

Contrasting perspectives

– young countries in old landscapes and old countries in young landscapes

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Abstract

Contemporary Australia is a young country in a vast ancient continent. Our land use systems are derived from Europe, from old countries farming in young landscapes. Australian agriculture has been imposed upon Australian rural landscapes, with on-going ecological consequences extraordinary in their scale and speed. In contrast, European landscapes have evolved with their agricultural systems at a gentler pace over a longer period. The rural vistas of modern Europe are manifestly man-made. Landscapes are socially constructed. The landscapes we see and in which we live are the net aggregate and cumulative product of evolving human values and policies, which in turn inform collective and individual decisions and actions.

This paper explores the social construction of rural landscapes in Australia, with reference to contrasting ecological, political and cultural contexts in Western Europe. Perceptions of rurality, and their manifestation in policy and practice, contrast accordingly. European experience suggests that, as modern agriculture develops more intensive, industrial and vertically integrated production, there is a complementary trend towards diversification and extensification, where rural landscapes are valued as arenas of consumption (of landscapes and lifestyles and non-urban experiences) as well as, or even rather than, as engines of food and fibre production.

The relevance of such concepts in the Australian context is explored, concluding with prognoses for future rural landscapes and rural policy in Australia.

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Introduction

As Australia considers its identity and its relationships—with its indigenous people, with the British monarchy, with the Asia-Pacific region—another relationship is long overdue for an overhaul. That is the relationship between contemporary Australian society and the landscape. It is time for modern Australians to act as if we are here to stay, rather than just passing through. While most Australians probably feel that the colonial era ended last century, much of our land use and management is still deeply embedded in systems which have changed little since their origin in colonial times.

Landscapes and ecosystems are socially constructed. Even so-called wilderness is a western construct, subject to human-induced climate change. No landscape is immune or isolated from the impacts of human decisions, human choices, human actions. The ecology of agricultural systems throughout history reveals that the exact nature of farmers' response to their environment depends not so much on the ecological constraints imposed by their environment, as on the society in which they find themselves (Bayliss-Smith 1982). We are today constructing the landscapes of tomorrow, in the way we allocate land, the way we clear vegetation, the way we build dams and regulate rivers, the places we occupy as populations expand.

Australia is an ancient land and the history of European settlement in Australia is very short.

The early European settlers, and the trajectory of the first century of Australian agriculture, were driven by verbs like 'taming', 'opening up', 'developing' and 'civilising' their new, unfamiliar and apparently bizarre milieu. Acclimatisation societies last century were bent, not on understanding and appreciating the unique qualities of Australian plants and other native creatures, but on replacing and displacing them with familiar, and implicitly more civilised and valuable species, from 'home'.

The predominance among the first settlers of people from the British Isles led to farming systems dominated by sheep, cattle and cereal crops—which had evolved in landscapes blessed with reliable seasons, soft rains and fertile soils, forgiving of cultivation and cloven hooves. It is fascinating to ponder what Australian landscapes of today might look like had we been colonised by, say, the Spanish, or other peoples familiar with Mediterranean climates and poor soils. Instead of annual crops and pastures with grazing animals, we might have had systems dominated by perennials (grapes, olives, almonds) and browsing animals (goats), with solar passive architecture to boot. Nevertheless, they would probably still have tried to replace the Australian trees, shrubs, herbs and grasses, and much of the wildlife dependent on them, along the way.

To underline the point, I cannot better a favourite quote from an old western Queensland grazier, who pondered;

"If Australians had discovered England, do you think we'd have cleared all the local trees, and shot the sheep and cattle, and grazed the joint with kangaroos?"

A French detour

Much of my thinking about our management of Australian rural landscapes has been stimulated by the experience of living and undertaking rural social research in the mid-1990s on Le Causse Méjan, a remote and sparsely populated region of rural France. The way in which landscapes are perceived and valorised in that context, provides an interesting contrast with much of rural Australia, particularly when viewed through the prism of rural policy development.



