Editorial

Windows and missed opportunities

WATER rationing has been introduced in most of the larger cities of southern Australia as a consequence of a shortage of water. The rationing is implemented by limiting the timing (to cooler parts of the day) and frequency with which gardens can be watered, and preventing unneeded waste, such as cleaning vehicles and concrete paths with hoses. There is, however, no guarantee that this method will lead to less water being used and no predetermined target for the level of reduction required. Few people complain about this type of rationing because the quality of our lives has not altered. But what if the requirement was for every one of us to reduce our current water consumption by at least 20% or perhaps to have an absolute limit placed on the volume of water we could use. How would we use the ration of water that we were allocated?

Most people living in cities take access to unlimited, good quality water for granted and, almost with contempt, waste this precious resource. Rationing has the ability to change attitudes about our use of water and other natural resources, but these educational opportunities are not being taken. If we can all survive adequately on less water, then why revert back to the old ways when the rivers and reservoirs are once again full. Rationing, however, will be lifted for the simple reason that governments make more money (profit) by selling more water to their constituents. Governments therefore have no vested interest in reducing the per capita water consumption in Australia.

In some of the rural areas of South Australia, irrigators dependent on water from the Murray River have been required to reduce consumption by 20%. This should lead to more efficient methods of irrigation including novel watering techniques (e.g., partial dry root zoning) to reduce water consumption. However, when flows return to the Murray, will the water that is saved be returned to the River, or allocated to developing more irrigated lands? I doubt the water will be returned. If, by some miracle, water is returned for environmental purposes, we (governments) would need to buy the water back from irrigators, no doubt at a premium price. The South Australian Government, for example, has introduced a levy on South Australians to help Save the Murray. The intention with some of those funds is to buy water back for environmental purposes. But who owns the water in the first place?

Securing additional water for environmental flows is critical to saving the Murray River; we have known this for at least a decade but have taken no remedial action. At present there is some commitment from governments to claw back some water for environmental flows for the Murray. The amounts that are being considered range from 350GL to 1 500GL per annum, the larger volume equivalent to clawing back about 13% of the water that is currently being extracted. Even these flows are compromised or constrained by the need to maintain the rural economies that now depend on the Murray's water. At no stage have we determined what the River might actually need for maximum and speedy restoration, and if we did it would almost certainly exceed the maximum of 1 500GL pa currently being considered. Instead we continually add more and more components (irrigation is actually increasing), and increasing dependency on the river system will make it that much harder to sustain the River. In South Australia, for example, there have been additional pipelines recently established to provide water for the Barossa and the Clare wine districts.

The Murray is struggling, its mouth is functionally closed and the system is crying out for some water — but decisions about providing water to the River are continually delayed. The decision in any case is based more on what the short-term economic impact will be on the individual irrigators and rural economies that now depend on the Murray (and on the politics of being re-elected) rather than on the environmental needs for a healthy river. From my biased viewpoint there is a moral obligation to return some of the water we extract to the Murray now — not in 1, 5 or 10 years time. Surely industries with a concern for the environment can absorb and adjust to reducing their need for water by 10–15%. If not, such industries are unlikely to be economically sustainable in the medium to long term, let alone environmentally so. More to the point, do these industries have no compassion for the plight of the Murray? Alternatively, if these industries take such a large proportion of the Murray's water should they not then be held responsible financially for the degradation of the system, and be required to pay for restoration. The economics of developing the Murray must include the long-term costs of restoring the system.

The above example is typical of the way we currently manage natural environments and biodiversity in Australia. Protecting and securing these assets are not priorities in the decision-making processes for government. The key priorities are to meet the short-term needs of humans and economies first and then to

consider almost as an afterthought the environmental needs and consequences of those decisions. Our legislation is not proactive and really only acknowledges the environment and biodiversity once these things have deteriorated. Even when the environment is considered, its importance is grossly undervalued. Until the environment and biodiversity are given equal weighting to human needs and short-term economic returns, then both will continue to be exploited and eroded by successive generations.

There are, of course, many other examples where the conservation portfolio is compromised because the environment and biodiversity play second fiddle to other, generally economic, interests. Ironically some of these are linked to national strategies that are supposedly aimed at protecting threatened populations. For example, Koalas *Phascolarctos cinereus* are vulnerable in parts of New South Wales and Queensland where their populations are small, declining and clearly threatened. However, in Victoria and South Australia, Koala populations have grown and prospered to such an extent that they cause significant environmental damage that not only threatens their long-term existence in these areas, but also affects a wide range of other biodiversity assets and ecological processes.

The issue is nowhere more critical than on Kangaroo Island, where a small number of Koalas was introduced in the 1920s because there were concerns that they would be hunted (for their furs) to extinction on the mainland. The 20 or so Koalas that were introduced have prospered and the current population size for the island is estimated at 27 000. Surely those numbers alone would suggest that this feral population is not threatened. However, this population is currently managed as if the species is threatened with extinction throughout its range. One of the grave consequences of giving Koalas carte blanche of the island is that all but one population of Manna Gum *Eucalyptus viminalis* on the island is severely affected by over-browsing and now threatened with local extinction within 10 or so years. Manna Gums are not alone. Populations of a range of other woodland eucalypts also are losing vigour due to continual browsing from Koalas. A biodiversity asset themselves, the imminent loss of these trees has significant effects on other biodiversity assets (e.g., birds, invertebrates) and a host of ecological processes (e.g., nutrient and water cycling).

