

Australia's Commitments: Protecting Kakadu

Progress Report to the Bureau
of the World Heritage Committee

15 April 2000

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To resolve the remaining scientific issues, such as those raised in the ISP report, the Committee asks ICSU to continue the work of the ISP (with the addition of any additional members) to assess, in cooperation with the Supervising Scientist and IUCN, the Supervising Scientist's response to the ISP report. The report of the ISP's assessment should be submitted to the World Heritage Centre by **15 April 2000** for examination by the twenty-fourth session of the Bureau of the World Heritage Committee in 2000.

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1. Introduction: A summary update for the World Heritage Bureau, April 2000

The World Heritage values of Kakadu National Park are well protected. Management of Kakadu National Park, under the Board of Management with a majority of Traditional Owners, is world's best practice.

The Jabiluka mine project, situated on a lease adjacent to but not within the World Heritage Area, has been placed on standby and environmental monitoring mode since 14 September 1999. Operations on the lease have had no adverse impact on the World Heritage values of Kakadu National Park.

Future operations on the Jabiluka lease will progress in accordance with the stringent environmental conditions imposed by the Australian national government and the Northern Territory government. Operations will be consistent with the commitments given to the World Heritage Committee in July 1999. The environmental assessment process for the Jabiluka project has demonstrated, and the ongoing environmental management regime in place for the project will ensure that, the mining project will have no adverse impact on the World Heritage values of Kakadu National Park.

The mining company, Energy Resources of Australia Ltd (ERA), is now focussing on progressing the Jabiluka Mill Alternative (JMA). The Traditional Owners, through the Northern Land Council (NLC), gave consent to the JMA in 1982 in accordance with the Aboriginal Land Rights Act.

In April 1999, in *Australia's Kakadu: Protecting World Heritage* (p. vii), the Australian government informed the World Heritage Committee of its commitment to continue to protect the World Heritage values of the Kakadu World Heritage Property, and to be fully transparent in reporting on its actions in protecting those values.

This report, *Australia's Commitments: Protecting Kakadu National Park*, in April 2000, maintains that spirit of transparency and responsiveness.

This report meets, in full and on time, the request by the World Heritage Committee for a progress report to the twenty-fourth session of the Bureau on:

- progress on cultural mapping and the Cultural Heritage Management Plan (CHMP);
- progress on a comprehensive package of social and welfare measures for the benefit of the Aboriginal communities of Kakadu;
- details on the output and scale of any parallel activities at Ranger and Jabiluka and any legal provisions taken in that respect; and
- progress on addressing remaining scientific issues raised by the International Scientific Panel of ICSU.

This report also describes how the Australian government is meeting all the commitments made by the Minister for the Environment and Heritage, Senator the Hon Robert Hill, to the World Heritage Committee at its session on 12 July 1999 (Committee decision at Attachment A). A comprehensive summary report of Australia's progress was provided to the 23rd meeting of the World Heritage Committee in Marrakesh, in December 1999, which noted the report.

Cultural issues: Despite the complexity and sensitivity of the issues, there has been steady progress in meeting Australia's commitments. In recognition of the need for ongoing and detailed consultation with all stakeholders, Australia has taken action to ensure full consultation in this process.

All World Heritage cultural values are protected, and their continued protection remains a primary objective of the Australian Government. At the World Heritage Committee meeting in July 1999, Senator Hill and the Gundjehmi Aboriginal Corporation (GAC), representing the Mirrar (Traditional Owners of the Jabiluka lease), agreed on a process for the continued protection of cultural heritage. It was agreed that preparation of a report under the *Aboriginal and Torres Strait Islander Heritage Protection Act (1984)*, in response to an application by the GAC, should precede the development of

a cultural heritage management plan. However, the application under this legislation was later withdrawn by the GAC and so a report will not be prepared under this process.

To assist the mining company Energy Resources of Australia (ERA) in the development of a Cultural Heritage Management Plan (CHMP), Senator Hill has invited key stakeholders (including the GAC) to participate in a Reference Group. The Reference Group will advise and assist ERA in its development of the CHMP. To assist ERA advance the CHMP, the Australian government has taken the following initiatives:

- A framework of key principles for cultural heritage management, based on the Burra Charter and world's best practice, has been developed by the Department of the Environment and Heritage as a resource for the work of the Reference Group.
- The Minister has nominated an eminent Aboriginal facilitator to promote dialogue, and assist the Reference Group.
- ICOMOS Australia and ICCROM have been invited to provide technical advice to the Reference Group. ICOMOS Australia has agreed to provide independent advice on the technical issues.
- All stakeholders apart from the Gundjehmi Aboriginal Corporation (GAC) and the Northern Land Council (NLC) have agreed to participate in the work of the Reference Group.
- The GAC has, in response to the government's initiatives, proposed a separate and as yet undefined process that may commence after the current wet season (ending in approximately April 2000). The GAC has provided no details or timeframes for this process, and are still to accept, or decline, the opportunity to work with the senior Aboriginal facilitator and the Reference Group.
- ERA have committed to protect known cultural values on the Jabiluka lease by basing its ongoing planning on the independent review of an interim CHMP and on all previous research into the cultural values of the area, including studies commissioned on the impact of dust and vibration on rock art and archaeological sites. ERA has also agreed to contribute to the work of the Reference Group.

The Australian government notes that there are no threats to the cultural World Heritage values of Kakadu National Park. The government is committed to ensuring that Traditional Owners and relevant stakeholders have an opportunity to contribute to the development of a Cultural Heritage Management Plan by ERA that ensures the ongoing protection of cultural values on the Jabiluka lease area. Australia will continue to provide all necessary opportunities for the participation and active involvement of Traditional Owners in these processes.

Social and Economic: The Kakadu Regional Social Impact Study (KRSIS) Implementation Team, chaired by former Senator the Hon Bob Collins, continues to make significant progress with the implementation of the KRSIS recommendations, including in the key areas of housing and infrastructure, education, health and employment. Program initiatives are guided by the active involvement of regional Aboriginal organisations in decision making and service delivery. In combination, this package of initiatives will continue to significantly boost the social and economic development of the Aboriginal communities of Kakadu. Three (of four) regional Aboriginal organisations are participating on the Implementation Team for the KRSIS process. However, the GAC (the fourth Aboriginal association) has declined to participate in furthering the KRSIS process. The GAC has advised that they will not participate if ERA is represented in the KRSIS process. However, the other Aboriginal organisations in the region are actively participating and consider the inclusion and participation of ERA to be vital.

Sequential Mine Development: The commitment given to the World Heritage Committee in July 1999 stated that the Ranger and Jabiluka mines would not be in full commercial production simultaneously. ERA advised that in the short term it would concentrate on seeking the consent of the Northern Land Council (NLC) in accordance with directions of the GAC, for the Ranger Mill Alternative (RMA). Under the RMA, Jabiluka uranium ore would be milled at the Ranger Mine Mill. Providing that consent was received, Jabiluka would operate on a small scale to enable milling of very small tonnages of Jabiluka ore at the Ranger Mill and would not commence full commercial production until production at the Ranger mine had been scaled down.

In October 1999 the GAC, through the NLC, placed a 5 year moratorium on any consultation on the RMA.

The further commitment given to the Committee was that, in the event that consent was not obtained for the RMA, the Jabiluka Mill Alternative would be progressed in stages so that full commercial production would not occur until around 2009.

In response to the GAC decision, ERA is now focusing on developing the JMA. In progressing the JMA, the commitments made by ERA to the Committee will be met. All Australian Government and Northern Territory legislative requirements for the future development of the Jabiluka mine are being, and will continue to be met.

The development of the JMA will be within the framework described in the earlier Environmental Impact Statement (EIS) and Public Environment Report (PER) and will comply with all requirements arising from reassessment of those documents. The refinement of the JMA project will give effect to the requirement to return the tailings to secure, below-ground repositories, and to meet the conditions identified by the Supervising Scientist after reviewing the ICSU report. The details of this refinement are not yet finalised.

Science: The World Heritage Committee asked that the International Scientific Panel (ISP) assess, in cooperation with the Supervising Scientist and IUCN, the Supervising Scientist's response to the ISP report, and submit that report by 15 April 2000. However, after reaching its decision on 12 July 1999, the Committee did not allocate funding to allow the ISP to complete its follow-up work. To resolve this matter, the Committee allocated US\$65,000 during its meeting in Marrakesh, December 1999.

Discussions are underway with the ISP, through the World Heritage Centre, to establish the terms of reference of the follow-up work of the ISP. There is informal agreement that submission of a final report by 15 April 2000 is unrealistic, and consequently the ISP will now provide a progress report at that time, and a full report later in the year for consideration by the Committee. Australia has offered its full cooperation to the ISP to assist it meet the Committee's decision that it assess the second report of the Supervising Scientist.

The ISP has, however, indicated that it wishes to also receive additional information on any parallel development activities and the refined plans for Jabiluka. If it were to carry out work in relation to these matters, the ISP would be exceeding its role as set out in the decision of the Committee. Australia does not support any extension of the role of the ISP. (In any event, the additional information requested by the ISP is not available given that ERA is currently refining the JMA project.)

Reporting: Australia will continue to ensure that the World Heritage Committee is kept informed through regular reports on the state of conservation of the World Heritage Area. Kakadu National Park, and other Asia-Pacific regional properties, are scheduled to report under the systematic monitoring framework in 2002. This reporting will enable the Committee to remain vigilant in ensuring that the World Heritage values of Kakadu National Park continue to be well protected and are not under threat.

2. Australia's report

2.1. Protecting Kakadu's Cultural values

World Heritage Committee Decision:

Report on progress made with cultural mapping of the Jabiluka Mineral Lease and the Boyweg-Almudj site and its boundaries and the completion of the Cultural Heritage Management Plan with the necessary cooperation of the Mirrar, and appropriate involvement of other stakeholders and ICOMOS and ICCROM

The World Heritage Committee's decision asks Australia to report progress towards cultural mapping and the completion of the CHMP. Australia indicated to the Committee that in order to assist the CHMP process, it would seek to appoint an eminent and independent Aboriginal facilitator, and would invite key stakeholders to join a Reference Group to provide advice in relation to ERA's development of the CHMP.

Australia also made a commitment to consult with Traditional Owners on a possible cultural landscape nomination of Kakadu.

The Australian government is committed to seeing that the work of the Reference Group, the facilitator and the cooperation of all stakeholders provides a strong basis for the continued protection of the cultural values of Kakadu.