Le Causse Méjan is an elevated calcareous plateau of 35,000 hectares, about 1000 metres above sea level in the south of the Massif Centrale of France. It has the lowest population density in France (1.4 person/km²) and in 1994 had 58 farms (compared with 62 in 1970). It is relatively remote, having enjoyed the connection of electricity, the reticulation of water, the arrival of the telephone and the sealing of its roads, only in the last twenty years. The temperature can drop to more than 30 degrees below zero in winter, and the plateau can be cut-off from traffic from the outside world for weeks during extended cold snaps, much as it used to be all winter before roads were sealed.

Sheep have been farmed on Le Causse Méjan for more than a thousand years. For the vast majority of this time, the only external inputs have been sunlight and rainfall. Farming systems are traditionally (and still typically) diverse, with a flock of milking ewes as well as a sheep meat breeding operation, cows for milking, and pigs, chooks, ducks, geese, rabbits and vegetables for eating. Just under 10 percent of the plateau is arable, and this has traditionally been farmed for hay and cereal crops. There is no timber on the plateau, just limitless stone. The traditional buildings seem to have grown from the earth itself, with stone walls about 1.4 metres thick, vaulted ceilings and stone roofs. Farm buildings are typically nestled into the side of a hill, with three storeys. It is only in recent decades that people on the plateau do not share their dwelling with their stock. Traditionally, during the cold months, animals would be kept inside on the ground level, humans would live in the middle, and the granary/hay shed would fill the top level, thus insulating the humans between the musty warmth of their animals and closely stacked hay and grain. In the warmer months, sheep are

watched by shepherds during the day as they graze native pastures of rosemary, lavender and other local herbs, coming in to be milked in the evenings, staying inside overnight until after their morning milking. The need to ‘make hay while the sun shines’ is intense, as winters are long and severe, and every square meter of arable land is needed to provide enough food for the winter.



The main changes to farming systems in recent years have seen the introduction of fertilisers and more productive crop and pasture varieties, the modernisation of milking systems, increases in flock sizes and occasionally purchase of stock feeds from outside the plateau, something inconceivable 20 or 30 years ago. However, with a carrying capacity averaging one sheep per hectare, the Causse has always been, and always will be, marginal grazing country. Maximising production has never been a dominant theme for agriculture on the Causse, compared with more favoured regions.

Yet Le Causse Méjan has defied the dominant trend of rural decline in similarly marginal areas of rural France over the last thirty years. The real revolution on the Causse Méjan has been the rapid evolution of agriculture-based tourism, associated with local processing and value-adding for traditional farm produce, development of regional branding and a marketable identity for the Causse and its products, targeted to key niches and direct contact with consumers, on-farm and through a couple of dedicated outlets in Paris.

The Parc National des Cévennes (established in 1972, the first National Park in France) covers a significant portion of the plateau. Most of the National Park is on private land. The Park provides walking tracks and interpretive facilities for hikers, cyclists and motorists. It defines the sheep farmer as one of its key endangered species, as sheep grazing is crucial to maintain the floristic diversity of the pastures

and the open ‘steppique’ landscapes which characterise the plateau, attract the nature lovers and are crucial nesting sites for some migratory bird species. When a farm is abandoned and sheep disappear, shrubs invade, the landscape closes up and nesting sites are gone.

This scenario was lamented by President Pompidou in 1971 (Deverre 1995) in a peculiarly French perspective: “*nature abandoned by the farmer becomes nature in mourning*”.

The Park is also preoccupied with the extraordinary built heritage of the plateau, and farmers receive generous subsidies to maintain their old buildings in the traditional way. Most regard this as a nuisance, as the old doorways are too low and narrow to take front-end loaders and other modern equipment, the stone is heavy and maintenance tedious compared with new concrete sheds with smooth concrete floors and tin roofs. Farmers may be allowed to build a new shed, but the Park authorities will be involved in determining the siting, orientation, colour and roofing materials of the new building to minimise negative visual impacts, and they may still insist on maintaining the old buildings. Many farmers resent being ‘forced to remain primitive’ in the interests of an externally defined aesthetic.

