1 March 2006

The Secretary,
Senate Environment, Communications,
Information Technology and the Arts References Committee

Dear Sir/Madam,

Inquiry into Australia's national parks, conservation reserves and marine protected areas

I wish to make a submission to the above Inquiry as a multidisciplinary scientist with specialist interests in conservation and natural resources. The submission will not deal comprehensively with the issues but will comprise comments on selected aspects relevant to your terms of reference a, c and d. I consider these are important aspects likely to be overlooked or avoided in most other submissions.

a. Values and objectives of conservation reserves

Conservation reserves (including national parks and marine protected areas) may be regarded as multi-use areas with many values and objectives. None of these values may be validly assessed in monetary terms, despite recent attempts by econometricians to develop methods for doing this. Even the value of tourism in conservation reserves (or most other places) can be assessed only in a crude and very incomplete manner. Rough estimates of the short-term, direct costs and benefits of tourism may be possible but are grossly misleading and of little significance for responsible planning and decision-making without detailed consideration of all the long-term, indirect and far-reaching costs and benefits of tourism. The greater uncertainties and 'subjective' elements in these latter costs and benefits do not make them smaller in magnitude or significance than the items clearly amenable to numerical calculation.

If 'value' is regarded as the power to satisfy wants or generate pleasure (see Bannock *et al*,2003)rather than 'market value'(which is problematic and very limited in its applicability), the value of tourism in conservation reserves is only part of the aesthetic, recreational and educational values. Nevertheless, because a market value for tourism may be calculated, some economists have used it as a surrogate for the total value of a reserve, and this should be recognised as a very serious error.

Many scientists with expertise in natural resources consider the greatest value, by far, of Australia's system of national parks and conservation reserves is in the biodiversity it contains. Losses of biodiversity occur when species become rare and extinct and this process is now accelerating, through human activities. In the distant geological past there have been periods when widespread extinction of species occurred but these were followed by periods in which new species evolved to eventually restore the world's biodiversity. However, human modification of the land surfaces have greatly reduced the opportunities for new species to evolve. The inevitable, continuing decline in biodiversity must therefore be regarded as irreversible and with dire future implications.

Although, for the above reasons, future biodiversity will be poorer than today's, the need for biodiversity will undoubtedly become much greater. When the world's oil and other non-renewable mineral resources approach exhaustion, biotechnology will have to play an essential role in meeting human needs. Innovation and progress in biotechnology will depend on the available biodiversity and if this is depleted there are likely to be very severe difficulties in meeting future human needs.

Some specific, present-day examples may assist in conveying the significance of conserving biodiversity. Macadamia nuts are a $500 million per year industry in Australia and, to date, are the most successfully commercialised native food plant. Unfortunately, most commercial varieties of the nut have been developed from a few specimens collected in the 1800s by Americans and found suitable for American conditions. Attempts to develop varieties more suited to Australian conditions have been severely restricted because most of the original rainforest habitat of the species has been cleared and wild specimens of the tree are now very rare. This means that the available genetic diversity for breeding new varieties is very limited and little progress has been made in improving the yields. If samples of the species and its habitat had been adequately protected in reserves we would now have a more productive and valuable macadamia nut industry.

Many other native plants and animals could provide valuable renewable resources to meet human needs. There are over 2000 different documented species of native plants used as food by Aboriginal people. Many of these have special properties and distinctive flavours, representing a great, virtually unexplored, potential for new health and gourmet foods. As detailed by Archer and Beale (2004) many native birds and animals have extremely high market values overseas. It should not be too difficult to find widely acceptable ways of breeding them for this purpose and, at the same time, effectively maintain their biodiversity in viable reserves of their natural habitats.

Biodiversity represents sustainably useful resources over an infinite period of time extending into the future. Also, part of the inspiration and insight for scientific and technological innovations of the future will have their origins in observations of the components of biodiversity, further adding to its value. Clearly, the full value of reserves for the conservation of biodiversity is impossible to calculate but must be regarded as extremely high.

C. Threats to objectives and management

There should be serious concerns about the threats to reserve objectives resulting from the 'globalisation' of economic activity and the associated 'economic reforms' adopted by our governments. As suggested above, the most important values and objectives of conservation reserves are not amenable to valid econometric analysis, and attempts at such analysis (as promoted in the reforms) produce grossly incomplete and misleading results. The imperatives of biodiversity conservation are likely to be unrecognised or severely compromised if the decision-making criteria for reserve planning and management are largely confined to short-term monetary considerations.

Economic reforms have also imposed adverse pressures and attitudes on the field and research staff of reserve management agencies. These staff do not have easy or comfortable jobs and cannot be expected to conscientiously meet the complex needs of conservation in a competitive and insecure working environment if their efforts are distorted by simplistic 'performance indices'or by perceived political considerations.

d.Responsibilities of governments

Another relevant aspect of the economic reforms is the relegation of many former government services and responsibilities to the private sector. This may be appropriate for the tourist and recreational objectives of reserves because their costs are recoverable in the short term. However, private enterprise could not be entrusted with the general management of conservation reserves because cost recovery would not be possible for the

other objectives, particularly for biodiversity conservation. This should be the direct responsibility of governments, preferably the Federal Government for the reasons explained below.

It is the responsibility of governments to ensure that Australia's biodiversity is adequately conserved. Undoubtedly there are still a number of vulnerable plant and animal species that do not have viable populations and habitats in the reserve system. These need to be identified and adequate areas of their habitat added to the reserve system.

I have gained the impression from recent contacts with field and research staff of reserve management agencies that increases in staff numbers are required in many areas. Apparently, there is also a need for improvements in the working conditions of these staff to ensure their morale and efficiency are maintained.

Although the competent management of conservation reserves requires the expertise and facilities of existing state government agencies, it is desirable for their funding to be allocated fully and directly by the Federal Government. If a large contribution to the funding is required from a state budget it would be publicly perceived as competing with other needy services such as health, education and transport. This would put conservation in an unfavourable light as the public would not be expected to appreciate its full significance. In such circumstances political compromises are likely, and objectives such as the effective protection of biodiversity may not be achieved.

References

Bannock, G *et al,The Penguin Dictionary of Economics* 7th ed., 2003 (Penguin Books)

Archer, M. and Beale, B., *Going Native,* 2004 (Hodder, Sydney)

Yours sincerely,

(Dr) Frederick C. Bell BSc (Syd), MSc (Civ Eng)(NSW), PhD (NSW)