#### NORTHERN TERRITORY OF AUSTRALIA

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## CONFIDENTIAL

CABINET DECISION

No. 7444

Submission No:

6303

Title:

**BIOLOGICAL DIVERSITY** 

Cabinet approved the Northern Territory's -

- (a) negotiating position for implementation of the International Convention on Biological Diversity;
- (b) negotiating position for finalisation and implementation of the National Strategy for Biological Diversity; and
- (c) submission to the House of Representatives Standing Committee on the Environment, Recreation and the Arts Inquiry into the Role of Protected Areas in the Maintenance of Biodiversity.

Macross

R.A.SETTER
Secretary to Cabinet

21 August 1992

#### THE NORTHERN TERRITORY OF AUSTRALIA

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#### COMPLEXALENCE

CONFIDENTIAL

FOR CABINET SUBMISSION No: .. Title: BIOLOGICAL DIVERSITY Minister Minister for Conservation, The Hon Mike Reed MLA To seek Cabinet endorsement of the Northern Purpose: Territory's: (a) negotiating position for the international Convention on Biological Diversity; (b) negotiating position for the National Strategy for Biological Diversity; and (c) submission to the House of Representatives Inquiry into the Role of Protected Areas in the Maintainance of Biodiversity. Relation to existing Consistent with existing policy. policy: Timing/ Urgent. Submission to the Cabinet Sittings of legislative priority: 21 August 1992 essential. Announcement of decision, N/A tabling, etc: Action required before announcement: N/AStaffing implications, N/Anumbers and costs, etc: N/A Total cost:

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Department/Authority	
COMMENT ON CABINET SUBMISSION No.	
TITLE: Biological Diversity	
COMMENTS:	

The following Departments supported the Submission:

Department of the Chief Minister
Lands & Housing
Department of Transport & Works
Department of Mines & Energy
Northern Territory Tourist Commission
Department of Law
Northern Territory Treasury

SIGNED:

**DESIGNATION:** 

DATE:

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Department/Authority DEPARTMENT OF I	NDUSTRIES AND DEVELOPMENT
COMMENT ON CABINET SUBMISSION No.	
TITLE: BIOLOGICAL DIVERSITY	

#### **COMMENTS:**

The Submission, in terms of protecting the NT rights and needs under the Inter-Governmental Agreement on the Environment, is supported.

However, it appears that little or no emphasis has been placed on the needs of the NT in terms of the development of our economy versus the established and in some cases now stagnant economies of other Australian States and Territories. The need for continued and responsible development in the NT is far greater than in the other areas and as such should be highlighted as requiring specific attention.

SIGNED:

L MACKINTOSH

DESIGNATION:

SECRETARY

DATE:

AUGUST 1992 CONFIDENTIAL

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Department/Authority.	DEPARTMENT	OF PRIMARY	INDUSTRY &	FISHERIES	
COMMENT ON CABI	NET SUBMISSIO	ON No.			
TITLE:	BIOLOGICAL	DIVERSITY			

The submission is supported in so far as the proposed negotiating positions and the draft submission are the most appropriate for their intended purposes.

The DPIF however, has strong reservations on the ambit nature of the definition and current approaches to biodiversity and anticipates considerable practical difficulties in implementation. This Department will not be able to support any biodiversity proposal which is inconsistent with the principles of sustainable agriculture nor, given the acknowledged undeveloped state of the NT, will it support proposals which will prevent sustainable and legitimate agricultural development on lands with appropriate capability.

SIGNED: Peter G Blake

**DESIGNATION:** 

6-49

**COMMENTS:** 

Secretary

DATE: 14.892

CONFIDENTIAL

Department/Authority	Library & Archives NT, NNRS 2575/R1, Volume :	39 <b>4, Dedision 744</b> 4
COMMENT ON CABINET S	SUBMISSION No.	
TITLE:	BIOLOGICAL DIVERSITY	
COMMENTS:		

The conserving of biological diversity as an objective of government policy deserves to be regarded with caution, particularly with regard to its potential impact on development objectives.

Provided any additional costs of meeting the obligations of the Convention are met by the Commonwealth, the Submission will have no direct budgetary or financial implications.

nocon

SIGNED:

N R CONN

**DESIGNATION:** 

UNDER TREASURER

DATE:

AUGUST CONFIDENTIAL

#### RECOMMENDATION

- 1. It is recommended that Cabinet approve the Northern Territory's:
  - (a) negotiating position for implementation of the International Convention on Biological Diversity (Attachment A);
  - (b) negotiating position for finalisation and implementation of the National Strategy for Biological Diversity (Attachment B); and
  - (c) submission to the House of Representatives Standing
    Committee on the Environment, Recreation and the
    Arts (HORSCERA) Inquiry into the Role of Protected
    Areas in the Maintenance of Biodiversity (Attachment
    C).

#### BACKGROUND

2. United Nations (UN) agencies, non-government organisations and numerous countries have, for many years, been promoting a greater awareness of the need to conserve biodiversity. Biological diversity is defined to mean the variability among living organisms including diversity within species, between species and of ecosystems.

- In 1982, the UN adopted the World Charter for Nature and, in 1989, the governing Council of the UN Environment Programme decided that an "international legal instrument on the biological diversity of the planet" would be developed. The Convention on Biological Diversity was signed by the Commonwealth Minister for the Environment at the UN Conference on Environment and Development ("The Earth Summit"), held in Brazil in June 1992.
- announced preparation of a national Strategy for the conservation of Australia's biodiversity. The preparation of this Strategy, by an advisory committee, proceeded in tandem with Australia's active involvement in the drafting of the international Convention. The Strategy, in effect, was the vehicle chosen by the Federal Government to promote its view of how the international Convention might be implemented in Australia. It was first released for public comment in March 1992, prior to the Earth Summiti
- The Federal Minister for Arts, Sports, the Environment and Territories had hoped to release the Strategy at the Summit, but numerous criticisms, especially from industry, prompted its withdrawal and a proposal for redrafting by a new committee with expanded industry representation.

- Governmental Agreement on the Environment (IGAE), affirmed its commitment to conservation of biological diversity, along with all other State and Territory Governments. The IGAE provides a procedure for the implementation of the international Convention through ANZECC and in consultation with other Ministerial Councils concerned with the utilisation of resources.
- 7. At its May 1992 meeting, ANZECC also established a Task Force to examine the implications of implementation of the national Strategy. That Task Force was given responsibility to carry through the procedure set out in the IGAE for implementation of the international Convention.
- 8. Acting on a reference from the Federal Minister, the House of Representatives Standing Committee on the Environment, Recreation and the Arts subsequently announced an Inquiry into the "Role e Protected Areas in the Maintenance of Biodiversity". The relationship between the Convention, the Strategy and the Inquiry is depicted at Attachment D.