When the Park, in an attempt to recognise explicitly the role that traditional grazing practices play in reproducing the landscape which visitors find so attractive (especially urban French in search of *la France profonde*), introduced a new form of assistance for farmers under the title ‘*Jardiniers du Paysage*’ (gardeners of the countryside), some farmers responded by setting fire to a government pine plantation. They deeply resent being seen by government as ‘gardeners’, and have an entrenched self-image as sheep farmers, a self-image which often appears to be at odds with their main sources of income.

The strategies employed to maintain farm and community viability on the Causse have not all been reactive. A late 1970s-early 80s combination of an enlightened Mayor, an energetic and entrepreneurial agricultural extension officer and a cohort of young farming couples open to new ideas, developed a coherent vision of what the Causse had to offer and what it could become. They knew they could not compete in production terms with more fertile regions closer to markets. They knew they had to capitalise on their low inputs, their unique products such as the Rocquefort blue sheep cheese, the hearty soups and casseroles and tender roasts of herb-fed mutton, their open space, pure spring water, tranquillity, vast empty landscapes and crystal clear star-studded skies, the noise of the sheep bells tinkling across the plateau and the tranquil images of the shepherd tending the flock – in short, something closer to the ‘eternal pastoral symphony’ more usually attributed to rural England (Deverre 1995).

This vision was designed to, and did, appeal to urban (Parisien) elites. At one stage L’Association Méjan, the community-based organisation initiated by a handful of families, had enrolled several hundred influential Parisiens to prevent developments on the Causse (a resort hotel complete with golf courses, airport and swimming pool) which did not accord with their vision. A complex array of subsidies, mostly French but with some imaginative local interpretations of EU-derived measures, evolved to support the distinctive Causse system.

It is easy to understand the attraction of the Causse and its traditional farming systems for the political elites of Paris. Images of the peasant farmer occupy a special place in French history, as noted by Deverre (1995): “Peasants were, to put it simply, the *cement of the nation*, from the time of Napoleon to the First World War, and beyond to Petain.”

From a sustainability perspective, the agricultural policy context in France is much more complex than the stereotypical images of militant farmers holding a sentimental and gullible public to ransom to protect their inefficient farms and rustic lifestyles. I counted 52 different types of support schemes (distinct from direct price support mechanisms which have been virtually eliminated), including: low-cost loans, start-up grants and specialist technical support linked through cross-compliance to farm business management training, to target and assist young people to get established on farms; and similar schemes to help older people who have left the land to find another pursuit; schemes encouraging diversification, value-adding, regional brand identification and niche marketing; mechanisms to facilitate collective management of resources such as expensive equipment and local processing facilities; and schemes based on environmental concerns.

Deverre (1995) notes two main classes of agriculture-induced land degradation in France: those caused by activities such as pollution by nitrates and pesticides, soil erosion, and damage to sensitive habitats; and those caused by lack of activity – the abandonment of agriculture and livestock farming causing landslides, fires, declining floral diversity of pastures, and woody shrub invasion.

As an aside, it was fascinating for me as an outsider in Europe during three years of intense debate on the Common Agricultural Policy, to observe how differently the same measures emerging from Brussels were interpreted and applied in different countries. For example, for the purposes of working out how to apply Article 19, the agro-environmental measures, Britain developed measures for England, Scotland and Wales, whereas France interpreted these measures at the level of the Département, of which there are 94 in France.