2.1.1. Cultural Heritage Management Plan

Australian Government Commitment 12 July 1999:

The Australian government will ensure the protection of all recognised sites of significance. The government is committed to seeking the full involvement of the Mirrar in finalising a rigorous Cultural Heritage Management Plan. In order to promote ongoing dialogue, the government:

- proposes to appoint an eminent and independent Aboriginal facilitator to work with the Mirrar people and ERA in the development of the Cultural Heritage Management Plan;
- has invited key stakeholders including Traditional Owners and ICOMOS to be members on a Reference Group dealing with cultural heritage protection measures, including cultural mapping and the completion of the Management Plan; and
- is undertaking an independent review of the Interim Cultural Heritage Management Plan.

Background

Energy Resources Australia Ltd (ERA) is required by the Australian government to develop a Cultural Heritage Management Plan (CHMP) for Jabiluka. This requirement arises from the environmental impact assessment process of the proposed mine at Jabiluka.

ERA prepared an Interim Cultural Heritage Management Plan (ICHMP) in 1998 to protect known cultural heritage areas in the Jabiluka Mineral Lease. The ICHMP was prepared as an interim measure pending completion of a detailed and wide ranging CHMP developed in consultation with stakeholders and Traditional Owners. In the ICHMP, ERA recognised the importance of the involvement of the GAC and other custodians in the completion of a final CHMP.

Progress and Outcomes

In July 1999 the Minister for the Environment and Heritage, Senator the Hon Robert Hill, proposed to the GAC that a Reference Group be established to provide a forum for discussion and a source of advice to assist ERA develop the CHMP. The Group would include representatives of GAC and custodians, the Northern Land Council, the Aboriginal Areas Protection Authority, ERA and the Department of the Environment and Heritage. The Minister proposed that ICOMOS Australia and ICCROM also be invited to provide technical advice to the Reference Group.

The GAC lodged an application on 19 May 1999 for protection of an area described as the Boiwek-Almudj site complex under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act). At the July 1999 World Heritage Committee meeting the GAC requested, and the Minister agreed, that the reporting process under the ATSIHP Act precede and inform the development of the CHMP and advance the cultural mapping information requested by the Committee.

In July and September 1999, the Minister travelled to the Northern Territory and met with officials of the GAC to discuss matters relating to the report under the ATSIHP Act and the CHMP.

On 22 September 1999, the Minister appointed a senior and highly respected lawyer with extensive experience and expertise in relation to indigenous legal issues as the reporter under the ATSIHP Act.

On 11 October 1999, the GAC withdrew its application under the ATSIHP Act for the protection of an area described as the Boiwek-Almudj site complex.

In October 1999, the Minister wrote to the GAC, the NLC and ERA, inviting each group to meet with the Department of the Environment and Heritage to discuss how the CHMP could be best advanced. The Minister also forwarded copies of the following reports outlining measures to protect World Heritage values:

- the independent review of the Interim Cultural Heritage Management Plan (ICHMP) by Dr Andree Rosenfeld. The review stated that in its broad coverage of relevant issues the ICHMP 'is comprehensive and logically structured'. Recommendations from this review are being addressed as part of the current CHMP process.
- '*Dust and the development of standards and monitoring methods to determine the potential impacts of uranium mining at Jabiluka on the rock art of the surrounding areas*' by Professor Alan Watchman. This report concluded that the effect of dust from activity at the Jabiluka Mine on nearby rock art sites and the surrounding Kakadu National Park would be insignificant. Furthermore, the report concluded that mining activities from the Jabiluka Mill Alternative (JMA) would pose a negligible threat to the rock art in the area surrounding of the development.
- '*Potential impacts of vibration on rock art and archaeological sites near Jabiluka*' by the Australian Geological Survey Organisation. This report concluded that vibration levels from blasts are low enough to ensure that all rock art and archaeological sites are not damaged.
- '*Framework for a draft plan of management for cultural heritage on the Jabiluka Mineral Lease*' by the Department of the Environment and Heritage.

All parties had responded to the Minister's letter by December 1999.

- ERA confirmed its commitment to developing a CHMP for Jabiluka which met world's best practice.
- The NLC acknowledged government initiatives regarding the CHMP and highlighted that the NLC must give primacy to the wishes, views and instructions of the Traditional Owners. The NLC was to further discuss with the GAC the proposal of future meetings with Government officials and the appointment of a facilitator for the CHMP.
- The GAC advised that selected custodians and elders from the Jabiluka lease area would meet after the current wet season (i.e. after April 2000) to consider further issues related to sacred sites in the lease area. Advice has not yet been received from the GAC on how this work would relate to the earlier extensive and well documented studies of sites of significance in the lease area.

In December 1999 the Department of the Environment and Heritage provided for discussion a draft set of CHMP objectives and principles and Draft Terms of Reference for the Reference Group. The principles aim to ensure that the CHMP is developed in accordance with world's best practice.

The Minister for the Environment and Heritage recommended to the Reference Group that it meet as soon as possible to consider the draft set of objectives and principles for the CHMP.

The GAC advised on 21 March 2000 that they did not wish to participate in the Reference Group at this stage. The GAC did not explicitly reject the Minister's proposed facilitator (a senior Aboriginal custodian and traditional owner from the region, an elected Commissioner of the Aboriginal and Torres Strait Islander Commission for the region and former Chairperson of the Aboriginal and Torres Strait Islander Commission). However, the GAC decided to await further details on the Jabiluka Mill Alternative, and proceed with its own, as yet undefined, process for cultural mapping. No time frames for the commencement and completion of this work have been provided by the GAC.

The Australian government will continue to ensure that ERA fulfils its requirement to develop a comprehensive Cultural Heritage Management Plan. In doing so, the government recognises that this will continue to be a difficult issue to progress if the necessary cooperation and involvement of the GAC is not forthcoming.

2.1.2. Cultural Landscape Nomination

Australian Government Commitment 12 July 1999:

The Government will consider and consult with Traditional Owners on:

- the possible nomination of the existing Kakadu National Park as a cultural landscape;
- a larger World Heritage cultural landscape nomination for land centred on the existing Kakadu National Park but extending considerably further north and south; and
- the potential inclusion of the East Alligator River Catchment in the Kakadu World Heritage property.

Background

Although not inscribed on the World Heritage list as a cultural landscape, the current Plan of Management identifies Kakadu National Park as a cultural landscape shaped by many generations of Traditional Owners.

The Kakadu Board has previously discussed the possibility of Kakadu being nominated as a cultural landscape. The current Kakadu Plan of Management specifies that "the Australian Government will be encouraged to make the case to the World Heritage Committee for Kakadu National Park's added recognition as a cultural landscape under the World Heritage Convention" (*Kakadu National Park Plan of Management*, p 59).

The Northern Territory World Heritage Ministerial Council meeting on 26 July 1999 adopted a resolution which asked "Parks Australia to examine and detail issues and processes associated with a World Heritage nomination of Kakadu National Park as a cultural landscape. As a separate exercise the Northern Territory would examine the possibility of Gurig, Nitmiluk and other areas outside Kakadu National Park being nominated for listing as a cultural landscape. In each case the views of Traditional Owners was to be first ascertained."

The Kakadu Board of Management has previously indicated its support only for a stand-alone cultural landscape nomination for Kakadu National Park, rather than one encompassing a wider area.

Progress and Outcomes

The Australian Government continues to emphasise the need for consultation with Traditional Owners before a decision is made on any possible nomination of Kakadu National Park, the greater Kakadu

region or Kakadu National Park and the East Alligator River catchment as a World Heritage cultural landscape. Further consultations with Traditional Owners through the Board of Management of Kakadu National Park commenced in July 1999. This matter was to be further discussed at the May 2000 meeting of the Board. In March 2000 Traditional Owners advised the Director of National Parks that the meeting of the Board of Management scheduled for May 2000 would be postponed until further notice, following the sudden death of the previous Board Chairperson, a senior Murumburr man (a clan with traditional land in Kakadu National Park). At the request of the Kakadu Board of Management, and following Aboriginal custom, no business will be conducted until completion of the funeral ceremonies.

If the Board wishes to proceed to the next stage with a cultural landscape nomination, this will then require:

- more detailed and extensive consultation with Traditional Owners to determine support (or otherwise) for such a nomination;
- consultations with all other local communities and relevant government authorities;
- identification and documentation of the cultural landscape values of Kakadu by experts in anthropology and archaeology, working with Traditional Owners; and
- collation of this information and preparation by the Australian government of renomination documentation.

2.2. Enhancing Social and Economic development

World Heritage Committee Decision:

Report on progress in the implementation, in response to the Kakadu Region Social Impact Study (KRSIS), of a comprehensive package of social and welfare benefits, together with the Northern Territory Government, for the benefit of the Aboriginal communities of Kakadu (including the Mirrar).

The KRSIS Implementation Team continues to make significant progress with the implementation of the KRSIS Action Plan, thereby providing a comprehensive package of social and economic benefits to the Aboriginal communities of Kakadu.

The Australian government is also implementing the other commitments given to the World Heritage Committee in relation to economic and social issues in Kakadu.

The progress being made in delivering on the World Heritage Committee decision and the additional commitments made by the Australian government illustrates the significant positive social and economic actions which are continuing in Kakadu.

2.2.1. Implementation of the Kakadu Region Social Impact Study (KRSIS)

Australian Government Commitment 12 July 1999:

Report to the WHC on “progress in the implementation, in response to the KRSIS, of a comprehensive package of social and welfare benefits, together with the NT Government, for the benefit of the Aboriginal communities of Kakadu” (source: WHC Decision 3b).

The National government has established a high-level task force, led by the Department of the Prime Minister and Cabinet, to progress implementation of the KRSIS Action Plan. Achievements to date include:

- **Housing and Infrastructure:** A significant upgrade of water and sewerage infrastructure in outstations in the Jabiru area, valued at over A\$3million, will commence this year. Additional housing valued at A\$1.2million will be provided.
- **Health:** The development of a regional coordinated health plan and associated measures for the region, including Kakadu, is expected to be complete by December 1999.
- **Employment:** The Government will fund ten new indigenous trainee positions which will allow ERA to train and employ additional Aboriginal people in its operations. ERA has already increased its direct Aboriginal employment levels from less than 10% to 15% of their workforce.

Background

The Kakadu Region Social Impact Study (KRSIS) was undertaken in the Kakadu Region in 1997 in response to a request by Aboriginal groups to examine the impacts of developments in the region, which includes tourism, mining and Park management. The KRSIS Study Advisory Group reported their findings and recommendations in a “Community Action Plan”. This group was informed and advised by a KRSIS Aboriginal Project Committee, which had representation from all Aboriginal Associations in the region.