#### CONSIDERATION OF THE ISSUES

#### The Convention

- 9. The specific provisions of the IGAE, in regard to the international Convention, reflected concern at its considerable implications for the management of natural resources. In common with other such conventions, it would provide the opportunity for the Commonwealth, through its foreign affairs powers, to intervene in many areas of environmental management that are otherwise State responsibilities.
- 10. It is probable that the Commonwealth will seek to legislate for implementation of the Convention, but that legislation could vary from the minimum necessary to meet national responsibilities, to a substantial duplication of States' and Territories' legislative infrastructure. It is proposed that the Territory should argue, in the forum provided by the ANZECC Task Force, that the Commonwealth legislate only where essential to meet commitments outside the constitutional competence of the States and Territories. The obligations imposed by the Convention should otherwise be met by application of relevant State or Territory legislation. The proposed position is set out in more detail in Attachment A.

#### The Strategy

11. The first draft of the National Strategy established unrealistic expectations and proposed poorly justified and uncosted actions. The Northern Territory should seek to have the re-drafted Strategy recognised primarily as a vehicle for the co-ordination of State and Territory responses to the Convention. It should not seek to add another significant layer of obligations nor seek a role for the Commonwealth beyond facilitation and integration of State and Territory programs. Attachment B sets out the proposed negotiating position regarding content of the Strategy in greater detail.

#### The Inquiry

- 12. The Convention obliges parties to establish representative systems of reserved (protected) lands to conserve biological diversity. The Northern Territory has previously indicated its preparedness to review its protected lands system. In endorsing the IGAE, the Northern Territory also recognised the need for an integrated approach to a national system of protected lands.
- 13. The HORSCERA Inquiry will specifically examine the adequacy of Australia's current system of terrestrial parks and reserves to sustain biodiversity. In undertaking the Inquiry the Committee will consider:
  - (a) public participation in the planning and management of protected areas;

- (b) the relationship of protected areas to wildlife corridors, remnant and rehabilitated habitats, and other areas which occur outside protected areas;
- (c) the role of Aboriginal and other indigenous communities, their land and their traditional knowledge, in protected area and biodiversity management; and
- (d) the interactive role of the Commonwealth, States and Territories in nature conservation.
- 14. The paper at Attachment C essentially supports the development of an integrated national system of reserved lands as a measure to preserve Australia's biodiversity.

  More specifically, it proposes a range of management options which include;
  - (a) establishing a core of protected areas;
  - (b) buffer zones surrounding the core zones;
  - (c) entering into management agreements to protect important natural features; and
  - (d) adoption of the principles of Ecologically Sustainable Development on all Territory lands.
- 15. A primary focus is to draw attention to the difficulties created by the Commonwealth's involvement in management of reserves (Kakadu and Uluru) within the Northern Territory and the need to resolve this issue before a coherent national approach can be achieved.

16. A mechanism is proposed by which individual States and Territories determine the most appropriate configuration of sites within their borders to meet local needs while contributing satisfactorily to a national network. Again, it is proposed that the Commonwealth adopt a facilitating and co-ordinating role, but avoid direct involvement in on-ground management.

#### **OPTIONS**

- 16. Because of the three tiers of consideration, namely the Convention, the Strategy and the Inquiry, there are several permutations of options which could be contemplated. However, the most pertinent options are:
  - (a) not approve Attachments A,B & C. This option is not recommended. It will be advantageous to demonstrate that the NT Government has a coherent plan to meet local needs and to ensure that the Commonwealth role is that of a facilitator rather than overiding The Territory's requirements.
  - (b) approve Attachments A,B & C as the Northern Territory position and submission to the HORSCERA Inquiry. This is the preferred option.

#### PUBLIC IMPACT OF THE RECOMMENDATIONS

8. The Northern Territory's participation in the protection of biological diversity should be favourably received.

The absence of a NT participation could attract a negative response.

#### FINANCIAL CONSIDERATIONS

9. There are no financial implications at this stage.

#### REGULATORY IMPACT

10. Not relevant at this stage.

#### EMPLOYMENT AND INDUSTRIAL RELATIONS

11. Not relevant at this stage. There may be some long term employment benefits if the reserve system is expanded and particularly if available for multiple use.

#### COMMONWEALTH, STATE AND LOCAL GOVERNMENT RELATIONS

12. The participation of the Northern Territory in the development of local and national strategies should facilitate liaison between the Commonwealth, States and Territories.

#### CO-ORDINATION AND CONSULTATION

- 13. All Attachments were prepared in consultation with the Departments of the Chief Minister, Mines and Energy, Lands & Housing, Primary Industry and Fisheries, and Law.
- 14. This Submission has been circulated to the Departments of the Chief Minister, Mines and Energy, Lands & Housing, Primary Industry and Fisheries, Law, Industries and Development, Transport and Works, the NT Tourist Commission and NT Treasury.

#### LEGISLATION

15. No new legislation is involved.

#### PUBLICITY

16. Not necessary at this stage.

#### TIMING

17. Urgent. Submission to the Cabinet Sittings of 21 August 1992 essential.

MIKE REED

ATTACHMENT A

## ANZECC TASK FORCE ON IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Recommended Negotiating Position for the Northern Territory

#### Broad Intent of the Convention

The primary objectives are the:

- conservation of biological diversity;
- (2) sustainable use of its components; and
- (3) the fair and equitable sharing of benefits arising from the utilisation of genetic resources.

Biological diversity is defined to mean the variability among living organisms including diversity within species, between species and of ecosystems. Effectively this dauntingly broad definition is narrowed by prescribing in some detail those components of biological diversity that should be identified and monitored.

#### Parties are to:

- develop national strategies, plans or programs or adapt existing programs to meet these goals; and
- (b) to integrate conservation and sustainable use of biological diversity "into relevant sectoral or crosssectoral plans, programs and policies".

Australia's influence on the language of the Convention is particularly evident here. I suspect that Article 6(b) will be meaningless to anyone not exposed to Australia's Ecologically Sustainable Development process.

#### Major Obligations

In implementing conservation and sustainable use programs, parties are to:

- (1) identify and monitor components of biological diversity, paying particular attention to those requiring urgent conservation action or offering the greatest potential for sustainable use.
- (2) identify and monitor processes or activities that have adverse impacts.
- (3) maintain data related to the above.
- (4) establish systems of protected areas.