While the reality is much more complex and nuanced, I remain attracted to the caricature of Deverre (1995), who notes, tongue in cheek: “*the agro-environmental approach was imposed on France by its European neighbours, or at least the more powerful of them: for example, the British (a nation of keen landscape gardeners and birdwatchers); the Germans, reacting to the early electoral success of the Greens and shocked by the destruction of their forests by acid rain; and the Dutch, drowning in a tide of unwanted animal slurry.*”

Despite what appears to be a success story in the struggle against rural decline, almost one-third of the farms remaining on the plateau have no obvious successor, subsidies typically represent 65-80% of farm turnover, increasing tourism and ecological pressures (shrub encroachment) threaten agriculture as currently practised, and the younger generation on farms does not seem to exhibit the same solidarity or shared collective vision of their parents. Some of the older residents have never been to Montpellier (now about four hours drive) let alone to Paris, yet their children and grandchildren watch American sitcoms on television.

There remains a diverse range of perspectives on what a more sustainable agriculture, or rural landscape, might look like on the Causse Méjan, both within the farming community, and between farmers and other sectors. Not all the younger generation are enthused about what they see as an emerging role as extras in a great agrarian theme park, subsidised by society to keep their production systems in a time warp. Not all farmers have the people skills to adapt to tourism-based enterprises. Some of them seem to prefer empty landscapes such as the Causse because they don't like crowds, especially traipsing across their land or camping in their paddocks.

Others see that their only hope of maintaining a satisfactory lifestyle in their own region is to adapt to societal preferences by producing an internally-coherent suite of products embracing landscape, cuisine, built heritage, accommodation and leisure activities (Bessiere 1995).

This is consistent with a broader phenomenon across western Europe which has seen perceptions of the countryside change from a simple locus of production of raw food and fibre, to a more complex arena of consumption – of lifestyles, landscapes, environmental services and leisure experiences (Marsden et al 1992).

Australian rural landscapes

This brings us back to the Australian context. In stark contrast to the Causse, we have not been grazing sheep for more than a thousand years – far from it, yet the impacts of sheep and other aspects of European agriculture have been profound.

A thumbnail sketch of the history of agricultural impacts on the Australian landscape (described in detail by Neil Barr and John Cary [1992]) reveals a gradual exhaustion of the soils in cropping areas and of perennial pastures in grazing regions up until Federation in 1901, owing to overgrazing, overcropping and the devastating impact of rabbits. Then the introduction of new wheat varieties, superphosphate and dry fallow heralded new prosperity for wheat farmers, which proved to be short-lived, as bare fallow and cultivation reduced soil organic matter and broke down soil structure. The erosion decades of the 1930s and 1940s spawned the first widespread community concern about land degradation (Bradsen 1988) and the establishment of soil conservation agencies by state governments. Improved pastures and crop varieties, clover ley rotations, soil conservation works, and the apparently successful biological control of rabbits, dramatically reduced erosion. The wool boom of the early 1950s saw a new golden era in which pastoral fortunes were consolidated, and agriculture was the mainstay of the Australian economy.

However over the last forty years more insidious and intractable long term problems have emerged: various combinations of soil erosion, salinity, acidification, soil structure decline, waterlogging and water repellence affect a significant proportion of the land used for agriculture; fresh water resources (both groundwater and surface water) are being depleted and degraded; half of the tall and medium forests and about 35 per cent of the woodlands have been cleared or severely modified; there is an alarming and accelerating rate of extinction of native flora and fauna; and finally, many introduced plants and animals have been ecologically disastrous (Australian Bureau of Statistics 1992, Cocks 1992).

Barr and Cary (1992) note that each generation has defined its own challenges (survival, development, and now sustainability) according to its cultural norms. They caution that current prescriptions for more sustainable farming practices may not stand the test of time, that these complex issues will not be solved by simple recipes.

Native vegetation as a window on rural landscape management

Rather than examining Australian rural landscapes writ large, the rest of this paper focuses on the management of native vegetation in rural landscapes, and the way in which changing social values are reflected in a rapidly evolving policy context.

Few pictures and stories are as evocative in tracing the relationship between humans and nature, and the landscapes constructed out of this interplay, as those of the mythical Australian ‘bush’. In a literal sense the bush comprises the native vegetation, the resilient grey-green mantle which clothes, protects and nourishes the landscape – one of the richest, most diverse and startlingly distinctive botanical endowments of any country.