The Community Action Plan was carefully considered by the Australian and Northern Territory governments, and Energy Resources of Australia Ltd (ERA). Commitments in response to KRSIS recommendations were detailed in a document titled “Consolidation of Responses to the KRSIS Community Action Plan” in November 1998.

Progress and Implementation

In response to the KRSIS Community Action Plan, a range of government programs have been brought together to deliver social and economic benefits to the communities of Kakadu. At the national level, a High Level Taskforce of Australian government departments has been convened by the Department of Prime Minister and Cabinet (DPMC) to ensure a coordinated whole of government approach to the implementation of KRSIS.

Portfolios involved in delivering social and economic benefits include the Aboriginal and Torres Strait Islander Commission (ATSIC), which is controlled by an elected Aboriginal and Torres Strait Islander board. ATSIC is a major policy advisory body to the Australian government on indigenous affairs and manages about half of the Australian government's Aboriginal-specific programs. ATSIC administers the Community Development Employment Program (CDEP), which provides employment opportunities in indigenous communities. The Indigenous Employment Program, administered by the Department of Employment Workplace Relations and Small Business (DEWRSB) has been utilised to develop further opportunities for employment and training in the Kakadu region. The Office of Aboriginal and Torres Strait Islander Health in the Department of Health and Aged Care (DHAC) has also been engaged in the review and development of health program outcomes.

Key Northern Territory (NT) government agencies have been involved in developing positive KRSIS outcomes.

At the regional level, KRSIS program design and delivery is coordinated by the KRSIS Implementation Team with an independent Chair the Hon Bob Collins (a former Australian government Senator and Minister in a previous government). The Implementation Team includes representatives from regional Aboriginal Associations, Australian and NT governments, ERA and the Northern Land Council (NLC).

There are four Aboriginal associations in the region. Each of these Aboriginal associations was invited to participate on the KRSIS Implementation Team. Three of the Aboriginal associations, the Gagudju, Djabulukgu, and Minitja Associations accepted the invitation and are actively participating in the KRSIS Implementation Team. These three Aboriginal associations regard the participation of ERA in the Implementation Team as vital. In contrast, the Gundjehmi Aboriginal Corporation (GAC) has declined to participate in the Implementation Team. The GAC is opposed to ERA's involvement in the Implementation Team.

The Implementation Team has met on several occasions to advance KRSIS outcomes. The non-participation of the GAC has had some impact on the capacity of the Implementation Team to address certain issues and proceed in a fully inclusive way.

At the local level there are three active community action groups which have been operating for a number of years and continue to work on KRSIS-related issues. These action groups are convened through the Jabiru Town Council and meet either monthly or bi-monthly to address issues relating to: accommodation and infrastructure; alcohol; and Aboriginal employment and training.

This coordinated approach to program delivery, with Aboriginal involvement at every level of design and implementation, has contributed greatly to providing a package of social and economic benefits that will contribute to the sustainable future of all communities in the region, including those represented by the GAC.

The efforts of both the Djabulukgu and Gagudju Associations should be acknowledged. The Djabulukgu Association is the organisation approved by ATSIC to receive funding and deliver services to Aboriginal people in the region. This includes health, disability and aged care, employment and training and commercial tourist activities and services. The Gagudju Association owns and operates hotel facilities and is a key participant in the current Hospitality Traineeship Program.

Housing and Infrastructure

An extensive housing and infrastructure program has commenced in the Kakadu region. It is expected that this will contribute significantly to improved health and other social policy outcomes.

- New housing construction and major upgrades are currently occurring in a number of Kakadu outstations. ATSIC have provided \$A1.2M for housing projects through the Indigenous Housing Association of the Northern Territory (IHANT). A number of projects have already been completed with others in progress while planning and design for the remainder is almost complete.
- ATSIC, through the National Aboriginal Health Strategy (NAHS) has allocated \$A3.08M to improve infrastructure, namely power, sewerage and water reticulation to Kakadu outstations. Any remaining funds will be used for further housing construction or upgrade. The planning phase has been completed and construction is due to commence at the beginning of the year 2000 dry season.
- At the request of local Aboriginal women, negotiations are underway with NT Housing to secure funding through the Crisis Accommodation Program (CAP) for establishment of an Aboriginal women's/families' refuge in Jabiru. A property has been secured and a local organisation has donated all furniture and fittings. The refuge is expected to be open before the end of June 2000.

Health

Improving health outcomes for Aboriginal people requires careful coordination of programs and community involvement and commitment.

- The Aboriginal Health Top End Planning Study has been completed. This major study has reviewed the scope for improvement to health services across all Aboriginal communities in the north of the Northern Territory, including the Kakadu region.
- The Office of Aboriginal and Torres Strait Islander Health (OATSIH) is currently liaising with organisations in the region on how to improve Aboriginal health care services, including the possible establishment of a local Health Board based on the successful trials at Katherine West and Tiwi Islands.
- The Djabulukgu Association has employed a new manager for its Aged Care, Disability and Health programs, and is establishing a Kakadu Region Health Advisory Panel to provide feedback to the Health Team on the effectiveness of health services for Bininj (local Aboriginal people). The Health Team is comprised of a Doctor and three Aboriginal Health Workers who provide health services both in Jabiru and in outstations.

Employment and Training

A broad range of employment and training opportunities have been developed under KRSIS and are now available to the Bininj in the mining, building, hospitality and other industries.

- The Community Development Employment Program (CDEP) operates within the Kakadu region, and is managed by the Djabulukgu Association. The Jabiru CDEP provides a community development approach to generating and filling local employment opportunities for and by local Aboriginal people, and also provides a broad training program. Jabiru CDEP recently won an award as 'Best Northern Territory CDEP Program'.
- CDEP operates a HOST program, where CDEP participants are 'hosted' by local employers over a 12-week period in a 'work experience' opportunity. Nine Bininj have moved from CDEP into permanent mainstream employment over the past 18 months as a direct result of this program. CDEP in Kakadu also operates a skills database to match individual skills to vacant positions in the local workforce as they arise.

- Hospitality traineeships for 22 Bininj and other Aboriginal people were launched on 7 February, 2000. This program has been jointly funded by Northern Territory University (NTU), DEWRSB, NT Department of Employment, Department of Training and Youth Affairs (DETYA) and the Aboriginal and Torres Strait Islander Commercial Development Corporation (CDC). Once trainees have successfully completed their 12-week training, they are expected to be appointed to permanent positions in the region.
- ERA has committed to increase their level of Aboriginal employment from a current 15% to 40% over the next three years. There are currently 41 Aboriginal people (from the local region and across Australia) working at ERA. The objective of the company is to expand this to 96 Aboriginal employees (40% of total employment) within the next three years. An Aboriginal Employment and Training Plan has been developed and implemented, and a Senior Aboriginal Affairs Officer and Aboriginal Policy and Training Officer employed.
- ERA has also developed a community traineeship program for Aboriginal employees. It will offer 5 Aboriginal 12-month traineeships commencing in July 2000, increasing to an additional 10 traineeships in both the second and third years of the program. Training will focus on developing literacy and numeracy skills, and entry to the program is via the CDEP program.
- Parks Australia has reviewed its Aboriginal Employment Strategy through a broad consultation process. Parks Australia has maintained a level of 30% Bininj employees for a number of years. In the past twelve months Parks Australia has also employed three additional Bininj as trainee park rangers. These trainees receive on-the job training as well as participating in formal accredited park management studies.

Education

An independent report investigating indigenous education outcomes in the Northern Territory was recently completed by Bob Collins (Chair of KRSIS Implementation Team). The report findings are helping with the development of strategies to address needs in the Kakadu region.

- A consultative report on establishing a new Aboriginal Education Unit at Jabiru Area School was completed in December 1999. The NT Department of Education (DOE) is currently considering an application for funding for the Unit.
- An Aboriginal Education Taskforce has been reconvened through the Jabiru Area School to provide advice and assistance on indigenous education issues throughout the school year. Cross-cultural awareness training for teachers at the Jabiru Area School was provided in 1999.
- Permanent pre-school facilities have been designed and will be established on a number of outstations during 2000. The Australian government Department of Family and Children's Services, Jabiru Town Council and the Aboriginal Benefits Account have jointly funded this project. The facilities will be constructed utilising CDEP labour, and operated by local women supported through the CDEP Early Childhood program.
- The Djabulukgu Association has submitted a proposal for funding of an indigenous cultural heritage multimedia project (based at the Jabiru Area School) under the Australian Government's Cultural Heritage Projects Program.

Bininj Economic Development Strategy

The KRSIS recommended that the Northern Land Council facilitate development of a comprehensive economic development plan focusing on Aboriginal interests in the region. The project will identify and assess possible economic scenarios over the next 20 year period – and will include an assessment of the tourism economy and realistic development opportunities. It will include broad consultation with Bininj and focus on the establishment of Bininj businesses and employment opportunities.

- A Steering Committee has been established to develop Terms of Reference and oversee the project. The Steering Committee has a majority of Bininj members. The anticipated date of commencement for the project is June 2000. The first meeting of the Steering Committee was held on 14 April 2000 with participation from all four Aboriginal Associations.

Business Development

- The Australian government funded Commercial Development Corporation has provided an investment of \$A7million last year to support Gagudju Association investments in the Crocodile Hotel, Cooina Lodge and Yellow Waters Cruise (all located in Kakadu). These enterprises provide an economic return, as well as employment and training opportunities for Bininj.

Sports and Recreation

- The Djabulukgu Association has secured funds from ATSIC for the provision of a range of Sports and Recreation Programs and is currently seeking capital funding to construct a full size football oval at Mudginberri outstation.
- A new Sports and Recreation Officer appointed at the Kunbarllanjnja community is developing programs and identifying possible funding sources to further develop sport and recreation opportunities, particularly for young people at that community.
- A regional Sports Carnival is being organised for August 2000. This regional initiative will see 15 communities competing in football, netball and basketball competitions.

Alcohol

Alcohol (Gunbang) related issues are addressed through the Gunbang Action Group, which has membership from the majority of organisations in the Kakadu region. The KRSIS has brought greater focus on addressing alcohol related issues, in an attempt to reduce the social and economic impacts of alcohol abuse. Strategies have included reducing take-away sales of alcohol, improved community education and support programs.

