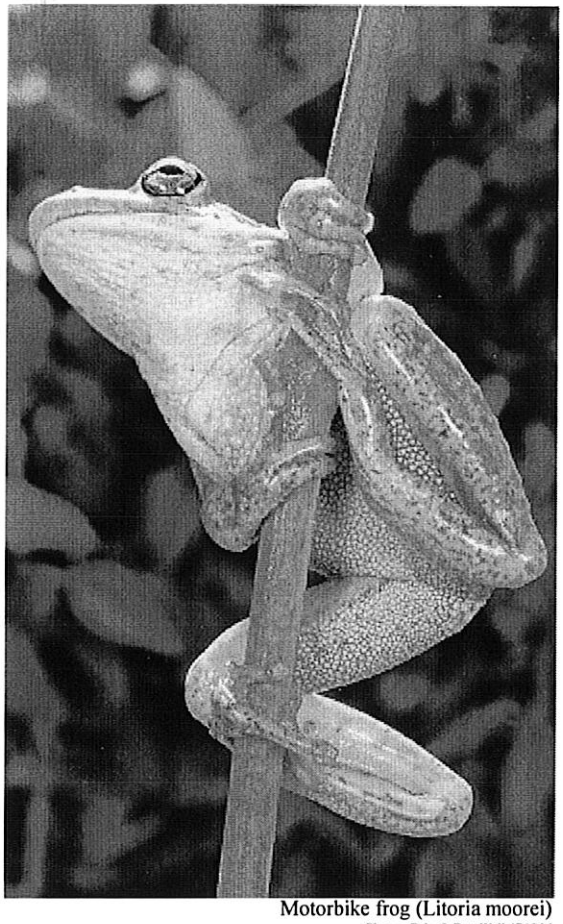

Motorbike frog (Litoria moorei)
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Biodiversity Conservation in Western Australia: Developing a State Strategy

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Table of Contents

1 Abstract

In line with the National Strategy for the Conservation of Australia's Biodiversity, the Department of Conservation and Land Management is beginning the development of a WA Biological Diversity Conservation Strategy, for completion in 2000. This will complement the proposed WA Biodiversity Conservation Act that is intended to repeal and replace the *Wildlife Conservation Act 1950*.

The State Strategy, which will be developed with input from the community and government agencies, will provide a framework for coordinating and integrating government and community efforts to conserve and sustainably use and manage Western Australia's biodiversity.

In line with the national goal to protect biological diversity and maintain ecological processes and systems, the Western Australian Biodiversity Conservation Strategy will aim to:

- establish a vision for nature conservation in Western Australia in which ecologically sustainable management across all lands and waters can ensure that the State's biological diversity is maintained;
- review conservation objectives to ensure that strategies for the maintenance of the State's biodiversity are in place;
- review the major issues involved in nature conservation in Western Australia, the scientific and social bases upon which it is managed and the constraints within which it is conducted; and
- act as a resource document for government agencies, the private sector and the community.

In this paper, *a suggested framework* for Western Australia's Biodiversity Conservation Strategy (including the strategy development process and communications plan), is presented.

2 Introduction

The aim in this paper is to describe the importance of developing a "Biodiversity Conservation Strategy for Western Australia", and to present a suggested *framework* for developing that Strategy. The paper will not provide extensive detail on Strategy content, as this is being developed. Instead, it will outline the suggested approach for its development: the communications plan; general structure; responsibilities for biodiversity conservation; and the timelines and milestones involved.

But first, it is important that we address three important questions: *what is biodiversity conservation? why conserve biodiversity?* and *why do we need a State Strategy?*

2.1 What is biodiversity?

The term biological diversity (or *biodiversity*) means different things to different people, but generally refers to the *number and variety of life forms and the processes that sustain it. It includes all species of living organisms* (different plants, animals and micro-organisms), *the genes they contain and the communities and landscapes (or ecosystems) in which they live*. It is not a fixed entity, but a constantly changing pool that is augmented by new genetic variations and evolutionary processes, and diminished by processes such as habitat loss or degradation, population decline and extinction (Commonwealth of Australia, 1996). The concept emphasises the interrelatedness of the biological world, and the importance of not only managing "things" but managing living processes. Much of Australia's biodiversity is yet to be described, and there is a dearth of knowledge about almost every ecosystem type in Australia.