- (5) manage biological resources important for the conservation of biological diversity both within and outside protected areas.
- (6) rehabilitate and restore degraded ecosystems and promote the recovery of threatened species.
- (7) regulate the release of living modified organisms resulting from biotechnology.
- (8) control alien species.
  - (9) promote compatibility between present uses of the components of biological diversity and conservation and sustainable use.
  - (10) preserve knowledge of indigenous people and encourage equitable sharing of the benefits arising from such knowledge.
  - (11) develop systems for <u>ex situ</u> conservation (maintaining organisms outside their natural habitats, often in captivity).
  - (12) protect threatened species and populations.
  - (13) regalate adverse processes or activities.

#### Implications for the Northern Territory

Ratification could give the Federal Government a formal role in virtually all significant facets of environmental regulation. The Convention establishes the usual obligations to develop or maintain an appropriate legislative framework. Thus first indication of Federal intent is likely to show in proposals for new or enhanced legislation. For example, the proposed Federal Endangered Species Act is said to be intended to provide appropriate protection to wildlife on Commonwealth lands, but it could be argued that broader powers are needed to meet obligations under item 12 above.

The Inter-Governmental Agreement on the Environment (IGAE) provides for State and Territory Governments to participate in implementation of the Convention. State/Territory positions will obviously be considerably strengthened if their legislative, policy and administrative infrastructure addresses competently the matters dealt with in the Convention. Incentive for the Commonwealth to enact broad duplicating legislation might thereby be reduced.

#### Recommended Northern Territory Position

In general, Territory law would appear to be capable of meeting the demands of the Convention, although some modification is desirable to avoid convoluted application of powers intended to meet other needs. It is recommended that the Territory's negotiating position should be to seek:

- (1) minimum legislative action from the Commonwealth, with new laws restricted to those necessary to meet inherently national obligations that cannot be addressed by existing legislation;
- (2) explicit recognition of the role of Territory and State law in meeting the obligations of the Convention, including (if feasible) explicit, binding accreditation of State/Territory laws and associated processes along the lines established in the IGAE;
- (3) a mutually agreed National Biological Diversity Strategy to provide the philosophical and operational framework within which relevant Territory and State legislation would be applied; and
- (4) agreement from the Commonwealth that all additional costs incurred in meeting the obligations of the Convention, including compensation, will be met in full from Federal sources.

It may be that the Commonwealth will identify areas where Territory legislation or other relevant practice will not satisfy the requirements of the Convention. In this event, it is recommended that, unless fundamental change in policy is required, the Territory's position should be based on a preparedness to make reasonable amendments, in preference to seeing the Commonwealth implement potentially over-riding legislation.

#### NATIONAL STRATEGY FOR CONSERVATION OF BIOLOGICAL DIVERSITY

Suggested Northern Territory Position for ANZECC Task Force

#### Principles

The Northern Territory should seek acceptance of the following general principles:

- (1) That the Strategy provide an administrative and philosophical framework to facilitate consistent and coordinated actions by the States and Territories rather than a vehicle for Federal intervention.
- (2) The Northern Territory to be treated as a State.
- (3) Recognition that the most appropriate strategies for conservation of biological diversity will vary regionally.
- (4) Recognition of the relatively undeveloped status of the Territory relative to other States.
- (5) Roles, responsibilities, and interests of the States, Territories and the Commonwealth to be interpreted as set out in the IGAE.

#### Content of the Strategy

#### <u>Objectives</u>

The objectives should be clearly defined and achievable and can be defined as follows;

- (1) to maintain biological diversity rather than to cause it to flourish;
- (2) to prevent or reduce species/sub-species extinctions as far as possible;
- (3) to maintain levels of genetic diversity within populations consistent with their long term persistence and continued evolution; and
- (4) to maintain ecosystem diversity, placing emphasis on the most diverse or otherwise significant systems.

#### Definitions

Consistent with the Convention on Biological Diversity.

#### Actions

#### The Strategy should:

- recognise regional differences in priorities and provide flexibility in the application of programs;
- (2) promote co-operative programs and community involvement in preference in to regulatory or coercive approaches;
- (3) assign priorities to all proposed actions;
- (4) in assigning priorities, assign cost-benefit criteria by:
  - focussing on systems that provide maximum returns in maintenance of biodiversity
  - emphasising "no-regrets" solutions that minimise conflict with existing land uses.
- (5) promote multiple use strategies for off-reserve conservation that include wildlife utilisation;
- (6) specify the scale at which biodiversity will be assessed, monitored and reported (as required under the international Convention on Biological Diversity);
- (7) be well integrated with other initiatives including ESD and the Endangered Species Strategy;
- (8) include costings of initiatives and identify sources of funding; and
- (9) provide compensation for those directly and adversely affected by implementation.

#### The Strategy should not:

- (10) encourage the Commonwealth to legislate in areas adequately covered by State or Territory law; or
- (11) deal with conservation of biological diversity in other nations.

ATTACHMENT C

DRAFT

1

HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON THE ENVIRONMENT, RECREATION AND THE ARTS

Inquiry into the Role of Protected Areas in the Maintenance of Biodiversity

A SUBMISSION FROM THE NORTHERN TERRITORY GOVERNMENT

#### Summary

1. The Northern Territory Government supports the development of an integrated national system of reserved lands to contribute to the conservation of Australia's biological diversity. Such a system need not impede responsible economic development in northern Australia.

- 2. The Northern Territory's existing network of protected lands does not comprehensively represent the range of biological and ecological variation present within its borders, and these gaps are not presently corrected by biogeographically complementary sites in adjoining States.
- 3. Strategies to enhance representativeness of the Northern Territory's reserve network have been under development for some time, but are compromised to some degree by a sparse biological information base.
- 4. Rather than delay enhancement indefinitely while the information base is improved, the Northern Territory proposes to proceed with identification of suitable configurations of protected lands while retaining the flexibility to modify configurations in the light of new information. Criteria for selection of sites will be primarily biological but will also recognise the important recreational role of protected lands.
- 5. A protected lands network is seen as one element of a broad strategy that places strong emphasis on off-reserve conservation. The Northern Territory's structurally intact landscapes provide unusually favourable opportunities to integrate management of protected lands with activities in the surrounding landscape. Conservation of mobile fauna in particular demands such broad-scale perspectives. The concept of the biosphere reserve provides a useful model.
- 6. The Northern Territory proposes a range of management options including:
  - (a) A core of protected areas within the public estate within which development activity is closely controlled. Status of individual sites will be varied only if an equivalent area can be substituted without compromising conservation objectives.
  - (b) Buffer zones surrounding core areas within which a narrower range of activities with the potential to damage natural values or public appreciation of the site are curtailed. A wide range of resource use, including sustainable wildlife utilisation will occur on these zones.
  - (c) Other usually smaller sites managed subject to agreement with private landholders or Aboriginal Land Trusts to protect important natural features. Management regimes will vary with the nature of the feature requiring protection and pre-existing land uses.