- Funds have been provided through the Northern Territory government's Living with Alcohol program to establish a community-based Night Patrol service for the Kakadu region. A Coordinator has been employed, two vehicles purchased, and 20 CDEP participants have received requisite training (driving, first aid etc) for employment in the Night Patrol service. A community information program is currently being implemented by the Coordinator and some Bininj employees, to inform the community of the purpose of the service, and how it will operate.
- Work on a Night Shelter is also progressing. Upgrade of the building is underway utilising CDEP labour, with water, power and fencing provided by the Gagudju Association. Consultation with the local Police is ongoing to ensure that the Night Patrol, Night Shelter and Police work effectively together in addressing alcohol related issues in the region.
- An application has been made for a grant from the Office of the Status of Women to fund an Indigenous Family Violence Strategy. This program would complement the work of the Alcohol Counsellor, providing an holistic strategy aimed at creating effective change within the community.

Women's Resource Centre

Negotiations are currently under way to secure an appropriate building in Jabiru for the Women's Resource Centre. A service has been operating for some time from an 'interim' facility.

2.2.2. Limits on Jabiru

Australian Government Commitment 12 July 1999:

The Government will impose a cap of 1700 on the size of Jabiru over the next 10 years in consultation with the Park Board and Traditional Owners.

Background

At the 1996 census, the population of Jabiru was 1455. A recent update (February 2000) by the Australian Bureau of Statistics (ABS) shows the current population to be 1467. ERA currently employs about 240 staff at Ranger (*Ranger Mine*, ERA 1999) and it was originally estimated that an additional 110 people would be employed during the Jabiluka operations phase (*Jabiluka at a Glance*, ERA 1998). ERA advise that the sequential development now planned for Jabiluka means that there will not be a significant increase in the number of long-term resident ERA employees as a result of the Jabiluka development.

Jabiru township is located within Kakadu National Park and as a consequence is subject to the provisions of the Kakadu Plan of Management. The fourth Kakadu National Park Plan of Management, prepared jointly by the Kakadu Board of Management and Parks Australia, requires that Jabiru develops in an orderly manner consistent with the wishes of Bininj/Mungguy (Aboriginal people in the Kakadu region) and the protection of the park environment.

Progress and Outcomes

A consultation paper has been prepared for discussion by the Kakadu National Park Board of Management at its next meeting. (Postponed due to the death of a senior Traditional Owner from Kakadu and former Chair of the Board).

The sequential development planned for Jabiluka means that no action by ERA is expected to result in the population of Jabiru increasing above 1500. The Government is consulting with the Kakadu Board of Management to develop, over a 10 year period, a population cap for Jabiru of 1700 long-term residents.

The Kakadu Board of Management, with a majority of Aboriginal members, takes a strong interest in issues relating to Jabiru, particularly the environmental and social impacts of the town, and the future economic and social needs of the region which Jabiru services (in particular health, housing, education, employment and so on of the Aboriginal residents).

2.2.3. Return of management responsibilities to Traditional Owners

Australian Government Commitment 12 July 1999:

With the agreement of Traditional Owners, the areas of the Ranger and Jabiluka leases that are not required for mining will be transferred to Traditional Owner management.

Background

The areas of the Jabiluka lease that are of direct interest to ERA are limited, and include the access road, the mine site, monitoring locations and a camp area. The situation at Ranger is more complex as, in addition to the mine site there are the rehabilitation areas of Jabiru East, the airport and other facilities.

At present, ERA actively manages the areas outside the immediate mine sites and related facilities, and has programs in place for the control of fire, feral animals and noxious weeds. On common boundary areas, these activities are conducted in cooperation with Kakadu National Park.

The lease area has undergone cultural mapping over a number of years which has resulted in large parts of the lease being recognised as significant under national heritage legislation. These areas have strict management regimes, and access is prohibited without the permission of the Traditional Owners. In the past, Traditional Owners have cooperated with cultural mapping exercises identifying sites of significance in the lease area.

Progress and Outcomes

ERA is fully prepared to transfer to the Traditional Owners the management of those areas of the lease not required for mining. However, the GAC has decided not to enter into a dialogue with ERA on this matter. It will not be possible to transfer management responsibilities for any areas of the lease to Traditional Owners while the GAC refuses to enter into any dialogue.

The Australian government and ERA remain willing to hold detailed negotiations with representatives of the Traditional Owners on achieving greater Aboriginal involvement in the management of relevant areas of the leases.

2.3. Sequential development

World Heritage Committee Decision:

Report on more precise details of the output and scale of any parallel activities at the Ranger and Jabiluka uranium mines as well as on any legal provisions taken in that respect.

The World Heritage Committee decision asks the Australian government to report on more precise details of sequential mining at Ranger and Jabiluka and related legal provisions. The Australian government also made other commitments (not included in the Committee decision) in relation to sequential mining and the overall regulatory framework.

2.3.1. The Timetable for Ranger and Jabiluka – sequential mining

Australian Government Commitment 12 July 1999:

The mining company (ERA) has advised the Australian government that the following timetable for mining at Jabiluka will apply:

- full scale commercial mining at Jabiluka would only be reached in about 2009 following the scaling down of production at the Ranger mine so that two mines would not be in full production simultaneously;
- construction work on the mine decline has been completed;
- geological proving through core sampling of the ore extent would be completed within approximately six weeks;
- in the near term ERA will be concentrating on seeking consent of the Northern Land Council in accordance with directions of the Traditional Owners, for the Ranger Mill Alternative. Providing that consent is received Jabiluka would operate on a small scale to enable milling of low tonnages (ie. less than 1% of mill throughput, of the order of 1000 tonnes per annum) of Jabiluka ore at the Ranger Mill. In the event that consent is not obtained for the Ranger Mill alternative, the Jabiluka Mill alternative will be progressed in stages so that full commercial production will not occur until 2009;
- apart from these activities, the mine will be put on a standby and environmental management basis from completion of core sampling in approximately six weeks.

The Australian and Northern Territory governments will ensure that these commitments are fully implemented. This will provide a pause, and an opportunity for the building of trust and confidence amongst all parties concerned.

Background

The Ranger mine has operated on a lease adjacent to Kakadu National Park for nearly 20 years. It has had no adverse impact on the Park.

The commitments relating to sequential mining address any potential concerns associated with the impact of two commercial scale mines (Ranger and Jabiluka) operating simultaneously on leases adjacent to Kakadu National Park.

There are two options for progressing the Jabiluka mine. The Ranger Mill Alternative (RMA) is the preferred alternative of the mining company. Further consent is required from Traditional Owners before the RMA can proceed. The Jabiluka Mill Alternative (JMA) is the other option. An extensive environmental assessment process has demonstrated that the JMA can proceed without having any adverse impact on the World Heritage values of Kakadu National Park.

Progress and Outcomes

ERA completed the core sampling drilling work referred to in the commitment in September 1999. The Jabiluka mine was then placed on a standby and environmental management basis. The mine remains on a standby and environmental management basis, meaning that no construction activity is occurring.

In October 1999 the NLC, on behalf of GAC, advised that the GAC had placed a moratorium on consideration of the RMA for 5 years. Following this decision, ERA publicly announced that it would be undertaking a strategic review and evaluation of the Jabiluka mine focusing on progressing the Jabiluka Mill Alternative.

ERA will continue to meet the commitments it gave to the World Heritage Committee as they relate to the JMA.

In order to progress the JMA in stages and have a mill operating at commercial levels by 2009, ERA advises it will need to conduct further site assessment work. This will allow ERA to develop specifications and tender for supply of mill equipment. Construction of the mill will then progress in stages, in accord with the Australian governments' regulations, and with the commitments given to the World Heritage Committee. It could take up to 3-4 years to build and commission the new mill, and will involve planning and associated above ground and below ground works.

In developing the Jabiluka Mill Alternative, ERA is required to (and will continue to) comply with Australian government requirements arising from the exhaustive environmental assessment process conducted on the Jabiluka project. This assessment concluded that implementation of the JMA would not have any adverse impact on World Heritage values of Kakadu National Park.

Full-scale commercial mining at Jabiluka would only be reached by about 2009, after production at the Ranger mine is scaled down, so that the two mines will not be in full commercial production simultaneously. In progressing the staged development of the Jabiluka Mill Alternative, ERA will comply with government environmental requirements arising from the exhaustive environmental assessment process conducted on the Jabiluka project.

Once the Ranger mine is exhausted, it will be rehabilitated to a standard that would allow it to be incorporated into the Kakadu National Park.

2.3.2. Benefits flowing from sequential mining development

Australian Government Commitment 12 July 1999:

Under the preferred alternative, the extension of the life of the operations at Ranger by the introduction of commercial operations at Jabiluka when Ranger is phased out will guarantee the continued flow of royalties to the Aboriginal community generally and provide a fresh basis for the development of employment and housing opportunities in the area.

Background

The sequential approach to mining will contribute to a stable flow of royalties to Aboriginal people at a similar level to current payments.

Progress and Outcomes

Agreements in place with the Aboriginal Community under Australian legislation guarantee royalty payments from the mines. The 5 year moratorium on the RMA means that the life of the Ranger Mill will not be extended. ERA will instead need to build a new mill at Jabiluka. The level of royalty payments at any time will be dependent on the timing and quantity of exports from each mine. The timing of the phasing out of Ranger and the coming on line of Jabiluka, recognising the commitment

that there will not be two full scale commercial operations underway at the same time, will have some effect on the level of royalties during the early phases.

2.3.3. Enforcement of the Environmental Requirements

Australian Government Commitment 12 July 1999:

The security of environmental management at the Ranger and Jabiluka mines will be further improved by amending the legal regime governing enforcement of environmental conditions to strengthen the role of the National government.

Background

The Jabiluka project is the subject of a regulatory regime that is world's best practice. This regime is implemented through interlocking arrangements between the Australian government and Northern Territory government. These regulatory arrangements are imposed both by Northern Territory legislation and by Environment Requirements set by the Australian government in consultation with Aboriginal representatives, ERA and the Northern Territory government.

The Australian government and the Northern Territory government are in the process of finalising an agreement that will strengthen the role of the Australian government in reinforcing environmental conditions. In summary, the agreement will formalise a mechanism under which the Northern Territory government undertakes to implement environmental requirements to the satisfaction of the Australian government. This will occur through the continuation of the strong cooperative arrangements already in place between the two governments.

In addition, the Australian government's Environmental Requirements for the Ranger uranium mine, which have recently been revised to further enhance the protection of the environment, have been incorporated, as appropriate, into the Ranger General Authorisation (RGA) which is a legal instrument issued by the Northern Territory Government with which the mining company must comply. Although the mining company has always been required to comply with the Australian government's Environmental Requirements (for Ranger and Jabiluka), their incorporation into the RGA strengthens the role of the Australian government in the regulation and environmental management of the Ranger uranium mine.