Biodiversity covers the terrestrial, marine and other aquatic environments, and is often considered at three levels: genetic diversity, species diversity and ecosystem diversity:

- *species diversity* refers to the variety of species on Earth. The species is the most practical unit for measuring biodiversity, as each species has its own unique combination of genetic variations that makes it different to all other species. Recording the number of species is an enormous task. Species diversity is usually a measure of the number of species (species richness) and their relative abundance (species abundance) for a given area at a given point in time;
- *genetic diversity* refers to the variety of genetic information contained in all of the individual plants, animals and microorganisms, existing within species as well as between species. These extensive inherited variations make each individual organism genetically unique. In the longer term, the ability of a species to adapt to environmental change depends on the genetic variability it possesses;
- *ecosystem diversity* represents the variety of habitats, biotic communities and ecological processes. Groups of species (including plants, animals, fungal and microorganism communities) interact with each other and with their associated physical (non-living) environment to form ecosystems. As a result of the huge variety of different environments, diversity exists in the type and variety of ecosystems (including ponds, rivers, lakes, swamps, deserts, forests, heaths, grasslands, seashores, estuaries, coral reefs, wetlands, deep oceans). Ecosystem diversity has two interrelated components: the diversity of communities of species; and the diversity of interactions between community members (processes). These ecological processes represent the ways in which species use energy, water, gases, mineral elements, and inorganic nutrients (Beattie et al.,1995, NPWS, 1997).

Biodiversity is not simply knowing the number of genes, species or ecosystems in a defined area, but the "processes" surrounding those genes, species and communities. Interspecific interactions, natural disturbances and nutrient cycles are three examples of these processes.

2.2 Why conserve biological diversity?

Biodiversity in important to Western Australia. As identified in the "National Local Government Biodiversity Strategy" (1999):

> *" It is difficult to quantify the benefits of biodiversity conservation because without biodiversity we would not exist."*

The incredible species richness of our flora has been recognised internationally. The South-west of Western Australia, for example, is one of only 19 areas of world "megadiversity hot spots", mainly because of the large number of plant taxa (WWF & IUCN, 1994-5). The State's diversity and spectacular flora makes it one of the premier flora centres in the world. Our landforms are among the oldest, and we are host to a civilisation with a cultural heritage spanning more than 30,000 years and possibly as many as 60,000. The State (and some of our nearby islands) is also amongst the few remaining bastions[1] for wild populations of several native fauna species that once abounded across much of Western Australia and the Australian continent. Gilbert's Potoroo (*Potorous tridactylus gilbertii*), Woylies (*Bettongia penicillata*), Bilbies (*Macrotis lagotis*), Western Barred Bandicoots (*Parameles bougainville*), Banded Hare Wallabies (*Lagostrophos fasciatus*) and Numbats (*Myrmecobius fasciatus*) are several examples.

However, within Australia, and around the world, genetic, species and ecosystem diversity is now in decline. In Western Australia (like many other places), the loss of biological diversity is being caused by the destruction or permanent modification of natural habitats and by introduced species of plants, animals and other organisms (which can compete with, displace or prey on native species). In addition, direct human taking or disturbance of native species has the potential, if uncontrolled, to lead to loss of biological diversity.

[1] or often the sole bastion

Appropriate management of biodiversity is not limited to strict preservation or conservation, but is also about the sustainable use of resources. An environment rich in biological diversity has the additional benefit of being able to offer the broadest array of options for sustainable economic activity, and for adaptation to changing environments. A healthy, strong economy can only operate in the long term if there is a healthy, sustainable environment. Similarly, sustainable flora and fauna populations and ecological communities can only exist in the long term if there is a healthy environment, rich in biodiversity.

2.2.1 WA's commitment to global and national biodiversity conservation

The preparation of a Biodiversity Conservation Strategy for Western Australia will implement one of Western Australia's commitments under the National Strategy for the Conservation of Australia's Biological Diversity.

The National Strategy was prepared cooperatively, and has been endorsed, by the Commonwealth and State and Territory Governments, and has as its goal, the protection of biological diversity and the maintenance of ecological processes and systems.

