Dr Rod Bird has been working for the Department for Primary Industries in the Hamilton region for more than thirty years, and in that time he has developed a strong interest in farm forestry and the contribution it can make to sustainable farming. This interview was conducted by Martin Mulligan in Hamilton in July 2006.

MM: There is clearly a lot of hope invested in the blue gum industry in this area. Do you think that hope is well founded?

RB: The blue gum industry arrived here in 1997, right at the end of an agricultural depression. There were low prices for wool and not too much better for beef and cattle. And, of course, the mineral sands industry was just starting. Some people say that the blue gum industry has been reviving the fortunes of the rural economies, but I think that is misleading. Certainly there has been a flow-on effect from this particular industry and it has created some enthusiasm and some work opportunities, but the revival has been more broadly based than that.

MM: You were a supporter of the blue gum industry when it began weren’t you?

RB: Yes, I supported it because I saw it as one way of farmers diversifying their production. But I assumed farmers would lease their land for blue gum plantations rather than sell it, because that would be more profitable than running sheep, even if wool prices revived. We are talking here about annual rentals they would have received of $100 to $400 per hectare—depending on the rainfall and the distance from the port and the actual site conditions. So this was a good income with no work required from the farmer. And the blue gum could have been part of a broader strategy to diversify farm production. However, many farmers decided to sell their land to the blue gum companies, and they, of course, are only interested in planting blue gums. So this has not led to the diversification I had hoped for.
MM: Before we go any further with this, let’s hear about your background and how you came to be interested in farm forestry.

RB: I did my PhD, at the University of Western Australia, on animal nutrition and when I finished that, in 1972, I came over to Hamilton to do some work on pasture research. I thought I would be here for about three years but I’m still here! For about fifteen years I worked on pasture production for beef cattle and, having grown up on a farm myself, I also had a good understanding of broader production systems and agricultural economics. Then, around 1980, I got interested in research on the benefit of more shelter, because this area was wet but it was also very windy, and I assumed that the loss of shelter had become a big problem.

MM: So this was from excessive clearing of native trees?

RB: Indeed it was. A lot of people think this area is characterized by treeless plains, but they weren’t actually treeless. They might have lacked eucalypts but they certainly had blackwoods, she-oaks and banksias on them; it’s just that people didn’t think of these as trees. Of course, it was never densely forested—it was basically open grassy woodlands interspersed with hundreds of swamps and lakes—but the native vegetation had largely been cleared by about 1900. Through the 1930s and 1940s, there were a lot of blue gum and sugar gum shelter belts put in and, with the European influence, a lot of cypress trees were planted.

MM: Why did people choose Cypress in particular? Was this for aesthetic or functional reasons?

RB: Functional reasons, I think. A lot of cypress came into Australia during the gold rushes, and I believe the Californian miners were partly responsible for that. They can create a dense shelter belt. But, of course, this does coincide with a stylized European view of what a nice dense tree belt should look like, so there is a mixture of function and aesthetics. Anyway, I first got interested in shelter belts and this led me into revegetation studies. And from about 1984 onwards, I broadened my interest into farm forestry. We started doing experiments on a whole range of tree species that might be grown on farms in this area. We set up demonstration sites that gave us a lot of information about the growth and survival characteristics of a whole range of species, and in the 1990s, we set up more intensive forestry projects on a number of farms, and all these plantings are still present as demonstration sites.

MM: I know you also have a strong personal interest in biodiversity. Does this also come into your professional work?

RB: Yes, it helps. It has certainly been my lifelong interest. Biodiversity and nature conservation, and how you can foster all of that on agricultural landscapes; that is still my personal and professional interest. There are ways of making farms more nature-friendly. I’m not convinced that this will do much for threatened or endangered species, for that may require much
larger blocks of vegetation of a specific type and management. However, it might make that work a bit easier.

**MM:** The story of what John and Cicely Fenton were able to do with their farm Lanark is quite well known, and we had an account of their story in an earlier edition of *Local-Global*. Is that an example of what you advocate?

**RB:** Yes, and Lanark is probably the best known example. John and Cicely started at a time when it definitely wasn’t fashionable, and they were regarded as rather eccentric. Some of the population would still describe this kind of work as eccentric, but much of the population has now caught up with what the Fentons were trying to do, and there have been others like the Fentons who have not had as much publicity. Even government departments have picked up some of the principles that drove people like John and Cicely. But has it become common? A lot of farmers around here now attempt to do some things with tree planting, but probably on a smaller scale. They certainly realize the benefit of providing vegetation, and some of them attempt to use farm forestry. But, in the end, it is not getting any easier to make a living from farming. The way out for many farmers seems to be to expand, and there is a reluctance to allocate much land into what might be regarded as non-productive use, even if there are clear long-term benefits in terms of productivity.