(d) Adoption of the principles of Ecologically Sustainable Development (in the manner accepted by Heads of Government) on all Territory ands with particular attention given to systems with clear ecological linkages to core areas.

- 7. The high standard of integration of policy and management prescriptions needed to achieve community acceptance of such a scheme is likely to be compromised by the active involvement of two separate Governments in implementation and management. Commonwealth participation in the management of Northern Territory sites (Kakadu and Uluru) should be rationalised prior to the implementation of a national system of protected lands.
- 8. The Northern Territory Government and Aboriginal landholders comanage a number of sites in partnership, and additional agreements will be required to achieve a genuinely representative protected lands system. Aboriginal traditional knowledge has proved important in the management of sites and flora and fauna, both on and off reserve. The Northern Territory Government is assisting Aboriginal people to record traditional knowledge.
- 9. The Northern Territory considers that national objectives for conservation of biological diversity by a system of protected lands can be most effectively achieved through the coordinated actions of the States and Territories, with the Commonwealth performing a valuable facilitating role, particularly in the planning and early implementation phases.
- 10. A procedure for implementation is outlined which is consistent with the Inter-Governmental Agreement on the Environment and draws upon the consultative role and resources of the Australian and New Zealand Environment and Conservation Council.

#### 1. Introduction

The Northern Territory Government regards the conservation of biological diversity as a fundamental responsibility of the entire Northern Territory community. It also recognises the important contribution that a reserve network can make in conserving biological diversity and in maintaining the ecological processes which sustain the current and future well-being of the Territory community.

Steps to enhance the Northern Territory's network of reserved lands were foreshadowed in the 1989 release of a discussion paper proposing the development of a conservation strategy for the Northern Territory (CCNT 1989), and re-iterated in a subsequent draft strategy (CCNT 1991) recently released for public comment. In common with other Australian governments, the Northern Territory recently made a formal commitment to improve the ecological representativeness of parks and reserves in its endorsement of the Inter-Governmental Agreement on the Environment (IGAE).

The Northern Territory has the potential to make a substantial contribution to the long term conservation of biological diversity in Australia. Its relatively intact landscapes provide unusually favourable opportunities to implement sound conservation strategies. However, at the national scale, goals in maintenance of biological diversity will be met only if the distribution of effort and emphasis flow from appropriate biogeographical criteria. Obviously the tropical, semi-arid and arid lands of the Northern Territory cannot substitute for sites supporting the wildlife of temperate Australia. Responsible economic development of the currently under-developed regions of northern Australia, including the Northern Territory, should not be impeded in an attempt to compensate for conservation difficulties in the more densely settled areas of the nation.

This submission sets out the Northern Territory's preferred approach to the achievement of both regional and national objectives for conservation of biological diversity, in part through a network of areas that are offered enhanced protection, without sacrificing or unduly suppressing the economic aspirations of the community. Specifically, the purpose of this submission is to:

(1) Outline the steps taken and proposed to achieve an ecologically representative network of reserved lands and other specially protected areas in the Northern Territory;

(2) discuss the extent to which such a network alone can achieve effective long-term conservation of biological diversity;

(3) outline other steps to encourage land management practices that sustain biological diversity;

(4) summarise an approach to integrated land and natural resource management appropriate to the region that will foster conservation of biological diversity in the Northern Territory, while permitting orderly and sustainable development of Territory resources for the benefit of the

community;

(5) examine the existing role of the Commonwealth in natural resource management in the Northern Territory and propose an arrangement to better reflect the principles outlined in the IGAE; and

(6) propose arrangements to integrate the Territory reserved and specially protected lands network with those of relevant States, in order to build a representative national system.

#### 2. Roles of Protected Areas

The first national parks declared by Governments in Australia were dedicated primarily to satisfy recreational needs. The recreational tradition has continued, accompanied by increasing public recognition of the additional valuable role of such areas in protecting native animals and plants. Community attitudes have evolved to the extent that conservation of resident fauna and flora is now often seen as the primary role of a park or reserve. Yet, despite recognition that untrammelled use may damage the very values that prompted declaration, there remains an expectation that access to such elements of the public estate should not be unduly constrained.

Facilitating broad public access to non-urban landscapes is likely to remain an important function of Australia's public conservation estate. Indeed demands for such services are likely to increase. Recreational use has been, and will continue to be, important in fostering awareness and appreciation of the natural values of Australian landscapes.

However, this history of association between recreation and conservation has left a particularly unfortunate and stubborn legacy: an uncritical acceptance of the notion that recreation is the only use of natural resources that can be effectively integrated with conservation. Too few Australians have been exposed to the idea that a site containing human settlements and supporting diverse human use of natural resources can be managed as an element of a protected areas network, and contribute significantly to the maintenance of biological diversity. Many non-Government conservation agencies actively promote the opposite view.

The Northern Territory Government considers that this Inquiry will best serve the interests of conservation in Australia if it promotes a broader perspective that recognises a totally protected site as one extreme of a continuum of land management options. Given the nature and scope of environmental legislation in Australia, all lands are to some degree protected from activities that are inimical to biological diversity and ecological function. The dichotomous view of sites as either totally protected or totally unprotected should be modified if a genuine integration of conservation practice with day-to-day human activity, as sought in the initiative for Ecologically Sustainable Development, is to be achieved.

Thus the term "protected area" is adopted with some reluctance as it perpetuates that dichotomy, but in the interests of simplicity in making this submission, protected areas are defined to include all delineated sites in which a primary management aim is the protection of the area's conservation assets.

#### 3. The existing protected area network in the Northern Territory.

On attaining self-government in 1978, the Northern Territory assumed executive responsibility for management of land and other natural resources, including Parks and Reserves previously declared under the Northern Territory Crown Lands Ordinance and the Northern Territory Wildlife Conservation and Control Ordinance. The current implementing legislation is the Territory Parks and Wildlife Conservation Act 1980 (TPWCA).