The National Strategy seeks to fulfil Australia's commitment to the international Convention on Biological Diversity (1992) which was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit") and entered into force on 29 December 1993. The objectives of the Convention involve the conservation of biodiversity, sustainable use of its components, and the fair and equitable sharing of the benefits arising from the use of genetic resources (Convention on Biological Diversity, 1992). Key commitments in the Convention include:

- the regulation or management of biological resources important for the conservation of biodiversity, whether within or outside protected areas, with the view to ensuring their conservation and sustainable use;
- the control or eradication of those alien species which threaten ecosystems, habitats or species;
- the development of necessary legislation and/or other regulatory provisions for the protection of not only threatened species, but also threatened populations;
- identifying types of activities likely to have significant adverse impacts on the conservation of biodiversity, monitoring the effects of these activities, and regulating and managing them; and
- adopting economically and socially sound measures that act as incentives for the conservation of biodiversity.

2.3 Why do we need a Strategy?

As outlined in the National Strategy for the Conservation of Australia's Biological Diversity, Australia needs a comprehensive approach to bridge the gap between current efforts and the effective identification, conservation and management of Australia's biodiversity. The Biodiversity Conservation Strategy for Western Australia will provide one of the links which will help bridge that gap. The challenge is to translate local, state, national and international objectives and targets, into plans and processes which address biodiversity conservation at a state level.

In Western Australia, a Strategy is being developed which will provide a framework for the co-operative protection of biodiversity, within a context of change and continuing development. Implementation of a Strategy in Western Australia will require cooperation, coordination and commitment from all those responsible for the management of biodiversity, including government (Commonwealth, State and Local), industry, community groups and individuals. It will provide clear guidelines for biological diversity across these groups.

It is essential that a framework is established and implemented to protect biodiversity and maintain essential ecological and life support processes.

The Strategy will seek to:

- establish a vision for nature conservation in Western Australia in which ecologically sustainable management across all lands and waters can ensure that the State's biological diversity is maintained;
- review conservation objectives to ensure that strategies for the maintenance of the State's biodiversity are in place;
- review the major issues involved in nature conservation in Western Australia, the scientific and social bases upon which it is managed and the constraints within which it is conducted; and
- act as a resource document for government agencies, the private sector and the community.

3 Shared responsibility for biodiversity conservation

Biodiversity conservation is not the responsibility of just one organisation or several government departments. It requires an integrated approach and commitment across government, industry, community groups and individuals. Each has a key role to play in halting the decline in biodiversity in Western Australia.

Biodiversity conservation is a shared task, which will only be successful if all groups/sectors are adequately informed and willing to participate in programs to conserve biodiversity. It requires participation from all sectors across the State (including urban, agricultural, industrial, mining and pastoral). Effective partnerships within and between national, state and local government, communities, resource managers and the private sector need to be strengthened to enable the transfer of the expertise and information necessary to achieve effective on-ground action.

It requires the identification of clear roles and responsibilities in biodiversity management across the three levels of government, and active involvement of the community, private sector and Aboriginal and Torres Strait Islander people, in programs to maintain and restore biodiversity and achieve proposed biodiversity goals.

4 Overarching structure of the Western Australian Biodiversity Conservation Strategy

A number of strategies have been developed in Australia and internationally, for biodiversity conservation. Major biodiversity conservation strategies which have been completed for Australia to date, include:

- the National Strategy for the Conservation of Australia's Biological Diversity (1996),
- the National Local Government Biodiversity Strategy (1999),
- Victoria's Biodiversity: a three-document strategy on "Our living wealth", "Sustaining our Living Wealth" and "Directions in Management" (1997),
- the New South Wales Biodiversity Strategy (1999), and
- the ACT Nature Conservation Strategy (1998) and Implementation Plan (1998-99)[2].

[2] In addition to Western Australia, Tasmania and Queensland have also recently started developing State biodiversity conservation strategies. South Australia aims to use regional plans as the basis for a State strategy, through bioregional plans. Northern Territory has no immediate plans to develop a biodiversity strategy (CBN, 1999).

Each strategy differs widely in its framework. In the Victorian Strategy, for example, the State is divided into 13 bio-regions, and management responses are identified according to biodiversity condition within each region. In New South Wales, alternatively the Strategy is divided into six themes, whereby objectives and actions have been developed within each theme. The six themes are: community consultation, involvement and ownership; conservation and protection of biodiversity; threatening processes and their management; improving our knowledge; and implementation.

