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The Secretary,
Senate Environment, Communications Information Technology and
the Arts References Committee
Parliament House, CANBERRA ACT 2600

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

Thank you for the opportunity to contribute to this inquiry. I would like to make the following comments on the basis of my experience as Forestry Program Convenor at ANU, co-chairman of the International Union of Forest Research Organisation (IUFRO) working group on Forest Education (6.15.00), member of the Expert Independent Advisory Panel reporting to the Victorian Government, and consultant to various Commonwealth, State and Local Government and non-Government bodies. My contribution will largely relate to the terrestrial parks and reserves and concentrate on your inquiry points:

- c. any threats to the objectives and management of our national parks, other conservation reserves...
- d. the responsibilities of governments with regard to the creation and management of national parks, other conservation reserves ... particular reference to long-term plans;

A major concern for the long-term sustainability of Australia's national parks and reserves is a pending shortfall of professionals skilled in the multi-disciplinary or even trans-disciplinary aspects of natural resource management. Sustainable management of our parks and reserves is underpinned by knowledge of the basic sciences (e.g. biology, botany, ecology, soil chemistry and physics and zoology); applied sciences (e.g. fire, hydrology, mensuration, silviculture and statistics); and social sciences (e.g. economics, history, planning, policy and public participation). It is very easy for management to become dominated by one of these areas with consequent poor or perverse outcomes. For example, park management that highlights only ecological knowledge without concern for the economics, silvicultural options or public participation may result in the classification of inappropriate large and costly areas as "unique and therefore worthy of protection" without community support. Similarly, domination by economic knowledge will lead to parks that gradually degrade as the soil structure collapses under large numbers of paying tourists. I believe that most of the conflict over national

parks and reserves in Australia is due to ignorance or over-dominance of one or more of these different types of knowledge.

It must also be recognised that parks and reserves are not simply producing a single output like “conservation”. Managers need to recognise, value and produce a range of products (aesthetics, recreation, sustainability, ecosystem health, biodiversity, genetic diversity, carbon sequestration, clean water, clean air, ...) in an environment of increasing rate of change and public concern. The production of such a range however requires an understanding of how management interventions (or withdrawal of intervention) affect each population in the park, are justified in terms of input and risk, and involve / incorporate relevant social dimensions. There are too many pressures on our parks and reserves, including population pressures and climate variability, to take a hands-off approach to management and hope that the outcome will be good enough.

Many university graduates involved in park and reserve management or advocacy have majored in one of the scientific disciplines, eg ecology or biology, and this will obviously focus their attention on that knowledge base. Arguments about appropriate fire management practices in national parks, for example, tend to be concentrated into experts of the “economic” or “ecology” camps with little appreciation of the complex interaction between economics, ecology, sustainability, public participation, silviculture, health, etc. However, a professional forestry degree, as practiced in a well-provisioned university environment, is embedded within a strong science discipline but is multi-disciplinary and includes major components of arts/humanities or the social sciences and other fields. Graduates acquire an understanding of the unpinning sciences, the context of forests and natural resource management in Australia, applied skills and the sustainable production possible from forests (including wood and non-wood goods and their properties). These knowledge-bases are also integrated through problem-based approaches like the development of a comprehensive management plan for a multi-objective forest and conservation area (e.g. forest planning and management “capstone” courses). Of course, there are also the “life-long learning skills” of problem-solving and effective learning that allows the graduates to cope with new situations and expanding knowledge. As well as providing a minimum set of skills and learning for forestry professionals, these skills are extremely valuable for any natural resource management arena. Graduates with the above skill set are readily employed by nature conservation agencies, water management boards, rural fire services, pasture protection boards and aid agencies as well as traditional forest employers.

Unfortunately, the number of students graduating with a professional forestry degree has been declining over the past decade. This decline has also been observed in a number of other countries including Canada and the USA. There is a concern that there are insufficient forestry graduates for the “forest industry” without consideration of the numbers needed for other natural resource management jobs.

It is my contention that Australia will need an increased number of professional Forestry graduates to integrate the knowledge and skills required for multi-objective park and reserve management. These graduates will need to be able to practice “practical” skills, including intervention when called for, as well as being readily adaptable to manage for an increasing range of “goods” from the natural environment. They will also need to be familiar with the way science advances and have an expectation that research in a wide range of disciplines can be adapted and integrated to provide solutions that change “what is done on the ground.” Such graduates can only be produced by universities with a strong focus on research in these appropriate arenas as well as good teaching facilities. It is also not practical to achieve these teaching/learning outcomes in less than the four years of a professional degree (despite increasing

economic and administrative pressure to do so). The students themselves are a fundamental part of the teaching/learning in this environment and effective techniques like peer group learning can only occur when there are a minimum number of students able to interact on a regular basis. It is unfortunate that the total number of students graduating with a “forestry or forestry-like” degree are scattered across more than a dozen institutions in Australia which denies the critical mass necessary for peer-group learning.

In conclusion, I believe that:

- A shortage of professionals, skilled in the multi and trans –disciplinary knowledge acquired in degrees like the professional 4-year Forestry degree, is a threat to the ongoing effective management of Australia’s parks and reserves.
- There is a shortage, which is unlikely to be met by overseas recruitment, of professional foresters graduating to meet the needs of multi-objective and sustainable management of Australia’s natural resources.
- Parks and reserves produce a range of values and goods, and significantly more than a hands-off approach is required to balance these values and goods with the needs of society and the impacts on the fauna, flora and soil within the parks and reserves.
- The Government needs to take steps to encourage and support critical numbers of students to attend adequately resourced universities to enable multi, inter and trans –disciplinary, problem-based and peer-based learning of the highest calibre to meet the needs of natural resource management, including parks and reserves, in our changing environment.

Yours truly,

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Friday, 7 April 2006