3.1 Sites administered by the Northern Territory

Protected terrestrial areas managed under the terms of the TPWCA (Fig. 1) encompass the full range of categories recognised in the Global Biodiversity Strategy (1992). They extend from "strict nature reserves" like the wildlife sanctuary at Melacca Swamp which was set aside to protect nesting saltwater crocodiles, to "protected landscapes" on private pastoral lands managed for maintenance of Magpie Goose nesting habitat by agreement under Section 74 of the TPWCA. Differing terminology notwithstanding, the range of management options employed by the responsible Territory Government authority (the Conservation Commission) encompasses those of most other States.

3.2 Sites administered by the Commonwealth

But there are also some important administrative differences, engendered chiefly by the Northern Territory's unusual political history. With self-Government in 1978, the Northern Territory accrued most State-like powers, including those relating to land and resource management. Nonetheless the Commonwealth has chosen to retain control over two of the Northern Territory's major reserves, Kakadu and Uluru (see Fig. 1). Both of these sites are managed by the Australian National Parks and Wildlife Service under the Commonwealth National Parks and Wildlife Conservation Act. In contrast to the partnership offered the other States at jointly managed sites (e.g. the Great Barrier Reef), the Northern Territory Government has little influence over the management of these important areas. In 1989 the Northern Territory made a submission to the Commonwealth seeking full self-Government, including acceptance of responsibility for Kakadu and Uluru.

Commonwealth involvement in management of protected lands in the Territory should be rationalised prior to the development and implementation of a national system of protected areas. Consistent definition of the roles and responsibilities of the various levels of Government will be essential if coherence is to be achieved.

#### 3.3 The Territory's natural environment

A number of biogeographic analyses have shown that the Territory's protected lands network is biased towards the two geographic and climatic extremes. The tropics of the north and the arid centre each contain a number of significant parks and reserves. But the semi-arid grasslands, shrublands and woodlands of the mid-latitudes are under represented. As a result more than one third of the vegetation formations recognised in the recently completed vegetation map of the Northern Territory occur only outside reserves. Similarly many endemic reptiles, frogs and mammals are found only outside currently protected lands. Those deficiencies are not presently redressed by incorporation of the missing elements in the protected lands of adjoining States.

A most important difference between the Territory's situation and that of the more populous southern States is that its protected lands are embedded in a matrix of often structurally intact, rather than extensively modified, landscapes. Thus many of the concerns that dominate the conservation debate elsewhere (role of habitat corridors, restoration of degraded systems) are less significant in the Northern Territory. Moreover, the acknowledged biogeographic inadequacies in the existing network do not pose an immediate serious threat to the maintenance of biological diversity.

The unbalanced distribution of parks and reserves is due in part to the transfer of two major sites (in the Daly River and Tanami Desert areas) to Aboriginal ownership pursuant to the Federal Aboriginal Land Rights (Northern Territory) Act 1976. The management of those sites by their traditional owners currently does not differ markedly from arrangements for the conservation of biological diversity that would have applied had they remained within the recognised protected lands network. Perhaps the most obvious short term impact of the current ecological biases in the public estate is denial of the opportunity for locals and visitors to experience and appreciate the full range of environmental and biological variation in the Northern Territory.

Despite the difficulties created by an administratively disjunct conservation estate, the Northern Territory Government remains committed to the development of a coherent system of protected lands to realise the Territory's special advantages. The unique opportunity to plan a system that avoids the consequences of habitat fragmentation will be an integral part of the Northern Territory's future development.

### 4. Opportunities to Improve the Northern Territory's Network

The Territory's advantages include structurally intact landscapes, and a dependent flora and fauna that has been less modified than other parts of the continent since European settlement, particularly in the Top End. The

opportunity to plan an integrated system of representative protected lands is not constrained by a paucity of choice among sites that retain native vegetation. Structurally intact sites are spread throughout the long environmental gradient from the tropics to the arid centre.

Indeed identification of the optimum configuration of sites requires choices from a dauntingly wide array of options. The procedure chosen to deal with this challenge is summarised in Appendix A. Briefly, the recently completed vegetation map for the Northern Territory will be used as a base to generate configurations of cells (0.25° of latitude by 0.25° of longitude) selected to satisfy criteria related to representation of all vegetation types, minimum areas of each vegetation type, and distribution of protected lands to span the entire ecological gradient.

Employing Geographic Information System (GIS) technology these configurations will be compared with available records of the distribution of individual species of vertebrate animals, plants, and other biological features (e.g. breeding colonies or major roost sites) to optimise representation of all fauna and inclusion of rare, endangered or vulnerable species. Configurations will be overlaid on various biogeographic regionalisations generated from classifications of climate, geology, topography, vegetation or avifaunal species composition to ensure adequate coverage of bioclimatic zones. Recreational and aesthetic (scenic) calues will be considered to assist in choices amongst biologically suitable options. Ecologically appropriate boundaries will be determined with reference to drainage lines and catchment areas.

These analyses will be extended to include consideration of land tenure. Configurations that minimise potential land use conflicts while still satisfying biological criteria ("no regrets" options) will obviously be given preference. The Optimal configurations identified in this way will be used to guide land use planning and in particular the long-term implementation and management of the protected lands system.

The Northern Territory emphasises that the protected lands network should be viewed as one element of a comprehensive conservation strategy that incorporates measures for off-reserve conservation of important habitats. However, there are a number of special constraints, additional to the economic and social costs influencing such programs in any jurisdiction, that influence the Territory's capacity to implement a coherent protected lands system and closely integrated off-reserve wildlife management regimes. These relate to a sparse biological information base and unusual legislative arrangements affecting management of land and wildlife.

4.1 Quality of Biological Information

The Vegetation Map of the Northern Territory provides a satisfactory base for broad scale assessments of the representativeness of existing and projected systems of protected lands. The procedure proposed for the preliminary

identification of favourable configurations mimics that proposed by Specht and others in 1974 (Specht et al. 1974). However, the data on distribution of individual species of flora and fauna to be used to refine those configurations and define precise boundaries remain somewhat patchy, despite considerable effort to assemble and capture in digital form all relevant data gathered and held by local, interstate, and overseas museums, and other relevant scientific agencies.

This deficiency will be addressed by regular updates of data and revision of configurations during planning and implementation, but decisions will inevitably be made on the basis of imperfect biological information. It follows that the chosen configurations will also be imperfect in a conservation sense, despite efforts to minimise error. At least three distinct responses to this difficulty are available.

The most obvious is rejected: that is, to await better information before acting to develop comprehensive conservation strategies. Another possibility is to implement a static but imperfect design and to seek to offset deficiencies, as they become apparent, by complementary off-reserve conservation strategies. Thirdly, a protected lands network might be viewed as an evolving construct with sites changing in status as knowledge improves and better configurations become apparent. The last two options are discussed more fully later in this submission. For the present it is sufficient to note that such strategies are possible only within a coherent, consistently managed planning environment.

