies have been done comparing pasture growth from areas with and without leucaena. Areas with leucaena were found to have improved pasture growth. Some stakeholders are concerned, however, that leucaena may have the potential to become a weed in the future.

Two forestry plots have been established on 'Wessling'. One plot was established in the mid eighties in a very eroded upland paddock. The area was planted with 500 trees and stock completely excluded for five years. This allowed trees, leucaena and pasture to establish. The other forestry plot of three hectares was established by the DPI Hardwood trials program in the late 1990s. A range of species was planted, with the most successful being spotted gum (*Corymbia citriodora ssp. variegata*) and Chinchilla white gum (*Eucalyptus argophloia*). The key to establishment success and early growth was weed control to ensure that the young seedlings had access to any available water.

After planting, stock was excluded from the site to facilitate establishment of the trees. The paddock now forms part of the total grazing resource.



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John's observation is that the amount of grazing under the young trees (principally green panic pasture which has some shade tolerance) is comparable to that in the open paddock. However, as the trees grow, it is expected that grass production will drop unless tree numbers are reduced.

Shade and windbreak plantings have been a part of the program on "Wessling" since the early eighties. Species such as spotted gum, Chinchilla white gum and river red gum (*Eucalyptus camaldulensis*) have proved successful.

John's key strategies are to:

- Maintain a good groundcover, and only graze pastures down to ten to fifteen centimetres in height
- Return sloping areas to pasture from cultivation
- Undertake tree planting for shade, diversification and to improve soil condition
- Use legumes to increase soil fertility