



Birds need a minimum of 10–20 hectares of vegetation with a dense understorey to reoccupy an area, and perhaps 100 hectares to settle and breed.

# Birding Australia

Research in the Western Australian wheatbelt has shown that landholders must become strategic about revegetation before it's too late to save the birds.

**Brad Collis reports.**

**F**rom town to town, and farm to farm, David Freudenberger travels Australia's hinterland: a determined evangelist. He carries a ritualistic wooden case containing tiny samples of Australia's vanishing soul.

He displays the preserved remains of wagtails, fantails, wrens, thornbills, whistlers, and honeyeaters: little woodland songbirds whose dawn chorus once roused the towns, suburbs and farms of past generations.

But an estimated 90–95% of Australia's woodlands are gone, and Freudenberger's sobering message is that despite the good intentions, Australia's revegetation effort in recent years is a long way short of what is needed to sustain the remnant populations of these species.

'In 1962 the American ecologist Rachel Carson sounded the environmental wake-up alarm when she wrote *Silent Spring*, a

book about the absence of birdsong in the landscape because of the over-use of pesticides. Well we're creating a silent spring through the over application of the bulldozer and the sheep and cow,' says Freudenberger, a researcher with CSIRO Sustainable Ecosystems.

Freudenberger is working with Greening Australia on an ambitious new program to bring the small woodlands birds back into the Australian landscape, while there is still time.

The 'rebirding' program is expected to lift the national revegetation debate to a new level because research has shown that many so-called wildlife 'corridors' and the scattered patches of natural bush restored by farmers are generally far too small to have much effect.

'Unfortunately we can no longer afford willy-nilly "feel good" plantings,' Freudenberger says. 'We have to get

specific in terms of minimum area, maximum protection from grazing, and correct plant composition.

‘The main problem is that many replanted areas tend to be narrow corridors or small patches of a few hectares. But we’re discovering these birds need a minimum of 10–20 hectares for them to reoccupy an area, and perhaps up to 100 hectares to settle and breed.’

Freudenberger is the first to admit it’s a ‘big ask’ of landholders, but he’s quick to insist it’s not a figure plucked from the air.

‘I’m afraid if people want to argue they’ll have to argue with the birds, and decide if they want birds in their landscape,’ he says.

‘The purpose of my museum specimens is to show people what I’m talking about, to show what an eastern yellow robin looks like because you never see the woodland birds up close; they are just shadows flitting among the trees.’

The rebirding program has come from research started in the Western Australian wheatbelt in 1995. The work investigated the ecological impacts of over-clearing and sought ways to redress the issue.

CSIRO scientist, Rob Lambeck, came up with the concept of ‘focal species’ as an effective way to measure threatening processes such as clearing, loss of biological diversity, and dryland salinity. (See *Ecos* 100.)

Rather than try to monitor the health of a wide range of plants and animals, he sought to identify the species that were the most sensitive to particular threats.

Lambeck, and now Freudenberger, have observed that by identifying the so-called ‘focal species’ and responding to their needs it establishes an ecological umbrella under which the needs of many other species may be covered.

This is allowing a far more strategic approach to revegetation, particularly in the denuded wheatbelt of WA, where many farmers are becoming willing participants, particularly as the most common focal species are the small woodland birds.

Freudenberger says one of the reasons birds are useful bio-indicators is that they need a dense understorey, which requires revegetation to be far more comprehensive than just tree-planting.

‘We’ve found that woodland birds tend to drop out of the landscape once the bush



David Freudenberger is working with Greening Australia on an ambitious new program to bring small woodland birds back into the Australian landscape, while there is still time.



A resident of eastern and south-eastern Australian woodlands, the buff-rumped thornbill likes to nest in fallen limbs and at the base of trees.

becomes fragmented. They need a lot of three-dimensionality; trees and shrubs of varying height and density,’ he says.

‘So a rule of thumb we now use to define habitat quality is if you can see through it, it isn’t a very useful habitat. It usually means the understorey which these birds need for nesting, feeding and for protection from predators, has been grazed out.

‘The other value of birds is their ecosystem service. We think they provide free pest control and we think there’s a link between the presence of a diversity of woodland birds and the presence of healthy woodland trees.

‘I’ve been involved in a project near Holbrook north of Albury in which farmers have identified dieback as one of their main environmental problems. In



The superb fairy-wren is not terribly fussy about the shape or size of revegetated habitat.

looking for the underlying causes of dieback, it's been noticed there are no small woodland birds left to eat the sap-sucking insects that contribute to dieback.

'Why are there no birds that eat these insects? Because the understorey is missing because sheep graze continuously beneath the trees.'

This is already leading to a change in Greening Australia's tree-planting recommendations. 'Instead of planting trees, we're encouraging people to plant fences,' Freudenberger says.

'To plant a tree might cost \$1.50, but nature will do it for free if you provide the fence to keep out the livestock long enough for plants to regenerate.'

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Woodland birds are also charismatic. 'We'd have a much harder job getting people on side if we were using native cockroaches, even though I think native cockroaches are kinda cool,' Freudenberger says. 'But a red-capped robin flitting through the woodlands is a spectacular image.'

Freudenberger says the next stage of his research will be to try and quantify the area of native revegetation needed to attract particular birds.

'We've been finding that the most demanding species of birds, our focal species, tend to require really big patches: 100 hectares and more,' he says. 'They are simply not found in patches smaller than that and this is why nature reserves and state forests are so important.'

'But to ask farmers to create 100 hectares of native woodland is too much, so for the moment we're having to look for less sensitive species which require perhaps 10-20 hectares.'

'This area seems to be a general threshold and we've surveyed the Riverina, the western slopes of NSW, the WA wheatbelt and central NSW. Below this figure the bush seems incapable of providing woodland birds with the habitat diversity they need.'

Freudenberger's research and the rebirding programs being promoted by Greening Australia are emerging as important innovations in the overall landcare effort as results of the past decade's revegetation campaign points to the need for a more strategic approach in the future.

In the long run, Freudenberger is among a growing list of environmental and agricultural scientists who are saying that only a 'whole-of-landscape' research effort aimed at marrying farming systems with biodiversity will ever achieve sustainable change. He has no doubt that 'win-win' situations are possible.

'We have farmers already who are making more money by running fewer sheep because by redesigning their farm according to its variable landscape and habitats it has led to less, but more productive farmland,' he says.

'We know already we can de-intensify some farmed areas and intensify others. So the rebirding program is another step towards evolving Australian agriculture away from the alien system brought from the Northern Hemisphere.'



The hooded robin.

**Abstract:** Australia's revegetation efforts are insufficient to sustain remnant populations of small woodland birds. A Greening Australia program that aims to return birds to the landscape recognises that, to reoccupy an area, birds need a minimum of 10-20 hectares of native vegetation with a dense understorey, and perhaps 100 hectares to settle and breed. Birds are useful bio-indicators and they provide free pest control for woodland trees. The rebirding program is step towards evolving Australian agriculture away from the alien system brought from the Northern Hemisphere.

**Keywords:** birds, wildlife conservation, wildlife corridors, population decline revegetation.