The most humane and economically sound method of managing these rampant Koala populations is to cull the populations substantially to sustainable levels. But this is not possible at present because the national policy does not allow culling. Instead all that South Australia has been able to do has been to capture, surgically desex and release or translocate some of the Koalas to other areas – a rather futile exercise, since desexed Koalas still eat and defoliate trees. After five years of doing this at considerable cost to other biodiversity conservation programmes and demonstrating its futility, South Australia is considering just letting the Koalas destroy the Kangaroo Island environment. In reality over-browsing by Koalas is just another form of vegetation clearance. Rather than a threatened species, Koalas on Kangaroo Island should be treated as a threatening process.

The trees and other endemic assets are what we should be protecting and conserving on the Island and not the Koalas. Here is a case where we have overvalued Koalas relative to the other natural assets, and, as a consequence, have placed the integrity of the system as a whole at risk. Are policy-makers simply prioritising the conservation of Koalas above other components of the ecosystem, or have other non-environmental factors come into the decision-making process? No doubt economic and social issues have played a part in the decision not to reduce Koala populations in areas where they are destroying their environment. These may include effects on Australia's ecotourism and international trade. Other countries, however, manage their iconic species with programmes that include culling when required, and Australian politicians need to be less sensitive to a few lobby groups and make sound decisions for long-term benefits. Failing to tackle the over-population of Koalas on Kangaroo Island will ultimately lead to the loss of habitat, the demise of the Koala population, and potentially harm tourism and trade.

While Australia has legislation that does not properly value biodiversity and the environment, and places some assets above those of others, there will be ongoing mismanagement of natural resources. What Australians need to appreciate is that in parts of the country a species may be threatened and need to be carefully nurtured yet in another area the same species might be over abundant and cause environmental damage and so need to be controlled. In the case of Koalas on Kangaroo Island, one could argue that since they are feral they should be eliminated entirely from the island. The irony for Kangaroo Island, however, is that tens of thousands of Tammar Wallabies *Macropus eugenii* that occur naturally on the island are destroyed annually under permit to protect farming concerns, yet this species unlike the Koala is extinct on the mainland. Clearly native animals that cause damage to agriculture are treated differently to those that damage the natural environment, and the main driver for managing a species is not environmental sustainability or true biodiversity conservation but protecting agricultural production.

Recent State of the Environment reports and audits of the terrestrial environment indicate that the condition of the Australian environment is deteriorating and the country's biodiversity is being eroded. Suddenly various Commonwealth agencies are re-examining their biodiversity programmes or considering adding a biodiversity component to their current programmes. But these reviews still come from the old perspective — how can we better conserve biodiversity without compromising our agricultural production and without reducing our use of natural resources? While this approach remains there will be no environmental recovery and biodiversity will continue to lose ground, as evidenced over the last 10–20 years despite Landcare. What is probably needed to better conserve biodiversity is a different approach, one that gives biodiversity and the environment a status at least comparable to the value placed on short-term economic returns from the use of natural resources. Perhaps we should aim to incorporate our agricultural production around the primary task of conserving our diminishing biodiversity. This would force us to first allocate resources to the maintenance of the environment and biodiversity and then to consider other uses of the remaining resources.

Some communities are now thinking like this. For example, the recent Natural Resource Management plan for the Mt Lofty Ranges and Greater Adelaide region has set a challenging target of not only addressing the threats to the remaining native vegetation, but also putting back substantial amounts of habitat. In this area more than 90% of the native vegetation has been cleared and despite limited vegetation clearance over the last 20 years a wide range of species — notably birds — has continued to decline in distribution and abundance — the expression of an extinction debt. Stopping vegetation clearance was clearly not enough to prevent ongoing losses. For this community, the realization that, in the absence of habitat restoration, over half the woodland bird species are likely to go extinct was galvanizing. But equally important was the realization that this was a once only window of opportunity to reduce species losses, since no future generation would have such an opportunity once the species are lost. As a result of these realizations, the Natural Resource Management plan aims to have each vegetation type eventually occupying an area equivalent to 30% of its pre-European area. The preferred approach is to secure large parcels of land (100 ha or more) and to concentrate initially on those habitats that have been disproportionately cleared — the vegetation communities that once occupied the prime agricultural land. Such an approach links comfortably with and extends the philosophy of WildCountry (Recher 2003) (known as Nature Links in South Australia). The challenge now is to secure the land and to gradually build the community's capacity (knowledge and people) to do the reconstruction work, and thereby gradually increase the area of habitat.

This restoration plan is not about simple revegetation, but about building complex functional habitats and the plan is realistic in indicating that this will take decades if not centuries to execute. Some Commonwealth agencies with responsibilities to biodiversity outcomes consider this plan unrealistic and something that we cannot afford. However, one productive and profitable farm has been bequeathed already to the State expressly for this purpose and other concerned individuals are purchasing farms with the intention of re-establishing native habitats on them. Rather than suggesting that we cannot afford to do this, the question might be can we afford **not** to do it, and can politicians afford not to support such a plan if there is community support for it? Certainly future generations would struggle even more than our generation to afford it and would secure far less in return for a far greater investment than we would. Once again, the window of opportunity to act is now not some time in the future. Will our generation act or will it be remembered for missing opportunities?

REFERENCES

Recher, H. F., 2003. WildCountry. *Pac. Cons. Biol.* **8:** 221–22.

DAVID C. PATON
(David Paton is a Senior Lecturer in Biology at the University of Adelaide)