4.2 Land and Fauna Management Regimes

Approximately 40% of land in the Northern Territory is held under inalienable freehold title granted under the Aboriginal Land Rights (Northern Territory) Act 1976. As previously mentioned, the Commonwealth administers some of that land for conservation under leasehold arrangements with the traditional owners and pursuant to relevant Commonwealth legislation. In addition, should Aboriginal Land Councils wish to enter into arrangements with the Northern Territory for the conservation management of wildlife, they may require the approval of the Federal Minister for Aboriginal Affairs (Section 22 of the Aboriginal Land Rights (Northern Territory) Act).

The Northern Territory has negotiated a number of agreements in relation to the management of land that give full expression to the rights and interests of Aboriginal people. Operations of the Gurig National Park established under specific enabling legislation (the Cobourg Peninsula Aboriginal Land and Sanctuary Act 1981) provide an example of successful Aboriginal comanagement of protected lands. Given the large areas of inalienable freehold land granted under land rights legislation, it is anticipated that additional agreements will be necessary to achieve a biologically optimum configuration of protected sites.

The Northern Territory also works with Aboriginal people in the management of fauna such as the endangered Mala Lagorchestes hirstutus and Bilby Macrotis lagotis in central Australia. Traditional Aboriginal knowledge has been important in the implementation of habitat management regimes, especially in regard to the use of fire. In the Top End an active ethnobotany program has been implemented to assist Aboriginal people to record traditional knowledge and use of plants for medicinal and other purposes.

However, despite these sucessful arrangements, the potential for both Federal and Territory agencies to be involved in concluding agreements for the management of land and wildlife inhibits the Northern Territory's ability to develop and apply common standards. Divided responsibility and blurred obligations may compromise the coherence of strategies designed to integrate protected sites into a matrix of conservation actions within and outside reserves.

#### 5. Conservation at a Landscape Scale

No matter how comprehensive the protected lands network, it will inevitably comprise a relatively small part of the Northern Territory's largely unmodified landscape. It would be perverse indeed to implement a network in such a way that it was achieved at the expense of public recognition and support for strategies for off-reserve conservation. The Northern Territory therefore strongly supports involvement of local communities in the development of regional conservation strategies. An example of the manner in which that involvement can be achieved is summarised in Section 5.1 of this submission.

Determination of the optimum balance between the area of reserved lands which are subject to tight developmental constraint and a more flexible, diffuse set of constraints over a larger part of the landscape, has been attempted in Australia only at a relatively small scale and over a narrow environmental range. The Northern Territory is one of the few remaining places on earth where such a tradeoff, which is implicit in the concept of biosphere reserves, can be realistically explored at a scale that recognises the needs of highly mobile fauna.

The Conservation Commission of the Northern Territory and the Northern Territory University have developed research proposals to describe and model the manner in which mobile fauna, like fruit- or nectar-feeding bats and birds, exploit unmodified landscapes and contribute to habitat maintenance by seed dispersal and pollination. It is intended that this research be integrated with CSIRO studies of the interactions between vegetation pattern, climate and soils along the north Australian tropical transect (NATT) running inland from the wet tropical north to the drier interior. Understanding how animals locate and use sites along this gradient, as habitat quality varies through space and time, is indispensable if we are to ensure the survival of the large proportion of the

Australian fauna that use movement to cope with erratic variation in environmental conditions.

Studies of movement and habitat use in the fragmented landscapes of most other parts of Australia cannot provide the answers because it is difficult to separate biologically meaningful patterns from artefacts forced by the absence of options. Nor is it likely that any static system of protected lands that does not take in most of the landscape can meet the needs of such fauna under all of the environmental conditions likely to be experienced over the long term.

Relevant research will be time consuming. Given that action to implement a representative protected lands system should not be unreasonably delayed, conservation of mobile animals therefore demands immediate complementary actions. The Northern Territory considers that those actions can best be taken within a multiple use framework that incorporates principles of ecologically sustainable development. The Mary River wetlands provide an important example of that process.

#### 5.1 The Mary River Wetlands

In recent years, considerable effort has been directed at systematic planning for conservation, recreation and tourism in the extensive wetlands formed in the lower courses of the Mary and Adelaide Rivers, which lie between Darwin and Kakadu National Park. This area has been identified as possessing significant biological values. It also attracts considerable interest for its recreational and tourism values. Yet these wetlands and their catchments currently provide a livelihood for a number of private landholders and support a range of land uses including pastoralism, horticulture, mining, recreational fishing and hunting, and tourism. These activities make an increasingly significant contribution to the Northern Territory economy.

Three major planning initiatives have been undertaken in the area: the Top End Wetlands Tourism Opportunity Study; the Top Ends Wetlands Conservation, Recreation and Development Study; and the Mary River Wetlands Visitor Action Plan. Together they provide a framework for the orderly development of the region that protects a spectacular fauna and flora while retaining broad community support and the active participation of affected landholders in conservation management.

The coastal wetlands of the Top End support a mosaic of habitats that vary erratically in their suitability for fauna as they change under the influence of unpredictable rainfalls and other disturbances such as fire. Research on waterbirds has demonstrated that over the long term a static system of reserves is unlikely to capture this variation to maintain populations near existing levels. To meet this challenge, it is necessary to extend wetland conservation actions to include unreserved lands.

Within the conceptual framework recognised by the Ramsar Convention (relating to wetlands of international importance) and the notion of wise use, compatible commercial activities have been linked with protection of important habitats on the floodplains of the Mary River. Extensive pastoralism, tourism, and utilisation of wildlife are capable of effective integration to combine broad scale conservation objectives with a sustainable economic return.

Wisely managed pastoralism need not significantly detract from wetland values. Prescribed practices for pastoral management include the removal of stock from floodplains during the wet (growing) season. Most tourism is confined to major waterways and focused on wildlife viewing and recreational fishing. Tourism development strategies are designed to keep total numbers below levels that would degrade either conservation values or the visitor experience. Utilisation of fish, principally the barramundi *Lates calcarifer* is carefully regulated by tight bag limits and other provisions to limit total catches.

Other wildlife utilisation includes harvest of the eggs of the Saltwater Crocodile, Crocodylus porosus (under a program endorsed by the International Union for the Conservation of Nature and Natural Resources (IUCN) as contributing positively to crocodile conservation) in a manner which preserves some of the world's highest densities of this species in the Mary River's permanent channels. Similar programs are being developed for the Magpie Goose Anseranas semipalmata. These programs are designed to provide a financial incentive for landowners to give special protection to habitats from which they derive a wildlife-related economic return.