Figuratively, ‘the bush’ is a much larger concept, comprehending the rural, the remote, the raw, the wild and the other – as much a social construct as a botanical descriptor.

The need to improve management of remnant native vegetation on agricultural land is one of the most compelling environmental challenges for Australia in the 1990s. The ramifications of native vegetation depletion and degradation have not been confined to a savage loss of biodiversity, but include hydrological disturbances, exacerbated soil erosion and salinity, deteriorating water quality, increased net greenhouse gas emissions and stark impacts on the visual landscape.

Removal of native vegetation and degradation of remnants on agricultural land has historically been the result of need, greed, ignorance and cultural dissonance. Australia has generated much of its wealth from land cleared and/or disturbed for agriculture and mining. There is little to be gained from lamenting past mistakes or chastising former generations who saw the world in different ways with different priorities. The clearing of such vast areas of bush, at least in the early years, should be seen as a magnificent achievement given the tools available, and a testimony to what can be achieved by several generations of hard work buttressed by prevailing attitudes, social norms and a supportive state. But values have changed and knowledge has grown.

The crux of this issue is that the native vegetation which remains on agricultural land is still being cleared for agriculture, roads, utility easements and residential subdivisions; grazed, burnt, mined and stripped of gravel and soil; exposed to wind, rising groundwater, agricultural runoff, fertilisers, herbicides and pesticides; and invaded by pests and weeds.

Decisions on the part of a given land user regarding management of remnant vegetation on agricultural land, and on the part of the state regarding investments to influence such management, require the weighing up of diverse values—private and social, market and non-market, utilitarian and intrinsic—which are difficult to quantify and even more difficult to reconcile. Failure to come to grips with how to

apportion value to things which cannot be sold lies at the heart of the sorry state of farm bushland in Australia.

Working at a landscape scale

The question of scale, both spatial and temporal, adds further complications. Land management decisions are overwhelmingly made according to criteria determined at the scale of the paddock, farm or individual patch of bush, over timescales of several seasons or a human generation at most. Yet many ecological systems and processes relevant to remnant vegetation must be perceived and managed at a landscape scale, over much longer timeframes. What may seem to be a parameter at one scale may be a variable at a larger scale, and what may seem to be sound management at a farm scale may make no sense in aggregate at a landscape scale, and vice-versa. Processes which are barely perceptible in the everyday lives of humans may be cataclysmic in ecological terms, sealing the fate of other species or communities.

A key challenge at the landscape scale is not merely to get land users to value native bush, but to encourage them to manage farm bushland and the matrix of land around it in a way which makes ecological sense at a landscape scale. Extension messages need to highlight interactions and interdependencies, research needs to generate landscape level priorities and guidelines, and planning needs to consider how to 'scale up' from the farm scale to the catchment/landscape scale. A catchment full of nice farm plans does not a catchment plan make.

A powerful motivating issue which can be used here is the link between particular native species and appropriate habitat. Key species such as the superb parrot, koala, eastern barred bandicoot, platypus and regent honeyeater are already being used by landcare groups and catchment management committees to focus catchment-scale efforts to integrate farmers' planning and works. Regional dryland salinity plans and regional forest agreements also reinforce the need for an integrated approach.

At the landscape scale the activities of local governments and authorities managing water, electricity, transport and communications become germane. Roadsides, streams and rail reserves, stock routes, local nature reserves, tips and gravel pits are all critical threads in the fabric of remnant vegetation, forming a matrix of patch and corridor which straddles agricultural land.

A new clientele for remnant vegetation management knowledge and skills suddenly emerges when such areas are considered. Dozer and grader drivers, chainsaw operators, railway maintenance crews, stock inspectors, shire engineers, fire brigade captains, Telstra ditch diggers and electricity authority tree loppers often see trees, their roots and branches as the enemy, something to be uprooted, sprayed, hacked or burnt. They are generally even less aware of the value of remnant native grasses, herbs and shrubs.

