



CREATING A HISTORY OF THE AUSTRALIAN SEARCH FOR SUSTAINABLE LAND USE

*This book review was written in June 1993 as a way of beginning to expound my own views about this subject and in frustration at what I saw as the agricultural establishment trying to reinvent itself in the face of massive contradictions in its beliefs. As such it grew well beyond the normal length of a book review and for this reason perhaps was turned down for publication by both **Habitat**, the magazine of the Australian Conservation Foundation and the **Journal of Soil and Water Conservation**. In hindsight perhaps my anger with Barr and Cary's version of history was more about the frustration I felt about the lack of awareness of historical context in the permaculture and wider environmental movements about the search for sustainable land use and the fact that in referring others to sources I would have to point people to Barr and Cary. A good radical history is yet to be written.*



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My “uneducated” father taught me the adage that those with no knowledge of history are condemned to repeat it. For those involved in the search for sustainable land use in Australia, a history of that search is urgently needed so current and future action can avoid the mistakes of the past and build on genuine opportunities for progress, and avoid disasters.

Greening A Brown Land by Neil Barr and John Cary, (Macmillan 1992) is a timely contribution to illuminating that history and some of its lessons and will hopefully stimulate some vigorous debate on some of the issues raised. This critique is a contribution to that debate.

The book is divided into three parts dealing with pastoral farming, cropping and irrigation. It relies on extensive use of case study material, most of it from Victoria, reflecting the authors’ local knowledge.

The book is subtitled “An Australian Search For Sustainable Land Use”. Perhaps the subtitle should read ‘...search for sustainable agriculture’ since the authors do not in any substantial way deal with forestry. A forester colleague of mine, commenting favourably on *Greening A Brown Land*, suggested a similar book is needed in relation to the history of forestry.

Unfortunately the failure to address forestry in this book reinforces two deeply seated myths about trees in Australia:

- that they are marginal to our economic well being, and
- that forestry is not a major factor in the search for sustainable land use.

Nothing could be further from the truth.

Some of the issues in the search for sustainable pastoral farming are well presented in the book. In the first part, the open and fire cultivated nature of the Aboriginal landscape is dramatically described with quotes and photos. The subsequent decline of the native pastures, creation of the modern dense forests and the recreation of the grasslands via the sub clover and superphosphate revolution are documented. The emergence of salinity and acidification as more recent threats are covered in some detail.

However one of the major themes of the book is attacking the past, present and future role of trees in sustainable farming. This is a useful antidote to simplistic prescriptions to “plant trees”, but is a very one-sided perspective. I see this as expressing the reactionary view of the agricultural establishment to the emerging focus on trees as environmental and economic solutions.

IMPEDIMENTS TO FARM FORESTRY

I believe the failure to develop a culture of trees ('silviculture') in this country is one of the recurring themes of our land use history. The government requirements of selectors to clear their land and how such conditions arose is covered in *Greening A Brown Land*. However there is no substantial mention of another four important factors which account for the failure to develop tree based land uses and culture.

- 1 The anti-tree pastoral heritage which settled Australia had a long history of destroying forest economies (natural and human). Perhaps one of the most rapacious was "The Clearances" in the Scottish highlands which paved the way for wool production to feed the expanding English textile industry.
- 2 The aggressive monopolies developed by state forestry departments which consistently underpriced wood from public forests thus preventing by large measure the development of a healthy and diverse farm forestry sector.
- 3 The financing of rural enterprises based on a single seasonal cycle and the insidious effect of interest rates in undermining any long term land use involving trees.
- 4 Primitive tree establishment skills and technology available to landholders when compared with the technology of farming. (This is now being overcome by rural innovators.)

While the efforts to increase the use of trees have occurred continuously, I see three major periods of action. The first is focused in the 1890's, the second during the 1930's and early 40's, and the most recent having its roots in the 1970's and culminating in the current wave of interest and action. All three periods follow a general pattern of visionary thinkers and practical innovators followed by grass roots action and institutional response. Today the age of mature trees in our rural landscapes record these periods of tree planting. The interest in trees during these periods was part of a more general focus on sustainable land use issues and coincided with economic recession. This last fact provides an interesting case study on the relationship between recession and innovation.

Any analysis of our economic history will show that the harvesting of the native forest resource has been a major contributor, to Australia's status as a wealthy nation. More important, the development of the plantation softwood resource has been one of the great milestones in the providing of a more sustainable resource base. The recent doubling of the value of well managed conifer plantations (due in part to environmental controls on logging of old growth softwood forests in North America) highlights a global trend towards recognition of the real value of timber resources.

THE PLANTATION PINE INDUSTRY

The success of the southern Australian plantation pine industry had its roots in the first period of tree planting and was consolidated in the second. By the 1950's it was established enough to attract the government and corporate investment necessary to lay the foundation for the most economically valued forestry asset in Australia.

For all its faults, in common with other modern industrial monocultures, pine plantations stand up well as a sustainable land use in comparison with modern pastoral farming. The aerial patterns of these respective land uses are a dramatic visual symbol of that difference. Pine plantations are typically made up of land units defined by contour and ridge roads which highlight the natural landform. Pastoral farming on the other hand is still dominated by the grid pattern created by the antiquated technology of traditional heavy straight line fencing denying the biophysical potential of the land.