The Australian government's Environmental Requirements for the Jabiluka uranium mine are currently under review to further enhance the protection of the environment. Once the review process has been completed, they will be incorporated, as appropriate, into instruments issued by the Northern Territory government.

Similar to Ranger, this will strengthen the role of the Australian government in the regulation and environmental management of the Jabiluka uranium mine.

2.3.4. Consultation on initiatives and the Ranger Mill Alternative

Australian Government Commitment 12 July 1999:

The company will work closely with the Government, Traditional Owners and, through the Government, with the World Heritage Centre.

Progress and Outcomes

The Company is engaged in extensive consultations with indigenous organisations in the region with a view to achieving the best possible outcome for the Jabiluka project and the indigenous population.

2.3.5. Best Practice Rehabilitation

Australian Government Commitment 12 July 1999:

An irrevocable bank guarantee, sufficient to guarantee the future rehabilitation of the Jabiluka lease to a standard that would allow the area to be incorporated in the National Park, will be required. A long-term monitoring program will be carried out following rehabilitation.

Progress and Outcomes

Security in the form of an irrevocable bank guarantee is in place covering site works already in place. The level of the security held is assessed annually and adjusted as appropriate, with input from key stakeholders including the Supervising Scientist and the Northern Land Council. The Australian government is working with the Northern Territory Government to ensure, as works progress beyond this early stage, that independent assessment of the required future level of security will be undertaken.

2.4. Resolving Scientific issues

World Heritage Committee Decision:

To resolve the remaining scientific issues, such as those raised in the ISP report, the Committee asks ICSU to continue the work of the ISP (with the addition of any additional members) to assess, in cooperation with the Supervising Scientist and IUCN, the Supervising Scientist's response to the ISP report. The report of the ISP's assessment should be submitted to the World Heritage Centre by 15 April 2000 for examination by the twenty-fourth session of the Bureau of the World Heritage Committee in 2000.

The World Heritage Committee requested the International Scientific Panel (ISP) to assess, in cooperation with the Supervising Scientist and IUCN, the Supervising Scientist's response to the ISP report, and to submit that report by 15 April 2000. However, in reaching its decision on 12 July 1999, the Committee did not allocate funding to allow the ISP to complete its follow-up work. To resolve this matter, the Committee allocated US\$65,000 during its meeting in Marrakesh, December 1999.

On January 31, the World Heritage Committee provided, after consultation with the ISP, draft terms of reference (TOR) and a reporting timeframe for the ISP. Given the delay, it was apparent at this stage that the ISP realistically could not report by 15 April. Therefore Australia recommended (on 16 February) that the ISP submit a progress report on 15 April, with its final report to be submitted later in the year (after a visit to Kakadu) for the Committee's consideration. The ISP agrees with this recommendation and has incorporated it into the latest revision of the draft TOR for the ISP.

The draft TOR provided by the World Heritage Centre on 13 March provided for an assessment by the ISP of the Supervising Scientist's response to the ISP report *and an examination of the details of any parallel activities at Ranger and Jabiluka and the revised plans for mining at Jabiluka*. Australia responded noting that the Committee decision requested the ISP to "assess ... the Supervising Scientist's response to the ISP report" and indicated that the ISP should not seek to exceed its mandate. Australia will not support a proposal by the ISP to undertake an examination which goes beyond the role given to the ISP by the Committee. In this case, it is the role of the state party and not the ISP to report on the details of any parallel activities and revised plans for mining. In any event, as ERA is now in the process of refining its plans for the JMA (partly to meet commitments given to the Committee in relation to sequential mining), the information sought by the ISP is not available.

Australia has agreed to facilitate a visit to Kakadu by the ISP and to provide any additional information consistent with the Committee's request to the ISP as a result of the visit. Australia expects that the final report of the ISP will address each of its original recommendations (made in April 1999) and will advise the Committee if they have been implemented.

In Australia's view, this process would help bring the assessment of the scientific issues to a timely and satisfactory conclusion.

2.4.1. Implementing the ICSU recommendations

Australian Government Commitment 12 July 1999:

All of the recommendations made by the Supervising Scientist and the International Council of Scientific Unions on the scientific issues have been or will be fully implemented and incorporated into the design of the Jabiluka mine.

Background

The World Heritage Committee requested, at its meeting in Kyoto in December 1998, that the Supervising Scientist conduct a full review of scientific issues raised by the Mission to Kakadu. The Supervising Scientist provided his report (SSR138) to the World Heritage Centre on 14 April 1999.

An Independent Scientific Panel (ISP) convened by ICSU reviewed SSR138 and provided comments to the Supervising Scientist. The Supervising Scientist provided a supplementary report to the World Heritage Centre responding to the ISP review in late June 1999.

The supplementary report of the Supervising Scientist included additional information which demonstrated that most of the ISP recommendations had already been implemented. The Supervising Scientist's report also presented further information and analyses relevant to the remaining recommendations which, in the opinion of the Supervising Scientist, should satisfy the ISP that the natural World Heritage values of Kakadu National Park are not threatened by the development of the Jabiluka uranium mine. The supplementary report was not reviewed by the ISP prior to the July 1999 meeting of the World Heritage Committee.

Progress and Outcomes

The Minister for the Environment and Heritage has written to the Chairman of ERA seeking ERA's cooperation in ensuring that the recommendations of SSR138 and the ISP review are implemented. ERA has responded, stating that it will comply with these recommendations. The recommendations are being implemented through additional requirements imposed by the Australian and Northern Territory governments. (refer to Attachment B).

A summary of the status of the implementation of the recommendations of the ISP of ICSU is provided in Attachment C. All of the ISP recommendations have either been fully implemented (refer to '*Response to the ICSU Review of the Supervising Scientist's Report to the World Heritage Committee*') or will be implemented through additional requirements imposed by the Australian and Northern Territory governments. Their implementation will be assessed on an ongoing basis as they become applicable to the development of the project.

2.4.2. Implementation of the Supervising Scientist's recommendations

Australian Government Commitment 12 July 1999:

The recommendations of the Supervising Scientist made in his report to the World Heritage Committee will be implemented by ERA.

Progress and outcomes

As discussed in the previous section, this commitment has been fully implemented by the Australian government requiring the adoption by ERA and the Northern Territory government of the recommendations of the Minister for Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of that report by the ISP of ICSU.

2.4.3. Strengthening the Role of the Supervising Scientist

Australian Government Commitment 12 July 1999:

The role of the Supervising Scientist, an independent statutory authority that monitors and oversees the regulation of mining on the Ranger and Jabiluka leases, will be strengthened and its powers enhanced.

Background

The Supervising Scientist, an independent statutory position that reports directly to the Minister for the Environment and Heritage, undertakes a comprehensive environmental research program and implements a supervisory regime to ensure that the environment of the Alligator Rivers Region, which includes Kakadu National Park, is protected from the potential impacts of uranium mining.

Progress and Outcomes

The Office of the Supervising Scientist (OSS) in Darwin, the capital of the Northern Territory, has been strengthened with the relocation of positions from Canberra, the capital of Australia. A new senior position to head the Office of the Supervising Scientist in Darwin has been created and filled. These relocation and recruitment initiatives have resulted in an increase in staff in the Darwin office from three to seven. This will enhance the effectiveness of the OSS in ensuring that uranium mining operations in the Alligator Rivers Region do not have an adverse impact on the World Heritage values of Kakadu National Park. Coordination of the supervision functions undertaken by the Office of the Supervising Scientist and the research functions undertaken by the Environmental Research Institute of the Supervising Scientist will also be enhanced by these changes.

The Australian government's Environmental Requirements for the Ranger mine were amended on 9 January 2000. Under the amendments, the powers of the Supervising Scientist were enhanced by the explicit inclusion of the reserve powers under which the Australian government, on the advice of the Supervising Scientist, can take action to ensure the protection of the environment from the effects of uranium mining at Ranger. Similar action is underway to revise the Environmental Requirements for Jabiluka (see section 2.3.3).

2.5. Protecting Kakadu's World Heritage values

The Australian government is committed to the identification, protection, conservation, presentation, and transmission to future generations of the World Heritage values in each of its 13 properties inscribed on the World Heritage List. Australia takes its obligations and commitments under the World Heritage Convention seriously, as it has done since ratifying the Convention in 1974.

In the report presented to the World Heritage Committee in Paris in July 1999, "*Australia's Kakadu: Protecting World Heritage*", the Australian Government made a series of commitments, in relation to matters not addressed in the Committee decision. Implementation of these commitments will strengthen even further, now and in the future, the protection of the World Heritage values of Kakadu National Park - a special place for all Australians and people throughout the world. The commitments include additional protective measures in the areas of legislation, tourism, invasive and alien species, and monitoring. Australia has also established, and is committed to developing the Asia-Pacific Focal Point for World Heritage Managers to assist regional States become parties to the World Heritage Convention, identify and manage current and potential World Heritage properties.

Progress

The Australian government is not required by the Committee decision to report on progress in implementing these commitments. However, the government is pleased to report that the commitments made in July 1999 by the Australian Government are being met and Australia continues to develop and implement innovative ways to ensure the safekeeping of the World Heritage values of Kakadu National Park and its other World Heritage properties.

2.5.1. The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Australian Government Commitment to World Heritage Committee 12 July 1999:

The *Environment Protection and Biodiversity Conservation Act* (EPBC Act), just passed by the Australian Parliament, contains a number of new provisions which will strengthen protection for National Parks and World Heritage areas, and which promote the rights of indigenous people.

Background

Until this year, Australia had been the only State Party to the World Heritage Convention with national legislation to protect the values of its World Heritage Properties (South Africa has now also enacted national legislation). In July 2000 the *World Heritage Properties Conservation Act 1983*, will be replaced by the *Environment Protection and Biodiversity Conservation Act 1999, (EPBC Act)*. The EPBC Act will provide more comprehensive and proactive protection for World Heritage values than the preceding legislation. It will also provide enhanced protection for other matters of national environmental significance, including Ramsar wetlands, nationally threatened species and ecological communities, Commonwealth marine areas and migratory species. The EPBC Act will promote a cooperative approach to the protection and management of the environment involving The Australian and state governments, the community, landholders and indigenous peoples. The EPBC Act specifically recognises the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity, especially in places such as Kakadu.