Countering the major threats to these spectacular wetlands and their fauna is particularly expensive. Saltwater intrusion has caused broad scale loss of freshwater swamps. Invasion by the prickly exotic shrub *Mimosa pigra* can eliminate, over equally large areas, the grasses and sedges on which diverse components of the wetland fauna depend for food, shelter, and nest sites. Programs to exclude saline waters and eradicate *Mimosa* can consume a large part of the conservation budget and so divert funds from other high priority areas. It is only by exploiting the coincident interests of pastoralists, tour operators, recreational fishermen and conservationists that the necessary commitment of resources has been achieved. Costs of levees and mechanical and chemical treatment of *Mimosa* are shared by pastoralists and Government. Not only does the multiple use approach spread costs, but the commitment of public funds achieves broad community support because a wide range of interests recognises the benefits.

In this region adjacent to Kakadu National Park the relatively modest public estate complements the open (grazed) habitats on pastoral land that are favoured by many waterbirds. The reserves provide areas of rank (ungrazed) vegetation that favour more cryptic species like crakes and rails. Landholders have excluded stock from fragile habitats such as rainforest patches and

Melaleuca forests. These contributions to the habitat mosaic required to maintain a diverse wetland fauna are enhanced by agreements with landowners to forego certain management options on other unusually important sites. For example, one major landholder has entered into a formal agreement - under Section 74 of the Territory Parks and Wildlife Conservation Act 1980 - to protect breeding sites for the Magpie Goose. He will minimise disturbance during the breeding season, control Mimosa, refrain from introduction of exotic pasture species, and take no action to alter flooding or drainage patterns.

The local Landcare group has played a most valuable role. Involving landholders, industry, and the broader community in development and implementation of regional management strategies is a model which the Northern Territory regards as having wide application, especially to address conservation goals that cannot be met through a reserve system alone, even when it includes sites as large as Kakadu National Park.

#### 5.2 Kakadu and the Regional Landscape

Staff of the Australian National Parks and Wildlife Service directly involved in the management of Kakadu recognise that it is impossible to divorce management of any reserve, regardless of size, from the landscape in which it is embedded. For example, it has been demonstrated that Magpie Geese breeding on pastoral lands in the Mary River are among those that aggregate in Kakadu during the subsequent dry season. Breeding colonies within Kakadu are insufficient to support the spectacular dry season flocks that are such a feature of the Park. Unfortunately this understanding of biological linkages across the broader landscape is not always reflected in statements regarding the Park's role in the conservation of northern Australia's flora and fauna.

A view of Kakadu as an island in a sea of hostile activity was most recently presented in the nomination of the Park to the World Heritage List (ANPWS 1992). Among errors of fact and interpretation were statements regarding "bastions" and similar images, presenting Kakadu as a biological fortress. Guidelines for nomination to the List require satisfaction of conditions regarding site "integrity", but this should not involve denial of the interdependence of the Park and its surrounds.

This is more than an academic point, because the presentation of Kakadu in this way raises an obvious question. If, as implied, the Park is the answer to most of the region's conservation needs, why should activities outside its borders be constrained? In the Northern Territory's view, successful conservation of biological diversity with the active support and involvement of the community will require the opposite emphasis. Jurisdictional, attitudinal and management discontinuities should not be imposed on a landscape that demands integrated management.

#### 6. The Proposed Northern Territory Protected Area System

In the Northern Territory the proposed system of publicy-administered protected areas is seen as one component of a general strategy for the conservation of biological diversity, which includes the following elements:

A core of protected areas within the public estate, somewhat larger and more representative of the region's ecology than at present, within which development activity is closely controlled. Ecologically defined boundaries will in general be fixed but some variation will be possible to take account of new information. Status will be varied only if an equivalent area selected on objective biological criteria can be substituted without compromising conservation objectives identified for the site.

(2)Buffer zones surrounding core areas within which a narrower range of activities with the potential to damage natural values or public appreciation of the site are curtailed (e.g. heavy industry). These areas may form part of the public estate or be privately managed. A wide range of resource use, including sustainable wildlife utilisation will occur on these zones. Boundaries and status may be varied to take account of new information.

Other usually smaller sites managed subject to agreement with private (3)landholders to protect important natural features. Management regimes will vary with the nature of the feature requiring protection and preexisting land uses.

Adoption of the principles of Ecologically Sustainable Development (in the (4) manner accepted by Heads of Government) on all Territory lands with particular attention given to systems with clear ecological linkages to core areas.

Such an ambitious scheme will require the full participation of the Territory community. The consistency of approach and sensitivity to local knowledge, experience and attitudes needed to achieve active cooperation will inevitably be compromised if two Governments and their responsible agencies are involved directly in on-ground implementation and management.

On the other hand, the Commonwealth's support in the planning and early implementation phases will be necessary to produce a result that satisfies both national and local objectives for the conservation of biological diversity. Failure to achieve integration through genuine consultation may force the Territory and State Governments to satisfy local imperatives separately or in conflict with the national agenda.

The IGAE, with its emphasis on consultation and cooperation, therefore provides a valuable model for the implementation of the national system.

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#### 7. A National System of Protected Areas

The Northern Territory Government's endorsement of the IGAE reflected its support for the development of a national system of protected lands to represent the range of ecological variation present in Australia. In the Northern Territory's view the process of creating that system should observe the following broad principles within the letter and intent of the IGAE.

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#### 7.1 Principles

(1) Treat the Northern Territory as a State;

(2) explicitly recognise the primacy of the States' role to manage land and other natural resources within their borders;

(3) rely chiefly on cooperation among States to achieve the necessary levels of biogeographic and administrative integration of elements of a protected lands network;

(4) States, Territories and the Commonwealth to jointly determine

- constraints (if any) on the collective capacity of the States and Territories to achieve an integrated national system

- the Commonwealth's facilitating role to overcome those constraints and achieve integration to meet national objectives.