I well remember persuading a shire engineer over a couple of years to schedule roadside tree lopping operations to coincide with good eucalypt, acacia and casuarina seed yields, so that lopping could become a seed collection operation, providing local farmers with local genotypes and generating some revenue for the shire. It worked for a while, as the engineer and his crew became aware that they had been lopping and burning branches laden with seed worth at least \$100/kg, that native species are

valued and local genotypes are unique, and that it makes more sense to remove as little of the tree as possible than to bowl over the whole tree. Alas, the engineer retired and his replacement was of the old “a bare roadside is a good roadside” school.

It is when we focus on the landscape scale that our practical ecological ineptitude becomes most apparent. We have spent about seven generations trying to refine European farming systems, based on annual species of crops and pastures, soil cultivation, cloven hoofed animals, flood irrigation and so on, in a colonial context of producing large volumes of undifferentiated, unprocessed products for export markets. We are in poor shape to start with a clean sheet of paper and think about what an Australian farming system might look like. Land tenure systems, land management regulations, research and development infrastructure and funding, the education system, incentives, the tax system, trade policies—all conspire to prop up the status quo.

Culturally, remnant native vegetation is still perceived by many people to be ‘useless scrub’, something to be tamed or removed to make the land productive (Williams et al 1998). It certainly has not gained the status of irreplaceable natural heritage. It is diverse and dispersed over vast areas, not amenable to focused campaigns. Its benefits are rarely strikingly obvious, hard to depict on television; and it does not have any clearly identifiable, politically potent advocates in the community. Even at the state level where constitutional responsibility for vegetation management lies, there is rarely an institution with a clear mandate or accountability for the quality of vegetation management.

My own observations are that (at least on the mainland), as one travels further north and further inland, the cultural devaluing of native bush, and the notion that clearing is land improvement, become predominant. Disdain for native bush is reinforced by the idea that urban ‘greenies’ hold an opposite view. Private property rights are sacrosanct, and many land users are reluctant to accept the legitimacy of public interest in their management of land, seeming to confuse the rights of land ownership and the rights of civil and political freedom.

It is important that the **management** aspects of farm bushland are emphasised, and to remember that in the main we are dealing with farms, in extensively modified landscapes. Ecological fundamentalism, urging land users to protect farm bushland for its intrinsic value, to ‘fence it and forget it’, treating it as precious, delicate islands of wilderness to be admired from afar but not touched, is misguided. A much more effective message for the majority of land users would be based on active management of farm bushland, controlling pests and weeds, using fire appropriately, and even occasional micro scale harvesting of products such as posts and poles, flowers, seeds and essential oils.

Changing land management policy in Australia to inhibit clearing of native vegetation and to encourage more thoughtful and ecologically sound management of farm bushland is profoundly difficult. It is a legislatively thorny issue, riven with the cumbersome interplay of State/Commonwealth responsibilities. It also confronts a key doctrine of European settlement in Australia; that clearing equals development, that ‘opening up the country’ is land improvement. This ethos has been buttressed by decades of government policy at state and federal level, including tax concessions for

clearing, lease conditions which made clearing compulsory, feeble regulatory efforts and management of public lands which set a poor example.

There are sound ecological reasons for retaining remnant vegetation—biodiversity, hydrological balance, water quality and carbon sinks among others. We also tend to gloss over the sheer uniqueness of Australia's remnant vegetation and the fact that Australia is one of the few countries left with large tracts of biologically diverse land relatively undisturbed by modern society—an extraordinary feature which we would be mad to squander and which, predominant economic theory notwithstanding, is simply not substitutable. Furthermore, clearing precludes the capture of other possible future benefits from remnant vegetation which may be considerable, regardless of whether they can be defined given present knowledge. Recently cleared land is rarely more productive in the broad sense—most of the best agricultural lands were cleared long ago. It is not as if Australia has a shortage of cleared marginal land, or that the world is knocking us over in the rush for the products it yields.