Progress and Outcomes

The EPBC Act ensures the conservation of Australia's World Heritage Properties by providing up-front protection. Under the EPBC Act all actions which are likely to have a significant impact on the values of World Heritage properties will be subject to a strict environmental assessment and approval regime. The EPBC Act regulates any action that has, will have or is likely to have, a significant impact on the World Heritage values of a declared World Heritage property, including any such action taken outside the boundaries of the World Heritage property. The Act will apply to actions not already assessed under the existing legislation. Damaging the value of a World Heritage property carries

significant penalties - a maximum fine of \$550,000 (individuals) and \$5.5 million (corporations) or in extreme cases a jail term of up to 7 years. Under the Act, the Director of National Parks is required to prepare Management Plans for Kakadu National Park and Uluru Kata-Tjuta National Park. The EPBC Act also requires that the Plans specify how Australia's international obligations under the World Heritage Convention and Ramsar Convention will be met.

The EPBC Act establishes World Heritage management principles, which will provide nationally consistent management standards for all World Heritage Properties. The proposed Australian World Heritage management principles will deal with matters such as: public consultation in the preparation of management plans for each World Heritage property, ongoing community and expert involvement through advisory committees, and regular review of management plans.

An Indigenous Advisory Committee is established under the Act to advise the Minister on the operation of the Act, taking into account the significance of indigenous peoples' knowledge of the management of land and the conservation and sustainable use of biodiversity.

Importantly, the EPBC Act preserves the joint management arrangements with Traditional Owners at Kakadu National Park which were in place under previous legislation. The Traditional Owners of Kakadu continue to constitute a majority of the Board of Management of the Park.

The EPBC Act sets new standards for the management and protection of Australia's World Heritage properties, and a new international benchmark for national legislation, to meet all obligations under the World Heritage Convention.

2.5.2. Tourism infrastructure

Australian government Commitment 12 July 1999:

The government will allocate an additional \$A3.155 million specifically to upgrade tourism infrastructure in Kakadu National Park to reduce environmental impacts and improve presentation of World Heritage values.

Background

In July 1999, the Australian government allocated \$A3.155 million to upgrade tourism infrastructure in Kakadu National Park. This additional funding, which supplemented the existing budget for Kakadu National Park, has enabled a range of important works to be initiated, including improvements to board walks, signage, camping grounds and access roads. Improvements to visitor infrastructure will address the impacts of tourism on popular sites and at the same time enhance visitor experiences.

It should be noted that weather patterns and the topography at Kakadu mean that large areas of the Park are subject to seasonal inundation. As a result, construction works in many areas can only be undertaken during the dry season (generally April to September).

Progress and Outcomes

Planning for infrastructure developments was completed over the 1999/2000 wet season (approximately October-March), and construction work commenced before the annual wet season in areas where this was possible. The unusually severe wet season experienced at Kakadu in 1999/2000 has restricted construction work in some areas.

Yellow Water boardwalk – The boardwalk provides access to one of the most spectacular and popular wetland areas of Kakadu and allows on-site interpretation of the wetlands values. Works to upgrade and extend the boardwalk are nearing completion, and are expected to be finalised early in the dry season. Work has commenced on upgrading the access road and car park for the boardwalk.

Jim Jim Falls road – The Jim Jim Falls road provides access to some of the most outstanding geomorphological features in Kakadu, Jim Jim and Twin Falls, and from the road there is a superb panorama of the Arnhem Land escarpment. The upgraded road will provide visitors with safer access. Project planning is well underway and construction will commence at the beginning of the dry season.

Jim Jim Falls campground – Local Traditional Owners have agreed to the location of the new camping area. Planning for the campground was completed in March 2000, and the site will be developed during the 2000 dry season. Rehabilitation and new management provisions of the Jim Jim Falls campground will improve the protection of Jim Jim Creek, a tributary of the South Alligator River system. The South Alligator River is an outstanding example of a river system and one of the significant expressions of the natural World Heritage values of Kakadu. The new campground provides additional opportunities to interpret the regional landscape and appreciate the values of its outstanding vistas.

Maguk boardwalk – The boardwalk allows visitors to experience the World Heritage values of an important monsoon rainforest area while having a minimal impact on the rainforest. The outstanding values of the monsoon rainforest will be presented to visitors through high quality interpretation signage placed at strategic points along the boardwalk. Project planning is nearing completion and construction will commence at the beginning of the dry season.

These works further enhance the protection of World Heritage values, by enabling environmentally sensitive access for Australian and international visitors.

2.5.3. Invasive and alien species

Australian government Commitment 12 July 1999:

The government will implement a long-term monitoring and control program in Kakadu National Park, at an annual cost of approximately A\$580,000. The Commonwealth (*Australian*) government will provide approximately A\$2 million over three years for mimosa control beyond the boundaries of Kakadu National Park.

Background

Mimosa pigra is an aggressive prickly shrub, native to Central America, which has become established on the coastal floodplains of the northern part of Australia. *Salvinia molesta* is a free-floating aquatic fern, originally from South America, that has infested a number of areas in the Northern Territory.

The cane toad *Bufo marinus* is native to South America and the south-west of North America. It was introduced into Australia in 1935 in an unsuccessful attempt to biologically control insect pests of sugar cane. The cane toad has not yet reached Kakadu.

Progress and Outcomes

In Kakadu National Park, a continuous 'search and destroy' policy has been highly successful in controlling mimosa. Kakadu National Park continues to undertake a long-term monitoring and control program for *Mimosa pigra* with an annual expenditure of A\$580,000. This includes employment of Rangers dedicated to on-ground mimosa control and weed management across the whole Park. The Park's weed management strategy continues to be given a high priority by Park management and Traditional Owners. Park staff also continue to implement an active salvinia control program in Kakadu involving the use and monitoring of a biological control agent, the weevil *Cyrtobagous salviniae*. At the request of Traditional Owners, Kakadu staff have also carried out control work and trained other people to control mimosa, salvinia and other weeds in areas adjacent to the Park that could serve as a source of infestation or reinfestation of weedy species.

In February 2000 the Environmental Research Institute of the Supervising Scientist (ERISS) and Parks Australia jointly funded a risk assessment of the potential impacts of cane toads on aquatic ecosystems in Kakadu National Park. At the national level the Australian government will allocate additional funding from the National Feral Animal Control Program to further research on developing control methods for cane toads. It has advertised for research proposals for the development of biological controls for cane toads.

Kakadu National Park, under the direction of the Kakadu Board of Management, is overseeing the production of detailed management plans, including recommendations and contingency plans for managing feral animals.

2.5.4. Monitoring

Australian government Commitment 12 July 1999:

Australia undertakes to submit to the World Heritage Centre by 31 October 1999 a detailed program for monitoring the state of conservation of Kakadu National Park, developed in consultation with key indigenous and stakeholder groups.

The undertaking to report by 31 October 1999 was overtaken by the Committee decision that Australia report on 15 April 2000. The Australian government, in close consultation with Traditional Owners in the Park and on the Kakadu Board of Management, is continuing to develop a world's best practice regime for monitoring the state of conservation of Kakadu National Park.

Parks Australia and a number of other agencies continue to undertake significant research, survey and monitoring of Kakadu National Park, in consultation with key indigenous and other stakeholders.

The Park Board, a majority of which is Aboriginal, determines the priorities for research in the Park and is briefed regularly on options, methods and effects of research. To assist the Board in informed decision making, the Plan of Management specifies that a detailed long-term strategy for research and monitoring will be developed for the park by 2001, in consultation with *Bininj/Mungguy* (local Aboriginal people), Park staff, the Kakadu Research Advisory Committee and the Bininj Heritage Management Committee. The strategy will be reviewed every two years with the assistance of the Kakadu Research Advisory Committee.

The Alligator Rivers Region Advisory Committee provides another ongoing mechanism for participation in regional management issues by indigenous, scientific, community and other stakeholders, and allows for presentation and discussion of regular reports from the Office of the Supervising Scientist (independent statutory authority) and government agencies.

The Kakadu Research Advisory Committee and the Bininj (Aboriginal) Heritage Management Committee (BHMC) provide advice to the Park Management Board and Parks Australia on research and monitoring priorities for the park. Important areas for research and monitoring, determined through advice from these Committees and the results of independent research, are identified in the current Plan of Management.

Ongoing monitoring programs in Kakadu National Park include:

- fire monitoring plots which are photographed annually, with a full botanical survey of the 140 plots undertaken every five years;
- fire scar mapping using satellite imagery to interpret the intensity and timing of Kakadu's fire management program;
- weed monitoring including monthly surveys of *Salvinia molesta* infestations and at least twice yearly monitoring of known sites of *Mimosa pigra*. Other weed species are monitored on a less frequent basis;
- art sites monitoring including monthly inspections of the three public galleries in the park and additional site surveys at the request of Traditional Owners and when opportunities arise;

- crocodile numbers are surveyed annually on the major waterways in Kakadu and the information is collated and analysed in relation to crocodile numbers across the Northern Territory;
- during the coming dry season Kakadu will commence a water quality monitoring program for a number of plunge pools which are major visitor destinations;
- fish monitoring is being undertaken in the estuarine areas of the park and a number of new species have been identified as a result of this work;
- visitor management monitoring includes collation of visitor numbers and a monitoring program for bushwalkers undertaking trips in remote and environmentally and/or culturally sensitive parts of the Park;
- At Ranger, creek-side monitoring protocols have been prepared by the Environment Research Institute of the Supervising Scientist (ERISS) for early detection of water-column effects during the wet season. Creek-side tests are being undertaken by ERA during wet seasons;
- ERA also conducts stringent monitoring at both Ranger and Jabiluka in accordance with the *Uranium Mining (Environment Control) NT 1979 (UMEC) Act*. This involves sampling, analysis, measuring and regular reporting. The Northern Territory Department of Mines and Energy, which has responsibility for administering the UMEC Act, also has an environmental monitoring program in place to monitor the Ranger and Jabiluka Projects;
- Australia's new environment legislation (*the Environment Protection and Biodiversity Conservation (EPBC) Act 1999*) will facilitate a more explicit framework for monitoring and reporting on the conservation of World Heritage properties.

Parks Australia is assessing the current monitoring arrangements at Kakadu and will develop a more systematic monitoring program which:

- provides relevant information for progressively improving park management;
- is consistent with the framework of World Heritage values and attributes being defined under the EPBC Act and proposed Regulations;
- meets the need for periodic reporting by State Parties under the World Heritage Convention; and
- is in accordance with the wishes of Traditional Owners.

Parks Australia is working closely with the IUCN World Commission on Protected Areas (WCPA) Taskforce on Management Effectiveness, to develop a framework for the evaluation of protected area management with a particular focus on World Heritage values. The draft framework provides an approach which addresses the requirements for external reporting as well as internal performance management aimed at progressive improvement.