**MM:** Is the problem that you have to have a long-term plan and not expect short-term gains?

**RB:** Well that’s the perception. But one farmer in this district, Don Jowett, has demonstrated on one of his smaller properties that even when he put about 20-30 per cent of this land into trees he was making more money off the remaining land than he had been before he did it. He has said he was able to get better lambing percentages and get an advantage in getting his lambs onto the market before Christmas. And he put this down to a reduction in animal stress. Shelter provides a better climate for the animals, particularly in regard to cold stress related to wind and rain. If you reduce this stress you reduce the amount of energy the animals have to take in, in the form of food, just to maintain themselves. There is evidence for this from laboratory tests, but it is difficult to demonstrate in the field. Of course, the biggest problem with cold stress can come immediately after shearing, and there have been three of four times in this part of Victoria when a cold snap has resulted in more than 100,000 deaths in just one or two days. More shelter would reduce this problem. Bear in mind that a single ewe might cost $100 and it is very hard to build a flock up again.

**MM:** So you have now explained why you have been interested in farm forestry, and you said at the beginning that you were supporter of the blue gum industry when it began in 1997. Can we now return to the story of how that industry began?
RB: Back at that time the federal government had a strategy for reducing our dependency on imports of wood products, and so they set a goal of trebling the production of plantation timber nationally by 2020. For Victoria, the target set was 250,000 hectares of new plantation. Obviously small-scale farm forestry was not going to make such a target achievable. The best way was to excite the interest of big business. The government made it fairly attractive for big companies to invest in blue gum plantations in this area, and this attracted the interest of the Japanese firm Ogi.

MM: Was the target for increasing plantations related to a desire to reduce logging in old growth forests.

RB: No, not at all. It was purely an economic decision, as I see it now. Blue gums are the favourite timber for woodchips, and pine has largely replaced hardwoods in the building industry. So the plan was to increase plantations of blue gums and pine.

The blue gum plantation industry has been driven by tax concessions and probably could not survive without them. The investor can use the ‘twelve-month rule’ (now extended to become an ‘eighteen-month rule’), whereby an investment can be made in June (to minimize tax), but the money does not have to be spent until the end of the following year. The Managed Investment Scheme (MIS) is thus a tax-driven investment scheme in which prospectus companies can charge the client from $6,000 to $15,000 per hectare. The sum required to establish and manage a plantation is around $3,000 to $4,000 per hectare, leaving a balance of up to $6,000 per hectare profit (before tax) for the company that charges a client $9,000 per hectare. It is claimed that plantation companies use retained earnings from the investor’s contribution, pay tax on it and then use it to buy land. Farmers complain that the taxpayer-funded MIS has enabled forestry companies to outbid them on purchasing available land. Some people think that this kind of scheme amounts to an unfair handout to the investors and prospectus companies, funded by Australian taxpayers. On the other hand, it could also be said that the plantation industry has ‘farmed’ the city investors and taxpayers in general, effectively transferring some money from cities to the country.

MM: Did you think that a return on investment in ten years was realistic?

RB: For some sites it is probably still realistic, but in many cases it is going to be twelve or fifteen years before they can produce enough wood to harvest. Nevertheless, the investments started to flow and we have gone from virtually nothing in 1997 to 140,000 hectares of blue gum plantation in south-west Victoria in 2006. When it all started, I thought it would be good if farmers could put twenty to fifty hectares into such plantations but, unfortunately, most of it has come as whole farm takeovers.

MM: What sort of land do the blue gum companies want to use?

RB: They want land that has a deep profile, so they would like to see up to
eight metres without any solid rock and preferably with a shallow water table that the trees can reach quite quickly. And if you are in the business of planting trees you would be mad not to look for those things. But that’s the land that everyone wants. Another driving force is rainfall, and at the beginning they wanted areas with 700 millimetres annual fall. But these days it is more like 600 millimetres or 550 millimetres, because most of the available good land was taken up early. When the blue gum industry started, it was more profitable to lease land for plantations than to continue other forms of farming. Farmers in the region had been through five years of really bad times when they were effectively making no money at all. Suddenly, the prices for their land doubled and, even though they could gain a reliable income from leasing some of their land, many chose to sell. This meant that things didn’t turn out as I hoped, because I assumed that the blue gums could have been used as broad shelter belts while other forms of farming continued. But, in fact, the blue gums largely replaced other forms of farming.

