

“

These biorich plantations feature locally indigenous or exotic timber trees that are included within the structure of biologically rich forests or woodlands.

”



Farm foresters (from left) Mark Feltrin, Anthony Dufty, Ian Penna and Phil Kinghorn with a two-year-old silver wattle at the ImLal biorich plantation site in 2012.

Biorich plantations – putting the

When you talk about timber plantations with farmers the first thing they often think about is large areas of pines or blue gums spread over farmland. Plantings designed for environmental values aren't always popular either because they can take up commercially valuable land. So how can Landcarers shift these perceptions about the consequences of putting more trees back into agricultural land?

The Ballarat Region Treegrowers (BRT) is promoting the concept of biorich plantations as a bridge between forestry and Landcare plantings to deliver both financial and environmental benefits.

BRT is the local branch of Australian Forest Growers, which represents Australian private forestry interests. It coined the term biorich plantation to represent the kind of layered, diverse forest cover that could be created by applying the *Blueprint for Sustainability Score Sheet* for Landcare plantings developed by Teesdale nurseryman Stephen Murphy.

Design principles for Landcare plantings

Stephen Murphy developed the score sheet index during the 1990s through his nursery and tree planting work. The score sheet is a guiding blueprint.

Ten design principles are grouped to address four issues important to the long-term ecological value of the plantings: diversity; structure; species survival; and, location. The physical and biological characteristics of the planting are weighted according to the points available for each design principle. The higher the score, the more a landholder's planting is considered to have ecological value and survivability.

BRT worked with Stephen Murphy to publish his ideas in a book – *Recreating the Country*, released in 2009. The book examines how commercial wood production might be integrated into the planning framework.

These biorich plantations feature locally indigenous or exotic timber trees that are included within the structure of biologically rich forests or woodlands. The plantations more closely resemble native forests or woodlands than commercial wood plantations.

Biorich plantations align with the concept of analogue forestry that was developed in Sri Lanka by modifying traditional village gardens. The originators of analogue forestry wanted to tackle the social and environmental problems resulting from exploitative land management, including

shifting cultivation and industrial style agriculture using monocultures.

The analogue forestry model recognises the value of lost ecosystems, restores productive capacity to the land, brings in genetic diversity, establishes protective vegetation layers and gives local people more control over their way of life and natural resources – especially food and building materials.

Model plantation at Lal Lal

BRT was keen to put these ideas into practice by establishing a model biorich plantation. Imreys Minerals Australia provided 10 hectares of land in the buffer zone around an old clay mine pit near the town of Lal Lal, south-east of Ballarat.

A Caring for our Country grant, along with input from Central Highlands Water, Australian Forest Growers and BRT members saw local volunteers plant the first five-hectare site in 2010, and launch the ImLal Biorich Demonstration Project. The second five-hectare site was established in 2011 with further replanting and direct seeding in 2012.

Both sites contain a diverse mix of species mainly endemic to the area, with as many layers as possible – grasses and shrubs through to larger understorey and canopy



A corner of the ImLal south site demonstrating species diversity: cassinia, wattle and eucalypts with remnant roadside woodland in the background.

theory into practice

By Ian Penna and Gib Wettenhall

trees. Plant species were clumped to help pollination and create vegetation layers and natural regeneration of local species is encouraged. Weed spraying, thinning and possibly grazing and fire will form part of the ongoing management.

The sites contain a proportion of commercial timber trees in different layouts. The first site has 12 native forestry species in large clumps along an access track. At the second site, forestry trees are in strips along, and branching off, the access track. They will be managed through pruning and thinning to produce fuel wood after a few years, then good quality sawlogs in the long term.

Monitoring directs management

Monitoring the plantation's growth and the changing fauna helps understand the changing relationships between the soil, water, plants and animals, and acts as a means of directing management activities. Bird surveys have been conducted through the buffer zone and plantation sites with a total of 60 species having been observed so far.

Biorich plantations open up new ways of creating healthy and productive rural landscapes. An important challenge is to develop ideas for integrating commercial products other than timber into the

concept. This might mean exploiting the grassland or understorey layer for fodder or bush tucker, or designing forest cover to favour different livestock species.

The ImLal Biorich Plantation Project is still in its early stages. We hope it will demonstrate that holistically combined native and exotic species to achieve both conservation and commercial goals could help make rural communities and landscapes more economically and environmentally resilient.

BRT has been discussing the potential for establishing further biorich plantations in the Ballarat area with other organisations and we are seeking funding for a film on land restoration and analogue forestry.

Ian Penna is secretary and Gib Wettenhall is treasurer of the Ballarat Region Treegrowers. For further information visit the biorich plantation website at www.biorichplantations.com/



Tanya Loos leading an early bird survey in the first biorich plantation site.