More importantly, I believe the processes necessary to shift from pioneer monoculture plantation to sustainable, high value forest are relatively simple. The technical and socioeconomic processes necessary to shift pastoral farming onto a sustainable footing are very complex.

Barr and Cary seek examples from the historical record showing the failure of farm forestry (the wattle tan bark plantations and particular pine plantations). I see examples of vision from the previous periods of action which were successful but led to no ongoing expansion of farm forestry.

THE SUGAR GUM STORY

Many examples come to mind but one will illustrate my point. Following the devastation of the forests by the gold rush and farm clearing, the early foresters husbanded the regrowth forests, enthusiastically planted arboreta and trial plantations and encouraged farm tree planting for shelter and wood production. One of the most widely planted and successful species was Sugar gum, a native of small areas of South Australia. Shelterbelts of Sugar gum were established on a massive scale across the open Western Victorian plains, much of it by direct seeding.

Despite being out of favour in the current fashion for planting local native species, these shelterbelts are the resource base for new farm forestry enterprises. In a climate of declining returns from pastoral farming, a new breed of farm saw millers have ignored the prejudice against the species and rediscovered the value of its timber using new portable mill technology to convert this perceived waste product into high value timber.

At Majorca in central Victoria, an original plantation of Sugar gum has evolved into a diverse native forest which continues to produce valuable timber despite the almost semi-arid nature of the climate. When the historic Maldon trestle railway bridge was restored there

were no Box or Ironbark trees large enough in the local native forests but the Majorca forest supplied Sugar gum suitable for the purpose.

These almost accidental returns from these plantations established by previous generations only highlight the general failure to develop any large scale and sophisticated farm forestry using Sugar gum or a range of other species with proven potential. This failure can be largely attributed to the factors mentioned previously and that peculiar human tendency to discount the value of anything common (a version of distant pastures always being greener).

FARM FORESTRY AND SALINITY

In the third part of *Greening A Brown Land* the authors reinforce their case against the use of trees as environmental solutions in what amounts to a misrepresentation of very recent history; that of the development of the Salinity Management Plan for the Shepparton Irrigation District during the 1980's.

The Australian Conservation Foundation submission to the draft plan confounded everyone involved. Instead of advocating saving this or that wetland or remnant roadside vegetation, it laid out the vision, and provided the evidence to support the concept of the Shepparton timber industry providing jobs and generating profits. It suggested 20% of the irrigation district planted to integrated farm forestry could be a cheaper solution than the massive drainage and pumping systems proposed in the draft plan.

Barr and Cary dismiss the Australian Conservation Foundation submission as one more example of city-based environmentalist obsession with trees as the answer to everything. Jason Alexandra, the author of the Australian Conservation Foundation submission is in fact a rural tree farmer and saw miller. The government convened a panel of experts to investigate the technical basis of using trees to reduce water tables and provide a net economic return. That panel could find no fundamental errors in the proposal. As a result there has been a major increase in agroforestry research for irrigation areas and a quiet but substantial change in the ongoing development of salinity management plans towards a greater acceptance of the role of trees.

CRISIS OF CONFIDENCE

Throughout the book, Barr and Cary demonstrate an apparently genuine concern for the farmer at the front line of the environmental and economic crisis, providing some very good material to show why farmers act the way they do and the problems they face in change. They also expose some of the failures of scientific research and particularly government extension but the overall picture painted is one of progressive evolution by slow steps towards more sustainable methods.

Within the politics of the sustainable land use debate I would naturally see myself as a radical, and Barr and Cary (based on this book) as conservatives. My disagreements over the past and potential role of trees is only one example of how the same historical evidence can be interpreted in a number of ways. *Greening A Brown Land* tends to reinforce the agricultural science establishment and the agro-industrial corporations as the source of solutions rather than problems.

In fact, the agricultural science establishment is suffering a severe crisis of confidence under the onslaught of:

- farmer and community distrust,
- new scientific work which undermines cherished dogmas, and
- the declining economic viability of agriculture due to relentless downward pressure on commodity prices in the global economy.

This crisis is never really laid out for the reader. It is not possible in this critique to deal with the range of issues behind this crisis but some points in relation to “alternative” agriculture and ecology can illustrate.

ALTERNATIVE AGRICULTURE

The authors make references, mainly in the second part of the book to the role of “alternative” agriculture, but so briefly that by implication, dismiss their importance in the search for sustainable agriculture. Several references are made to Yeomans’ Keyline farming perhaps because most of Yeomans’ ideas and developments have since been incorporated into mainstream agriculture. However, nowhere do they draw together any analysis of the Keyline system as a whole.

Alternative agriculture in Australia has developed since the 1940’s in an incredibly unfavourable social and economic environment. Barr and Cary, like many other mainstream commentators, point out the price premium which now accrues to Organic and Biodynamic produce but fail to analyse the myriad of economic, let alone other impediments which continue to stifle development of biological agriculture.