**MM:** So you were disappointed that the blue gums did not encourage a broader understanding of the possibilities of farm forestry?

**RB:** Yes, I assumed that once people get used to having plantations they probably understand the industry better and may be more amenable to looking at using other species as well. We were pushing for the uptake of other species such as spotted gum, red-iron bark and she-oaks. But that has been very, very slow. The blue gum industry has helped to show people what is required to establish good weed control and good site selection, but they are not thinking beyond the blue gums.

**MM:** What happened with environmental impact studies when the expansion of blue gum plantations began?

**RB:** There were no environmental impact studies. There was a great rush to get the industry started, and you have to remember that there were about twenty companies involved in the early days, compared to just three or four now. So there was a bit of a Wild-West mentality in the early days. Some companies pushed fences out and filled in dams and, in the haste, there was some unfortunate clearing of vegetation and even the clearing of trees that had been planted through the Landcare program.

**MM:** Was there much discussion in the early days about the possible impacts on water tables?

**RB:** No, not really. That’s an interesting question because one of the values of plantation forestry is its ability to help combat salinity. The problem is that salinity is in the lower rainfall areas—500 to 700 millimetres—but the blue gum companies had no trouble getting land in the higher rainfall areas where salinity is not a problem. They started to target areas with 700 to 900 millimetres rain, and they just happen to be the areas where we don’t have any concerns about salinity, but we do have concerns about water tables.
Of course, the water tables are affected by irrigation used for purposes other than the blue gums, and the foresters argue that they should have as much right to the water as these other farmers. However, there was a paper put out by the Bureau of Rural Science in June 2004 which indicated that once you put more than twenty per cent of the landscape under plantations you run the risk of affecting stream flows. So that concerns farmers if they depend on streams for water and it concerns people worried about environmental flows. It’s a real concern for wetlands because most of the swamps around here have been drained, and now it seems that the remaining wetlands will be affected by the plantations. Between pines and blue gums, only about five per cent of the greater Green Triangle area has been taken up by plantations. But that five per cent is not equally or evenly distributed over the whole district. So there are parts of that landscape
that have more than 40 per cent tree cover, and that is where the impact on stream flows will mostly be felt.

**MM:** Did people assume that blue gums would be more benign in their impacts than pines because they are ‘native’ trees?

**RB:** Well I think most people understood that the blue gum is not a local tree. But there has been very little research done on how the local trees might be used; not on the scale of the blue gums anyway.

**MM:** Where did opposition to the blue gums come from in the early days?

**RB:** The opposition mainly came from people who just don’t like change. They didn’t like the idea of the farming they had grown up with changing to something else. Some said they would feel more hemmed in because they like living in the open plains. Then when the farms were sold, people started leaving small communities and people started to say there would not be enough people left to sustain church congregations, fire brigades or sports clubs. But, of course, the blue gum industry attracted its own workforce, and many of these people settled in the small communities, so that fear faded. There wasn’t much opposition on the basis of environmental concerns because no-one could foresee what would happen. The thing about the blue gum industry is that it has mobilized money out of the cities to revive rural economies at a difficult time and provided a boost to service industries. And that is before anything was harvested.

**MM:** Well that brings us to the cycle of this industry. What will happen when the harvesting begins?

**RB:** It’s still uncertain, but my fear is that the projected yields were probably double what they will be and that the price might also be less that what was projected. As we know, a lot of these plantings that are still going on are in sub-optimal areas of rainfall, so I doubt whether they are ever going to get much more than 100 cubic metres per hectare on that kind of land. The initial forecasts were for 200 to 400 cubic metres, but they will only get that on the top sites that have access to groundwater. Now you could get to the point where it is not economical to cart the harvested material from the low-rainfall areas. That’s the worst-case situation, but I do suspect that those sites might never be replanted. Furthermore, it will take several years to replenish the water tables if we get adequate rainfall. So I think most of the sites in the lower rainfall areas will eventually go back to pasture and crop. There will be less blue gum plantations in the future. Ironically, about 20 per cent of the land the blue gum companies purchased was never going to support an adequate crop, and so one of the companies is talking about doing biodiversity restoration work on some of its sites. Some areas will not have stock grazing on it for ten to fifteen years and that will allow some regrowth of vulnerable species. So there are some environmental pluses. Of course, there will be a lot of weeds as well, so it will take some work to get rid of them.
Another possibility—and one of the companies is looking into this—is to go to different species of eucalypts; that is, to actually conduct farm forestry for saw log (not chips) with spotted gum or sugar gum, which requires more intensive management—like early thinning and pruning for clearwood (sawlogs free of branch defects). That could happen in the second rotation, after the blue gums have been removed. It is a vague possibility. But if that doesn’t happen, I am almost certain the land will go back into agriculture. Even then the companies might not sell the land. It could be that one objective of some of the forestry companies anyway was land acquisition.