Involvement of Traditional Owners and other indigenous stakeholders is particularly significant in the development and implementation of a systematic program for monitoring the conservation of Kakadu. This will be achieved initially through consultation with the Board of Management and the Bininj Heritage Management Committee. Consultation with scientific experts will be facilitated through the Kakadu Research Advisory Committee.

2.5.5. Establishment of an Asia-Pacific World Heritage Focal Point in Australia **www.environment.gov.au/apfp**

Australian Government Commitment 12 July 1999:

Australia will establish an Asia-Pacific World Heritage Focal Point in Australia as a forum for sharing regional management experience, knowledge and resources.

Background

Australia announced in July 1999 the establishment of the Asia-Pacific Focal Point for World Heritage Managers (Focal Point). Meetings of regional World Heritage managers in 1996 and 1998 recommended that a focal point be established and requested that Australia take the leading role.

The Focal Point's objective is to assist States Parties in the region to adopt and implement the Convention. It does this by sharing information and experience, developing networks, exchanging views on management issues, responding to specific requests, helping promote best-practice in heritage management, and identifying and securing funding for World Heritage activities.

While the Asia-Pacific region is culturally diverse, managers in the region agree there are many common issues relating to World Heritage management. The Focal Point's initial focus has been to assist the significant number of countries in the region, and in particular in the Pacific, who are not yet members of the Convention. This concurs with the World Heritage Global Strategy which aims to ensure that the World Heritage List is representative of the unique cultural and natural heritage of all regions.

In establishing the Focal Point, key Asia-Pacific regional states, World Heritage property managers, the World Heritage Centre, IUCN, ICOMOS, ICCROM, and other appropriate stakeholders were consulted in developing its mandate, objectives and working methods. Feedback from stakeholders has been incorporated into the design of the Focal Point. Australia presented the Focal Point initiative to a Pacific World Heritage Meeting (Vanuatu, 1999) and the 23rd Session of the World Heritage Committee in Marrakesh, Morocco, in December 1999. The response to the initiative has been positive, particularly from regional World Heritage managers.

Progress and Outcomes

The Focal Point's strength is its ability to offer practical policy and management advice and assistance, matching needs with resources, and assisting with project development. In the short time since it has been established, the Focal Point has advanced a number of initiatives including placement of experts in regional states to assist the development of World Heritage nominations and management planning; assistance to Pacific states' participation at a regional training workshop; advice on membership requirements and benefits; and the development of a website information data base at www.environment.gov.au/apfp to assist all regional states implement the Convention.

The Focal Point is committed to working with all World Heritage initiatives in the region to avoid duplication. It continues to advise regional partners and relevant organisations of its activities to build cooperative linkages. Key partners in delivering assistance are UNESCO Apia, UNESCO Bangkok, NZ Department of Conservation, the World Heritage Centre, the Asia-Pacific Cultural Centre for UNESCO (ACCU, Japan), and other regional states.

During January-February 2000, the Focal Point facilitated the placement of three professional officers from the Department of the Environment and Heritage in regional states under the auspices of the Australian Youth Ambassadors for Development program (funded by the Australian government's overseas aid program - AusAID). The placements will take place from July, and will last from three to six months. The projects and countries involved are fully consistent with the preliminary focus for the Asia Pacific Focal Point. The three officers will work in:

- Viet Nam, Ha Long Bay World Heritage site, on the IUCN project to develop management plans;
- Apia, Western Samoa, attached to the UNESCO Pacific Office, working on a range of Pacific World Heritage issues, but with a focus on assisting the Solomon Islands develop management plans for the East Rennell World Heritage site; and
- Fiji, on the development of Fiji's World Heritage nomination for Levuka (Fiji's colonial capital).

Each project was developed in cooperation and consultation with relevant States Parties' authorities, UNESCO Apia, UNESCO Bangkok, IUCN Viet Nam, IUCN Head Office, the World Heritage Centre and AusHeritage.

The Focal Point has established good cooperative links with Papua New Guinea to assist with its World Heritage nominations of Kuk, an ancient agricultural site in the central highlands; and Bobongara, an Archaeological site on the Huon Peninsula which is the location of the oldest human habitation site in the Pacific outside of Australia. The Focal Point will be able to assist with World Heritage nominations for the sites and with management planning.

Kirabati recently indicated interest in joining the World Heritage Convention, and has sought assistance from the Focal Point. Practical information and advice on the benefits and obligations of the Convention have been provided and discussions to identify other assistance are underway.

At the IUCN Oceania regional meeting in Australia (10-12 March 2000) it was announced that the Focal Point would facilitate participation by the representatives of several Pacific states at the third regional WH managers meeting in Tongariro, New Zealand, in October 2000. The meeting will provide a valuable opportunity to review and discuss objectives, direction, projects and other activities of the Focal Point. The Focal Point has also been asked by the IUCN Oceania regional committee to assist develop a regional plan modelled on the IUCN quadrennial global plan. The regional plan is under production.

The Focal Point website came online on 4 April 2000. The website is a dynamic source of information and advice for regional states, and will be regularly updated and restructured to meet the changing needs of the region. It provides information on current issues and events, aimed at both policy makers and property managers. It is developing a detailed database of information for regional world heritage managers. For regional states without access to the internet, a newsletter will be produced to ensure all partners have access to the work of the Focal Point.

Summary of Progress on the protection of Kakadu's World Heritage values

Although the Committee's decision giving rise to this report did not explicitly request a progress report on protecting World Heritage values, the Australian government has been concerned to ensure that the Committee is apprised of its progress in meeting all of its commitments. Since the Committee meeting of July 1999, Australia has:

- introduced national legislation to enhance protection for World Heritage values and reinforce joint management strategies;
- improved tourism infrastructure;
- developed new strategies to counter invasive and alien species;
- introduced comprehensive monitoring requirements for Kakadu National Park; and
- established an Asia-Pacific initiative to assist regional states join, implement and support the World Heritage Convention.

DECISION OF THE THIRD EXTRAORDINARY SESSION OF THE WORLD

HERITAGE COMMITTEE, 12 JULY 1999

Kakadu National Park (Australia)

1. The Committee,

- a. **Emphasizes** the importance of Articles 4, 5, 6, 7 and 11 of the 1972 UNESCO World Heritage Convention. In particular the Committee emphasizes Article 6 (1) which states that:

Whilst fully respecting the sovereignty of the States on whose territory the cultural and natural heritage (...) is situated, and without prejudice to property right provided by national legislation, the States Parties to this Convention recognize that such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to co- operate.

- b. **Recalls** that the twenty-second session of the World Heritage Committee in Kyoto (1998) expressed "grave concern" over the ascertained and potential dangers to the World Heritage cultural and natural values of Kakadu National Park posed by the proposal for uranium mining and milling at Jabiluka;
- c. **Notes** that the deliberations of the twenty-third session of the Bureau and of the third extraordinary session of the Committee demand the continuous serious consideration of the conditions at Kakadu National Park by the Committee with reference to Section III, in particular Paragraph 86 of the Operational Guidelines for the Implementation of the World Heritage;
- d. **Expresses its deep regret** that the voluntary suspension of construction of the mine decline at Jabiluka until the twenty-third session of the Committee (requested by the twenty-second session of the Committee) has not taken place;
- e. **Is gravely concerned** about the serious impacts to the living cultural values of Kakadu National Park posed by the proposal to mine and mill uranium at Jabiluka. The Committee is of the opinion that confidence and trust building through dialogue are crucial for there to be any resolution of issues relating to the proposal to mine and mill uranium at Jabiluka. In particular, a more substantial and continuous dialogue needs to be established between the Australian Government and the traditional owners of the Jabiluka Mineral Lease, the Mirrar Aboriginal people;
- f. **Is concerned** about the lack of progress with the preparation of a cultural heritage management plan for Jabiluka;
- g. **Continues to have significant reservations** concerning the scientific uncertainties relating to mining and milling at Jabiluka.

2. The Committee,

- a. Recognizes, with appreciation, that the Australian Government, Australian Supervising Scientist, advisory bodies (IUCN, ICOMOS and ICCROM) and independent scientific panel (ISP) established by the International Council of Science (ICSU) have provided the reports requested by the twenty-second session of the Committee (Kyoto, 1998);
- b. Acknowledges that there are indications that a new dialogue between the Mirrar Aboriginal people and the Australian Government has begun in relation to issues concerning the Jabiluka uranium mine and mill. The Committee considers this to be an essential step in finding a constructive solution to the issues raised by the UNESCO mission to Kakadu National Park and encourages the Australian Government to intensify their efforts in this regard and pursue with vigor the deepening of its dialogue with the Mirrar Aboriginal people;

- c. Notes that the Australian Government has stated (in document WHC-99/CONF.205/INF.3G entitled “Protecting Kakadu National Park” submitted by the Australian Government) that “full scale commercial mining at Jabiluka would only be reached about 2009 following the scaling down of production at the Ranger mine so that two mines would not be in full production simultaneously”. The Committee further notes that the Minister for Environment and Heritage has stated that there shall be no parallel commercial scale operation of the Ranger and Jabiluka uranium mines located in enclaves surrounded by, but not included, in Kakadu National Park. The Committee considers that it is the clear responsibility of the Australian Government to regulate the activities of a private company, such as Energy Resources of Australia, Inc, in relation to the proposed mining and milling activities at Jabiluka to ensure the protection of the World Heritage values of Kakadu National Park;
 - d. Notes that the Australian Supervising Scientist (ASS) has assessed the report of the independent scientific panel (ISP) established by the International Council of Science (ICSU) and seeks a dialogue with the ISP to resolve outstanding questions relating to scientific issues concerning mining and milling at Jabiluka.
3. With consideration of 1 and 2 above, the Committee will remain vigilant in reviewing and assessing the progress made by the Australian Government. To this end the Committee requests that the Australian Government submit a progress report on the following issues by **15 April 2000** for examination by the twenty-fourth session of the Bureau of the World Heritage Committee:
- a. progress made with cultural mapping of the Jabiluka Mineral Lease and the Boyweg-Almudj site and its boundaries and the completion of the cultural heritage management plan with the necessary co-operation of the Mirrar, and appropriate involvement of other stakeholders and ICOMOS and ICCROM;
 - b. progress in the implementation, in response to the Kakadu Region Social Impact Study (KRSIS), of a comprehensive package of social and welfare benefits, together with the Northern Territory Government, for the benefit of the Aboriginal communities of Kakadu (including the Mirrar);
 - c. more precise details of the output and scale of any parallel activities at the Ranger and Jabiluka uranium mines as well as on any legal provisions taken in that respect.
4. To resolve the remaining scientific issues, such as those raised in the ISP report, the Committee asks ICSU to continue the work of the ISP (with the addition of any additional members) to assess, in co-operation with the Supervising Scientist and IUCN, the Supervising Scientist’s response to the ISP report. The report of the ISP’s assessment should be submitted to the World Heritage Centre by **15 April 2000** for examination by the twenty-fourth session of the Bureau of the World Heritage Committee in 2000.