Subject to those principles, the Northern Territory suggests that an appropriate procedure for the detailed development of the national system of protected lands will include the following elements:

#### 7.2 Procedure

(1) The Commonwealth to develop a biogeographic regionalisation of Australia at an appropriate scale;

(2) that regionalisation to be submitted to the States and Territories for agreement and amendment as necessary;

(3) the national regionalisation to be adopted by the Australian New Zealand Environment and Conservation Council (ANZECC);

(4) ANZECC to establish criteria for establishment of a national protected lands network taking account of the endorsed biogeographic regionalisation;

- important criteria will include (i) specification of the number, extent, and optimal configuration of sites to be included in each biogeographic zone and (ii) a timetable with milestones consistent with decisions in regard to the implementation of the international Convention on Biological Diversity and the National Strategy for Conservation of Australia's Biological Diversity;

(5) each State/Territory to develop proposals for a protected lands network within its borders that:

- satisfies State objectives in regard to representativeness, scale and configuration
- is integrated with off-reserve conservation measures
- derives from extensive public consultation

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- minimises conflict with other existing or potential land uses

- appears achievable financially and likely to attract community acceptance within a reasonable time frame

- identifies options for variation of configurations to accommodate new information
- takes account of, and as far as possible, complements proposed configurations in States sharing the same biogeographic zones, and
- in combination with neighbouring States incorporates sites within each of the biogeographic zones recognised in the national regionalisation;
- (6) ANZECC to appoint a Task Force, that includes representation of industry and other resource users, to review and integrate State proposals to satisfy criteria for the national network;
- (7) the proposed network and funding arrangements to be subject to approval by First Ministers at a meeting of the Council of Australian Governments; and
- (8) the States and Territories to implement the agreed network with the assistance of the Commonwealth.

The procedure outlined is entirely compatible with the process developed by ANZECC for implementation of the international Convention on Biological Diversity and the associated National Strategy. Although presented here as a sequence of steps, many of these actions can be taken concurrently, with ANZECC providing the necessary linkages among the activities of the States, Territories and the Commonwealth.

It will provide the quality of coordination and cooperation needed to ensure that the national network as a whole is considerably more than the sum of the State and Territory-administered parts.

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## PROCEDURE FOR DESIGN OF A BIOLOGICALLY REPRESENTATIVE RESERVE SYSTEM

Goal:To design and implement a reserve system that provides the optimum long term protection of biological diversity in the Northern Territory.

#### Design principles:

- (1) Optimise ecological representativeness of reserved lands network.
- (2) Provide a spatial distribution of reserves that straddles the entire ecological gradient from the wet tropics to arid centre.
- (3) Maximise inclusion of rare or endangered vertebrate animals and plants in protected lands network.
- (4) Subject to above, seek aggregation of selected sites into large continuous areas, and so increase probability of maintaining populations of large or mobile fauna.
- (5) Consider need for biological corridors.

#### Procedure:

- (1) Divide the Northern Territory mainland and islands into units of 0.5 degrees of latitude x 0.5 degrees of longitude, ignoring existing land-use boundaries.
- (2) Employ the recently completed vegetation map to choose sites ensuring representation of all vegetation types identified in that map (112 formations characterised on structural and floristic features).
- (3) Test that base against known distribution patterns of the fauna and flora.
- (4) Refine base.
- (5) Repeat as necessary to provide optimum selection of cells based on existing information.
- (6) Refine boundaries based on topographic/biological features.

- (7) Check configuration against land systems data and national and Territory biogeographic regionalisation.
- (8) Describe optimum network based on purely biological criteria.
- (9) Repeat analysis incorporating administrative constraints.

#### **Biological Selection Criteria:**

#### (A) The vegetation base

- (1) Each vegetation type to be represented in two separate units of at least 50 km<sup>2</sup>, excepting cases where vegetation type is restricted to only one cell.
- (2) The minimum total area of each vegetation type shall be 400 km<sup>2</sup> or the whole of the area of that vegetation type if less than 400 km<sup>2</sup>.
- (3) Two sites representing the same vegetation type shall be separated by a minimum north-west distance of at least 50% of the total north-west range of that vegetation type.
- (4) Selection of cells shall be weighted to take account of proximity of cells representing different vegetation types, with adjoining cells being given the highest proximity rating.

#### (B) Faunal/floristic component

- (1) Each vertebrate species shall be represented in at least two selected cells, except where the known distribution of the species is confined to one cell.
- (2) Each of the monsoon vine forest/thicket types recognised in Russell-Smith (1991) and the wetland vegetation types recognised in Wilson et al. (1991) shall be included in at least two selected cells.
- (3) Increased weighting shall be given to cells having a high probability of supporting endangered species included on CONCOM's list of endangered animals, or other recognised listings of rare or endangered species (e.g. ROTAP).
- (4) Cells selected to represent the same species shall be as widely spaced as possible within the species "core" range (but cells at the periphery of the distribution shall be given lower weighting).

- (5) Increased weighting shall be given to cells known to contain large breeding or other seasonal "colonies" of mobile fauna.
- (6) Configurations that maximise the proportion of plant species known to be represented (from Herbarium records) will be preferred.

#### Administrative criteria:

- (1) Selection criteria for cells shall be weighted in the following sequence according to land tenure:
  - land already under Crown control (including existing reserves).
  - pastoral leasehold land
  - freehold land including Aboriginal land.
- (2) Available categories of protection shall include acquisition and full reservation, leaseback arrangements with full reserve status (eg. Kakadu and Cobourg Peninsula), and formal agreements (Protected Areas) with private landholders (including Aboriginal lands) specifying the range of actions permitted at the site but not assigning full reserve status.
- (3) Criteria regarding frequency of representation of vegetation types etc shall be modified to require more frequent reservation at lower levels of protection (ie agreements).
- (4) The analysis should be repeated with a range of upper limits on the total reserved area (excluding areas covered by agreements) beginning at 4%.
- (5) Regard will be had to reserve configurations in adjoining States with a view to linkage or identification of alternatives.

#### Computerised databases to be employed:

- (1) Vegetation map at 1:1,000,000 scale covering the entire NT mainland and islands.
- (2) Vegetation map verification sites (n=1200) with floristic and physiographic data.
- (3) Monsoon forest patches as mapped. Floristic and physiographic data for approximately 1200 patches.
- (4) Coastal floodplains. Floristic and environmental data for approximately 1000 sites on 1.5'x1.5' grid.

- (5) Herbarium data base with collection sites for voucher specimens.
- (6) Biological Records Scheme for vertebrate animals.
- (7) Museum (local interstate and international) records for vertebrate animals.
- (8) Collated literature records.

PARKS AND RESERVES OF THE NORTHERN TERRITORY LEGEND NATIONAL PARK (ANPWS) Produced by Conservation Commission N. June 1992. Projection Lamberta Conforma!

BOUNDARIES AS AT WAY 1992

# BIOLOGICAL DIVERSITY TACHMENT D