Organic and biodynamic farming involves building the biological wealth of the land. Inevitably much of this wealth remains internal to the natural economy of the farm, yielding no tax return to government or sales by agro-industrial corporations. Analysis by Ivan Illich¹, Vandana Shiva² and others show a characteristic pattern of industrial development where the invisible economies of indigenous people, peasants, women and rural communities are destroyed in the creation of centrally controlled visible economies. Similar powerful forces stifle redevelopment of these human and natural economies. However some economists have recognised that sustained contraction in the formal,

1 Illich, I. *Energy and Equity* 1974, *Vernacular Gender* 1985, and other books

2 Shiva, Vandana *Staying Alive: Women, Ecology and Development* Zed 1989.

visible economy leads to expansion of many informal and invisible economies which are inherently more efficient at using limited resources. Modern biological farming is one very important example of these efficient systems.

INNOVATORS

Practical farmers with vision and independent persistence both within and outside the biological farming movements are the real heroes of the search for sustainable agriculture in Australia. Bruce Milne (involved in the Potter Farmland Plan) and Bill Twigg (northern Victoria) are examples mentioned in this book. Despite the enormous credibility of these innovators, the agricultural establishment is deaf to their clear articulation of an underlying philosophy more radical than most environmentalists. Instead bits and pieces of their technical successes are highlighted for copying and enhancing the credibility of official recommendations. I see what Bill Twigg has achieved integrating perennial legumes with grain crops as an expression of permaculture principles while Bruce Milne has articulated the relevance of permaculture in the progressive evolution of “Helm View” toward sustainability.

VISIONARIES

The more well known thinkers and proponents of alternatives include Yeomans, Podolinsky, and Mollison. These men have led the fight against the agricultural establishment. I think the similarities of personality between these men is no accident. To survive in such a fight has taken enormous persistence, obsession, unwillingness to compromise and even arrogance. Marginalisation has been a consequence of the refusal to be co-opted by the establishment. Rather than seeking to lionise these people, I see personal stories revealing how the search for sustainable land use has been a struggle against systems and institutions which stand to lose power and influence. The personal tragedy for these leaders is that their very strength of character and genius makes it difficult for them to accept progressive evolution and incorporation of their ideas into the mainstream. Incorporation without acknowledgment is the only success that any dissidents have ever achieved.

Perhaps my greatest criticism of this book is the picture the authors progressively build up of many small steps towards sustainability. I agree with them that the concept of sustainability is a very slippery one, not easily defined. While the agriculture establishment has only just begun to grapple with this “new” concept, alternative agriculture generally and permaculture³ in particular have been founded on a conception of permanence or sustainability.

3 Mollison, B. & Holmgren, D. *Permaculture One* Corgi 1978 and Mollison, B. *Permaculture: A Designers' Manual* Tagari 1988

ENERGY ACCOUNTING

Barr and Cary's brief dismissal of the relevance of permaculture to broad acre agriculture does not particularly bother me. This is a subject which many persons very sympathetic to permaculture also find difficult. However their failure to make reference to one of the most powerful conceptual tools in testing for sustainability, viz energy accounting, does concern me. Energy accounting as developed by Odum⁴ and others formed a cornerstone for my development of the permaculture concept with Bill Mollison. It allows comparison of all of the human and natural inputs, processes and outputs of systems in terms of a universal scientifically accepted currency, energy⁵.

Barr and Cary repeatedly refer to innovations in agriculture which stabilised the land, improved fertility and/or increased yields while ignoring the constantly rising capital and energy base necessary to support those systems. Some of the apparently minor inputs which generated these advances are incredibly costly in energy terms. For example energy studies of Gippsland dairy farms in the 1970's⁶ showed superphosphate use or the lack of it was the biggest factor in determining whether agriculture was a net loss in energy terms. Today phalaris and other perennial pastures are widely touted as the answer to dry land salinity on marginal grazing land ignoring the requirement for continual input of high energy fertilisers to maintain such systems. Thus the proposed solutions set up scenarios for total catchment collapse once the real energy costs of these input are inevitably passed on.

Barr and Cary make many references to the progressive incorporation of ecological principles into agriculture but nothing on the relevance of the most powerful tool to arise from ecology; total system energy accounting. If our food production and delivery system cannot provide primary human energy needs without energy subsidy, and we continue to "eat" fossil fuels then the localised improvements in other measures of sustainability are irrelevant to the future survival of this nation and humanity.

Despite these criticisms, this is an important book. It is particularly good at revealing through case studies the intricate technical and social factors involved in agriculture and the constant failure of simplistic solutions proposed from outside. From my point of view it provides a much needed antidote to the excesses of zeal concerning biological innovation such as exhortations to simply plant trees, so evident in the permaculture and environmental movements, and I commend it to all radicals both on the farm and in the town.

4 Odum, H.T **Power, Environment and Society** Wiley 1971 and Odum, H.T. & Odum, E. **Energy Basis For Man and Nature** McGraw Hill 1979.

5 Holmgren, D. Energy and Permaculture in **The Permaculture Edge** Vol. 3 Issue 3. October 1993

6 Dornom, H. & Tribe, D.E. Energetics of Dairying in Gippsland **ANZAAS Symposium: Energy and Agriculture**