This context underlines the significance of the Bushcare program funded through the Australian government's Natural Heritage Trust. Bushcare, with over \$300 million in Trust funding over five years, is the largest component of the Trust. It has an ambitious and historic goal of reversing the decline in the quality and extent of Australia's native vegetation communities. Given that we are currently clearing about three times as much land as we are replanting, this is a huge task.

Consistent with the Trust as a whole, Bushcare has three complementary streams of investment: direct investment in capital works to improve vegetation management in the landscape; investment in people, to enhance community commitment, skills and capacities in native vegetation management; and investment in the institutional frameworks – information, planning, incentives and regulation – within which decisions impacting on native vegetation are made.

Influencing choices through incentives and disincentives

The assumption that attitude change leads to behaviour change permeates extension theory and much Australian environmental and agricultural policy. We tend to prefer non-coercive policy instruments designed to raise awareness and change attitudes, which are then assumed to lead to desired changes on the ground. However research by John Cary and others has shown that it is often the other way around, that farmers' attitudes may change in response to behaviour changes induced by, for example, prices, regulation and technology. Seat belts in cars provide an example—people started to use them because they had to, yet most now do not feel comfortable without one. Even farmers unfavourably disposed towards conservation would be more likely to protect farm bushland if that was the most profitable use for the land, and after a few years of doing so, would probably say they think it is a good idea.

Australian governments have traditionally been reluctant to express social values through regulatory frameworks establishing incentives and disincentives. However the depletion of farm bushland is so rapid and degradation of remnants so extensive, that greater regulatory effort is essential. While a substantial proportion of land users might privately admit that further clearing is not smart, their antipathy to governments telling them what they can and cannot do outweighs such concerns. There is an inevitable tension between the need for consultation to avoid an irretrievable

alienation of land users, and the risk of precipitating a backlash of poorly planned, vindictive clearing during consultative processes.

Spending money to protect and manage remnant vegetation rarely generates a cash flow for the land user. It is an issue where social benefits nearly always outweigh private benefits, and the social costs of continued degradation are usually more important than the immediate tangible costs to the individual land user. Barr and Cary (1992) point out that environmental beliefs tend to be symbolic rather than substantive, and relatively few land users have sufficiently strong ecological values to make significant impacts on remnant vegetation protection where there is no clear, observable and quickly realisable private benefit. Their attitudes towards native vegetation on farms are predominantly utilitarian or instrumental (Williams et al 1998).

Incentives and cost sharing arrangements are crucial.

The development, refinement and large scale application of incentives for nature conservation on private land which more accurately reflect the distribution in space and time of the benefits and costs of conservation, is one of the most significant achievements of Bushcare. Landmark research led by Mike Young and Carl Binning of CSIRO, funded jointly with the Land and Water Resources Research and Development Corporation, has generated a series of reports which establishes a solid conceptual framework for the design and application of incentives at a site and landscape scale.

The recent announcement by the Prime Minister of taxation incentives to encourage philanthropy, included provision for full deductibility of land donated to conservation organisations, irrespective of the date of purchase. This is potentially a very significant incentive for the permanent conservation of very significant remnants. Further, through Bushcare we are developing an initiative modelled on the Trust for Nature Victoria, which aims to ensure that land anywhere in Australia can be purchased, have its conservation values secured through a covenant, and on-sold to a sympathetic purchaser, the capital to then return to a perpetual fund. We also assist a number of local councils to introduce rate differentiation schemes, which reduce or remove local rates from land taken out of production for conservation purposes.

These are all significant measures which complement the traditional and most common form of incentives – technical assistance and up-front grants. However we still have some way to go to refine robust investment-sharing formulae which can be used to underpin long-term incentives regimes capable of delivering a matrix of overlapping public and private benefits at a landscape scale. Such formulae in turn will require the articulation and translation into practical terms of the concept of ‘duty of care’ to establish the behaviours which we expect of landholders commensurate with their role as stewards of natural resources on behalf of this and future generations.