Due to the high degree of similarity of issues across regions in Western Australia (e.g. feral pest and weed management, threatened species protection), the Western Australian Strategy is likely to be developed using an a issue-based framework, rather than one which is region-based. However, this does not preclude important regional issues from being addressed in the Strategy. These issues will include wildlife conservation, protecting threatened species, protecting ecological communities and habitat, and management of threatening processes. One approach is to develop strategic objectives and actions for each of these issues as they relate to the following six themes:

- biodiversity on the land,
- marine conservation,
- freshwater (including inland water) biodiversity,
- improving our knowledge base,
- responsibility for biodiversity conservation, and
- priorities for action and associated responsibilities.

5 Steps in developing a biodiversity conservation Strategy

Developing a State Strategy which addresses biodiversity conservation can be quite a simple task. Developing one which addresses the requirements and concerns of all stakeholders involved, is endorsed by those responsible for biodiversity conservation (whether their contribution is great or small), and is able to be used as resource document for government agencies, the private sector and the community, is somewhat more complex.

The challenge is to determine a framework for biodiversity conservation in Western Australia whereby strategies for the maintenance of the State's biodiversity are established, priorities and responsibilities for biodiversity conservation are identified, and actions are agreed on.

To do this requires the development of a communications plan, where expertise is provided by stakeholders and professions from both within CALM and externally; advice and endorsements are negotiated at the appropriate levels to ensure they will be adopted by relevant stakeholders; and a community consultation process exists which avails the Draft Strategy for public comment.

5.1 Providing input into the Strategy – communications plan

As implied above, effective communication is an essential part of Strategy development. The following is a draft communications plan for the development of the Biodiversity Conservation Strategy for Western Australia:

1. Establish an advisory/reference group within the Department of Conservation and Land Management, with expertise in biodiversity;
2. Establish an external reference group. This group will provide input/feedback throughout the development of the Strategy, and assist in addressing the broad range of stakeholder issues;

3. Input, feedback and endorsement will also be sought across the range of sectors (including urban, mining, agriculture, pastoralism and industry) and interests; and
4. The community, and stakeholder and interest groups, will be able to provide comments on the Draft Strategy which will be released for public comment. These comments will then be addressed by the reference group and considered for the Final Strategy. It is also likely that the Draft Strategy (and other publicly disseminated information related to the Strategy) will be published on the World-Wide-Web.

5.2 Developing the Strategy

There are many ways in which a State Strategy may be written. As identified above, for example, they may have a regional focus, an issue focus or an action focus. The process for developing the Strategy may also vary, and is largely correlated to the nature of the communications framework.

The procedure for developing the Biodiversity Conservation Strategy for Western Australia is expected to include the following steps:

1. develop a draft "Table of Contents" or framework for the Strategy,
2. seek feedback on the framework and timetable for Strategy development, and draft Table of Contents, modifying where appropriate,
3. write the Draft Strategy, with input from a wide range of sources,
4. distribute the Draft Strategy to the community (and interest groups) for public comment,
5. finalise responses to public submissions and modify the Strategy accordingly,
6. seek State government endorsement for the Strategy and
7. publish final Biodiversity Conservation Strategy for Western Australia, as well as a "Response to Public Submissions" document.

6 Conclusion

At the request of the Western Australian Minister for the Environment, the Department of Conservation and Land Management will be developing a WA Biological Diversity Conservation Strategy, with community input, for completion in 2000.

This paper represents one of the initial steps involved in developing the Biodiversity Conservation Strategy for Western Australia. With the underlying aim of providing a comprehensive and effective communication framework from the start, this paper provides CALM's suggested approach for development of the Strategy.

Just as the Motorbike Frog (*Litoria moorei*) (which appears on the cover of this conference paper) cannot survive without a whole-of-community approach to ensure that their habitat and exposure to threat[3] is limited, so too are co-ordinated actions required across the community which aim towards the achievement of sustainability and biodiversity conservation for future generations.

It is evident from the above information, that the development of this Strategy will require cooperation, coordination and commitment from all those responsible for the management of, and all those who impact on, biodiversity (including government, industry, community groups and individuals).

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[3] in this case the fungus *Batrachytrium dendrobatidis* has been identified as a possible cause of significant local extinctions of frogs in eastern Australia, central America, and was identified in Western Australia for the first time in late 1998 *(LANDSCOPE, 1999)*.

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