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Whole-farm planning : success at Wilgi Creek

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Photos: Kevin Shanhun

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Ian and Bev Lynch own Wilgi Creek, a 376 ha mixed farming property at West Mount Barker in the 700 mm rainfall zone.

In 1983, they started a whole-farm plan to overcome the problems of declining production caused by waterlogging (their biggest problem), salinity and deterioration of the remnant native vegetation.

Today, their property is an example of a successful, whole-farm land conservation plan based on agroforestry, timber production, water harvesting and improved pastures.

More than 80,000 trees have been planted by hand on the property. The area planted is equivalent to 11 per cent of the total area of Wilgi Creek and, when combined with existing remnant vegetation, adds up to 18 per cent of the land under trees. The target is 20 per cent.

To achieve these results, Ian and Bev Lynch set aside a minimum of 5 per cent of gross farm income each year for expenditure on trees and soil conservation earthworks.

Although the total area under pasture on Wilgi Creek has been reduced, stock carrying capacity has not.

Improved perennial pastures, together with additional shade and shelter benefits, have allowed stocking rates to be maintained at 11.3 dry sheep equivalents per hectare over the entire property.

Tasmanian bluegums were planted beside seepage interceptor drains in 1989.

Improved perennial pasture species have been planted between the many thousands of trees on Wilgi Creek. These eucalypts were planted in 1985.

How it all began

When Ian and Bev Lynch visited Victoria in 1978 they were impressed by the way trees were being harvested for timber production. At the same time, tree seedlings were being replanted on those harvested areas to form the basis for future timber production.

In 1983, the Lynchs' decided to spend a small legacy to fence out and plant trees on an area showing signs of salinity on their property.

After good site preparation, which included ripping and weed control, some 1,600 eucalypts and 700 *Pinus radiata* seedlings were planted by hand. The seedlings grew rapidly, and success seemed assured. Not so. Thousands upon thousands of wingless grasshoppers descended on the succulent new seedling growth and quickly devoured and destroyed all but 50 pine seedlings.

Having come to terms with the loss of most of the 1983 plantings, Ian and Bev Lynch replanted more seedlings in 1984. This time they controlled the wingless grasshoppers from very early in spring.

The early detection of newly emerged nymphs and subsequent control of wingless grasshoppers within three weeks of emergence is an integral part of successful tree establishment, and it worked.

Whole-farm planning

When discussing the events that most influenced the development of Wilgi Creek as it is today, Ian and Bev Lynch emphasised the importance of considering the whole farm, and of developing a plan which could be implemented successfully over time.

"The plan must contain goals which can be achieved. At any given time within the overall plan, you need to know where you are. If you do not know where you are, how do you know when you have arrived?", they said.

Farm planning course

In 1985, the West Mount Barker Land Conservation District Committee (of which Bev Lynch was inaugural secretary), organised a farm planning course for local landholders. The

Seepage interceptor drains help reduce waterlogging downslope and provide good quality water to large dams to water livestock and a productive cherry orchard.

The planted trees with perennial grasses between them provide good shelter and feed for sheep.

course was run by officers from the Department of Agriculture in Albany and proved to be highly successful.

Topics included the importance of farming according to soil types, soil and water conservation, drainage and protection of remnant vegetation.

Agroforestry

Armed with their 'new' farm plan, the Lynchs decided to tackle another problem site affected by rising water-tables.

This 13 ha site was at the lower end of a 600 ha sub-catchment. Group discussions on site with officers from the Departments of Agriculture, and Conservation and Land Management, resulted in plans for an agroforestry project.

The aims of the project were to:

- Demonstrate three types of seepage interceptor drains to alleviate waterlogging.
- Use drain spacings compatible with farm machinery.
- Plant trees above and below seepage interceptor drains to help remove perched water from the upper soil profile.
- Plant improved pasture species for better cattle and sheep production.

Drains were constructed on a grade of 0.4 per cent in autumn 1985. After good site preparation, 9,000 trees were planted that winter.

In 1985 and 1986, oats were sown for a hay crop between the trees. Perennial rye grasses and phalaris were planted in 1987.

Livestock were excluded from the area until after hay cutting in 1988. By that time the trees had grown enough so that, with controlled grazing, stock could graze perennial pastures without damaging the trees.

The benefits of the agroforestry project are now being realised. Shelter under the trees, along with improved pastures, makes this an ideal area in which to run maiden Merino ewes during lambing. During 1990, maiden Merino ewes at Wilgi Creek achieved a 79 per cent lambing.

In 1986, Ian and Bev Lynch helped an adjoining neighbour upslope of their agroforestry project to install seepage interceptor drains. Once completed, and again after good site preparation, 10,000 trees were planted next to the main drainage line. Another 10,000 trees were planted on the Lynchs' property that year.

Some of the Lynchs' tips for success

- Get expert help to draw up a whole-farm plan to provide the basis for soil and water conservation strategies.
- Be aware of the location of your farm in the catchment and the implications of land conservation strategies on other farms in that catchment.
- Plan for profitable, permanent production.
- Do not expect financial support from others.
- Commit yourself to the plan.

Ian and Bev Lynch in one of the plantations on their farm. Photo: Greening Australia.

Water harvesting

Seepage interceptor drains were planned and surveyed by the Department of Agriculture on the upper slopes of the farm.

The grader-built drains were designed to protect the steeper slopes from the risk of erosion during cropping, to reduce the loss of production from waterlogging, and to convey safely this good quality water to large dams for storage.

Some of this stored water is used to irrigate a highly productive cherry orchard. The two-hectare orchard was established in 1980, and in its sixth year had a gross return of $45,000.

Surplus water ensures that adequate supplies are available for livestock during dry years.

Improved production and greater reserves of quality water than they had in the past have convinced Ian and Bev Lynch of the benefits of this type of drainage.

More trees

From 1988 to 1990, another 49,000 eucalyptus trees suitable for wood chipping and timber production were planted on Wilgi Creek.The eucalypt species grown include: *E. globulus* (Tasmanian bluegum), *E. saligna* (Sydney bluegum), *E. maculata* (spotted gum), *E. muelleriana* (yellow stringybark), *E. camaldulensis* (river red gum), *E. botryoides* (false mahogany) and *E. grandis* (rose gum).

About 25 species of eucalypts have been planted. Electric fencing has been used extensively to exclude livestock.

The plan is to harvest the trees in the future, with the exception of those needed for shade, shelter and soil conservation purposes. Species such as *E. globulus* should coppice and be suitable for subsequent reharvesting. ❑

WILGI CREEK AWARDS

1991 - John Deere, Gallagher Power Fence Systems, Elders Pastoral - Winner, Western Australian Landcare Manager of the Year Award (for excellence in land conservation)

1989 - Elders Weekly, Regional Winner, Land Manager Competition

1988 - Greening Australia, John Tonkin Tree Award (for contributions to tree planting and practices)

1987 - Greening Australia, Merit Award

The conservation and production results have been a catalyst to many other landholders in the region to tackle land degradation problems, particularly by planting trees.