Degradation of remnants is slow and insidious, making it hard to comprehend the cumulative effects of incremental increases in disturbance. Ecological concepts and processes such as nutrient cycling, trophic levels, energy transfer, herbivory, competition, predation, parasitism, symbiosis, emigration, immigration, growth, decay, disturbance, pollination, chance and so on, should be second nature to natural

resource managers and those who advise them. This is rarely the case. Few mainstream farm management advisers are capable of helping people to modify farm layout and management to enhance ecological integrity at a landscape scale.

In many Australian areas we do not yet have the eco-alphabet, let alone a grammar, a literacy or a literature to inform more ecologically sound management prescriptions. Yet we are a world leader in land literacy programs which involve students, community groups and ley volunteers in environmental monitoring programs to get a direct handle on the state of their local environments. Land Literacy programs such as Saltwatch, Waterwatch and Streamwatch (Campbell 1995) have enormous potential, particularly given the scope to use new technologies to gather, analyse, interpret and disseminate environmental information more quickly, cheaply and accurately.

Through Bushcare we are funding Birds Australia to compile Australia's second national Bird Atlas, based on the observations of thousands of dedicated volunteers across the country. These people see landscapes in very different ways from the 'if it moves, shoot it; if it doesn't, chop it down' fraternity.

Australia does have many of the ingredients necessary to develop a more integrated and ecologically informed approach to land management at a landscape scale. There is a plethora of new and emerging institutions at a scale between local and state government with a natural resource management brief. With additional resources from the Natural Heritage Trust, and a focused strategic direction at the national level providing the leverage, it should be possible to build a comprehensive national framework for overseeing activities, setting priorities, and targeting investment at the landscape scale.

Future Australian landscapes?

Changing gear for a moment, and imagining rural Australia in a generation or so, what might we find? Would we find something more like a pre-European Arcadia? Or perhaps a scenario described by Keith Brady as ecological apartheid, where islands of pristine national parks are dotted through oceans of ecological wastelands.

For what it's worth, my view is that it will take some time for negotiations to resolve some remaining clashes of values: between rural and urban interests, between production and conservation interests, between 'developed' and 'developing' jurisdictions and regions, and between those ascribing utilitarian and intrinsic values to native vegetation. These are crude dichotomies, and the world is not that simple. In reality these values are highly differentiated and not necessarily clustered in predictable ways.

However as our information base, our ecological literacy and our planning tools improve, I believe that our currently modest repertoire of incentives will be complemented with a much more comprehensive range of measures through which society ascribes value to nature on both public and private lands. Such measures will include: well-defined and regionally understood duty of care principles; stewardship payments tied to management agreements; ISO standards and industry codes of practice; vertically and horizontally integrated planning; market recognition and reward for best-practice environmental stewardship; internalisation of external

environmental impacts; and ever-increasing levels of philanthropy (both tax-induced and altruistic).

The major challenge of our time is how to develop a vibrant, self-reliant economy and sustain a reasonable quality of life, equitably shared, without depleting or degrading the resources upon which we and future generations depend. This challenge is universal, grappling with it is the one certain growth industry of the next century, and Australia is uniquely placed to make an important contribution.

In line with a general redefinition of Australia and what it means to be Australian at the end of the 20th century, we have a great opportunity to refine our national priorities to embrace the uniqueness of our landscape and natural and cultural heritage. Done sincerely, this would have far-reaching influences on international perceptions of Australia, its people and its products. Environmental innovation offers a key direction in which Australia can differentiate its products. We have an extraordinarily rich, diverse flora and fauna, and we have a wonderful palette of rural landscapes.

These are potentially the basis of more sustainable and more Australian land use systems, exploiting in an integrated way a wider range of values than just food and fibre production.

The sustainability question for Australians is a simple one.

Do we continue to manage this country as if we are just passing through, here to extract what we can and live off the profits elsewhere, or do we start to think and act as if we are here to stay, for good?

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