ADDITIONAL RECOMMENDATIONS OF THE MINISTER FOR THE ENVIRONMENT AND
HERITAGE ARISING FROM THE REPORT OF THE SUPERVISING SCIENTIST TO
THE WORLD HERITAGE COMMITTEE AND
THE REVIEW OF THE INDEPENDENT SCIENTIFIC PANEL OF ICSU

Hydrological modelling of the Jabiluka Water Management System

1. The Oenpelli rainfall record for the years 1917 to 1998 (and any subsequent extension of these data approved by the Supervising Scientist) will be used for estimating the 1:10,000 AEP annual rainfall and for other hydrological modelling for the Jabiluka project.
2. Subject to final agreement between the Supervising Scientist and the Independent Scientific Panel of the International Committee of Scientific Unions, values in the Oenpelli rainfall record will be adjusted upwards by 5% for the purposes of hydrological modelling of the Jabiluka water management system.
3. In all future hydrological modelling of the Jabiluka water management system, the pan factors proposed by the Supervising Scientist in 1987, or any subsequent revision of these data as approved by the Supervising Authority or the Minister responsible for administering the Atomic Energy Act 1953 with the advice of the Supervising Scientist, will be used.
4. An inverse linear relationship between evaporation and rainfall will be incorporated in future water management modelling of the Jabiluka project.
5. The 6-minute PMP intensity estimate adopted by ERA in the final design of the Jabiluka project will be 1,380 mm. The full set of PMP values provided by the Supervising Scientist in his report SSR140 will be used, where appropriate, in the detailed design of the Jabiluka project.
6. Hydrological modelling of the water management system at Jabiluka will use a stochastic water balance model. This model will incorporate the following characteristics:
 - Water balance calculations on a daily basis
 - The use of a stochastically generated daily rainfall record
 - The use of a stochastically generated monthly evaporation record
 - The use of a realistic distribution of evaporative losses in the ventilation system throughout the year
 - Runoff coefficients and/or a soil water capacity model derived from modelling of the Ranger water management system.
7. The hydrological model will be used to make estimates of the storage capacity required as a function of exceedence probability over the life of the mine under current climatic conditions. The design criterion adopted for the storage pond volume will be that the probability that the pond volume will be exceeded over the life of the mine is 1 in 10,000.

Design of the water management system

8. In the detailed design of the Jabiluka water management system, increased pond evaporation will be used rather than enhanced evaporation in the ventilation system. In implementing this requirement, ERA will carefully model evaporation in the ventilation system as a result of dust suppression procedures to achieve the optimum water management system.
9. The water retention pond will be partitioned, to the satisfaction of the Supervising Authority or the Minister responsible for administering the Atomic Energy Act 1953 with the advice of the Supervising Scientist, into an appropriate number of compartments with connecting spill-ways and

a water pumping system to enable control of evaporative losses and to minimise the risk to the environment arising from structural failure of the pond embankments.

10. The water retention pond will be designed with a safety factor of at least 1.7 taking into account conditions that would lead to static failure of the embankments.
11. Prior to completion of the pond design, ERA will commission a hazard analysis for earthquakes that takes into account not only local and regional earthquakes but also distant large earthquakes in the Banda Sea. The water retention pond will be designed such that the probability of failure due to the occurrence of an earthquake will be less than 5 in 10,000 over the life of the mine.
12. The water retention pond will be constructed with a properly engineered spillway to ensure that the pond structure would not fail when the overtopping height is reached.

Review of the water management system

13. Following commencement of operations at the Jabiluka mine, ERA will submit, not less often than once every five years, a report to the Supervising Scientist and the Supervising Authority that contains a review of the operation of the water management system. This report will include a review of all hydrological data obtained following the commencement of mining, a comparison with the corresponding data used in the final design of facilities, a review of the most recent climate change data and modelling, and an assessment of the implications of these new data on the future operation of the water management system.
14. ERA will implement any modifications to the water management system recommended by the Supervising Authority or the Minister responsible for administering the Atomic Energy Act 1953 with the advice of the Supervising Scientist, resulting from the assessment of this review to ensure that the original design criteria for the system will continue to apply throughout the life of the mine.

Tailings disposal

15. The additional tailings silos, required to ensure the placement of all tailings underground, will be excavated in the Kombolgie sandstone east of the orebody.

Groundwater modelling

16. The ground water modelling presented by ERA in satisfaction of Requirement 2 of the Minister for Resources and Energy's Requirement's for implementation of the Jabiluka Mill Alternative will take into account appropriate studies on tailings/cement/water/rock interaction studies, will use Monte Carlo (or similar) methods to provide probabilistic estimates on the movement of contaminants in groundwater from the tailings repositories, and will present calculations extending over a period of 10,000 years.

IMPLEMENTATION OF THE RECOMMENDATIONS OF THE INDEPENDENT SCIENTIFIC PANEL OF ICSU

RECOMMENDATION 1.

Because the rainfall measurements at Oenpelli may be underestimated due to wind effects etc and in view of the crucial importance of the rainfall record in terms of the design of retention pond capacity, the rainfall record should be increased by 5% unless there is any evidence to the contrary. The hydrological analysis, including the stochastically generated data, should be repeated using this enhanced rainfall data (2.2).

Status: This recommendation has been addressed in Recommendation 2 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU.

This recommendation will be implemented subject to the ISP review of the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 2.

Rainfall and class A pan evaporation measurements should be commenced at Jabiluka as soon as possible (2.4).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 3.

The predictions of climate change from observations and atmospheric models should be kept under review during the life of the mine and the design of the retention pond area should enable the storage to increase to accommodate a predicted increase in runoff should this be necessary (2.9).

Status: This recommendation has been addressed in Recommendations 13 and 14 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU. This recommendation is being implemented on an ongoing basis.

RECOMMENDATION 4.

The runoff coefficients used by Chiew & Wang in the runoff modelling should be validated on the basis of hydrological measurements from the Ranger site. The runoff models should be modified if necessary (2.10).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU but also included explicitly in Recommendation 6 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU.

RECOMMENDATION 5.

An assurance should be obtained that the uncertainties in relation to water requirements at the mill, effluent disposal routes etc has been adequately dealt with in the design of the water management system. Due to lack of information it is not clear to the Independent Science Panel that this was the case [2.10(a to d)].

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 6.

Justification for the use of the Ranger 'Public Exposure Radiation Model' at Jabiluka is required. A risk assessment based on the chemical toxicity of uranium is needed with particular reference to (a) soil ingestion, and (b) dust inhalation (3.3).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 7.

The effects of biological recycling of contaminated material in the aquatic ecosystem should be investigated (3.4).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 8.

The design of the retention pond system should include consideration of the partitioning of the storage volume so as to reduce the risk of the total water volume being discharged should an embankment fail (3.5).

Status: This recommendation has been addressed in Recommendation 9 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU. This recommendation will be implemented at the appropriate stage of the Jabiluka development.

RECOMMENDATION 9.

Isotope measurements should be used to determine the age of groundwater and surface water base flow as a means of assessing flow rates and bulk permeabilities in the aquifers. Comparisons should be made between these values and those already available from borehole tests and if necessary additional groundwater modelling should be undertaken using the new data (4.2);

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 10.

The results of the Monte Carlo simulations from the groundwater models should be presented as cumulative probability plots (4.2).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 11.

Three-dimensional groundwater models should be run once new information is available on the tailing/cement/water/rock interaction studies. The models should be extended to encompass regional groundwater flow and to identify its contribution to surface waters (4.4).

Status: This recommendation has been addressed in Recommendation 16 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU. ERA has commenced implementation of this recommendation.

RECOMMENDATION 12.

The contaminant transport groundwater modelling studies should be extended to 10,000year runs (4.2).

Status: This recommendation is Requirement 2 of the then Minister for Resources and Energy's Requirements of ERA arising from the assessment of the Public Environment Report on the Jabiluka Mill Alternative. It is also reiterated under Recommendation 16 of the Minister for the Environment and Heritage arising from the report of the Supervising Scientist to the World Heritage Committee and the review of the Independent Scientific Panel of ICSU.

RECOMMENDATION 13.

The proposals to contain the sediments from the waste rock stockpile should be examined in relation to potential impacts on the aquatic ecosystem (5.3).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 14.

Environmental impact assessment (including a full ecosystem analysis) should be undertaken assuming a mine life of 40, 50 and 60 years (5.3).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 15.

A comprehensive risk assessment, including ecological, biogeochemical and hydrological factors, at the landscape/catchment scale for both Ranger and Jabiluka should be undertaken in the context of the Jabiluka World Heritage Area (5.4).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 16.

Assurance should be sought that the rehabilitation fund is adequate to meet any long term rehabilitation task should the mine be prematurely closed (5.5).

Status: This recommendation has been implemented as noted in the Supervising Scientist's supplementary report to ICSU.

RECOMMENDATION 17.

A commitment should be obtained to establish a long term, possibly 100 year programme to monitor surface water, groundwater and the ecosystem at frequent intervals. This to be subject to periodic review (5.5).

Status: The Department of the Environment and Heritage is working with the Department of Industry, Science and Resources to develop and implement a mechanism to provide for long term post rehabilitation environmental monitoring and maintenance of the Jabiluka site.

Glossary

AAPA	Aboriginal Areas Protection Authority
ATSIC	Aboriginal Torres Strait Islander Commission
BoM	Board of Management
CDEP	Community Development Employment Program
CHMP	cultural heritage management plan
EA	Environment Australia
EIS	Environmental Impact Statement
ERA	Energy Resources of Australia Pty Ltd
DISR	Department of Industry, Science and Resources
GAC	Gundjehmi Aboriginal Corporation
ICOMOS	International Council on Monuments and Sites
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICSU	International Council for Science
ISP	International Scientific Panel
IUCN	World Conservation Union
JMA	Jabiluka Mill Alternative
KNP	Kakadu National Park
KRSIS	Kakadu Regional Social Impact Study
NLC	Northern Land Council
NT	Northern Territory
OSS	Office of the Supervising Scientist
PAN	Parks Australia North
PER	Public Environment Report
RMA	Ranger Mill Alternative
SS	Supervising Scientist
ToR	Terms of Reference