**MM:** There is not much chance of it going back to family farms is there?

**RB:** I don’t think so, unless, of course, it is just thrown open on the market and family concerns can buy it again. Maybe they can argue that things like stumps are an impediment leading to smaller land price. So maybe it will go back, but unfortunately agricultural businesses can’t run profitably on small acreages any more, so I suspect a lot of these farms will go into big syndicates. I guess we’ll find out in five to ten years.

I am hoping that where the blue gum industry does continue on the more favoured lands it will go to leasehold lands, so it will actually achieve objectives that we wanted in the first place, like integration into farming systems. Unfortunately, farmers didn’t take up that opportunity and put some pressure on the companies to work with them. They can actually put plenty of pressure on the companies because land is in short supply. So if farmers are awake to the possibilities, they could take that up those options and say, ‘Yes, we want you, but we want you on certain conditions’.

**MM:** Meanwhile, the blue gums will leave a legacy of reduced water tables.

**RB:** Yes, but that’s not a major concern for pasture production if we get adequate rainfall. Some farmers are worried about having to get rid of the stumps after the trees have been harvested. But that’s not a big problem either. These stumps don’t last. After four years you can kick them out with your boot. It’s just a matter of being patient if you don’t want to use heavy machinery, and then just gradually restoring the land for another use.

**MM:** It sounds as though it took a long time for environmental concerns about the blue gum industry to be raised.

**RB:** Well, as I said, that was because no-one really knew what was going to happen. And, even now, we don’t really know what the impacts on the water tables will be because we are also going through a long drought. But early concern was expressed about land clearing that was permitted under the industry regulations, and action was taken on that. Now you can see areas where the blue gums are planted around existing river red gums, so the initial complaints led to a more cautious approach.

**MM:** When the blue gum industry got started, many farmers were losing money and so they saw this as a way out. Another approach to income
security is to diversify production. Do you think that it is a good time to push the argument for diversification?

RB: Well, if you are going to run a successful farm in the long term you are just going to have to diversify. A complete reliance on sheep or beef cattle is difficult, and that’s one reason why cropping has come in. If, and when, the rainfall patterns change, we might see the end of a lot of that. We’ve had growing on raised beds, which has certainly alleviated some of the water logging problems. Maybe that’s something that can help people diversify, but it isn’t easy, of course, especially for small properties. A lot of the people who are in the farming business now are hobby farmers because they have another income to support their hobby farm.

Some people who bought into blue gums want to look beyond pulp, to look at firewood or thinning the plantations for saw logs. I don’t know how realistic the sawlog option is, however, because there are some uncertainties—and drought is the biggest uncertainty. We’ve established a research site just to look at the impact of converting woodchip plantations to saw logs. But the risks are that the trees will just flag when they encounter drought. The other thing is that the wood is not entirely suitable for a lot of purposes. Still, there are new techniques coming out in Western Australia, where a type of fibre board can be made from blue gum that can be used in the building industry. There is also scope for using blue gum for firewood, although it is less dense than sugar gum or river red gum wood.

MM: As well as a professional interest in farm forestry, I know you have a strong personal interest in biodiversity. What do you think the impact of the blue gum plantations will be for biodiversity in the region?

RB: Well, the blue gum plantations are much more friendly to a big suite of bird species than, for example, open agricultural grasslands. So they are good for conservation if you are looking at species other than grassland birds. And, of course, you could have a real boost for local wildlife if you can retain the remnant bushland alongside the blue gums. But you do that at the expense of the swamps because, as we discussed earlier, the blue gums appear to be reducing stream flows. So the results are mixed. Land-use planning is always going to be difficult. People don’t like bureaucracy and red tape, but you need some broader goals than just economic production.

Dr Rod Bird has a background in animal science, and he worked on beef cattle and pasture production research in Victoria from 1978 to 1985. Since 1982, he has worked on shelter effects on agricultural production, salinity, and issues related to farm forestry and biodiversity. He has specialized in the evaluation of species and management for the production of high-value clearwood from woodlots and timber belts that have been integrated into the farming system. He is one of the region’s foremost natural historians.