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Aboriginal Management and Planning for Country: respecting and sharing traditional knowledge

Full report on Subprogram 5 of the Ord-Bonaparte program

Kylie Pursche
Kimberley Land Council

Aboriginal Management and Planning for Country: respecting and sharing traditional knowledge

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of the Ord–Bonaparte Program

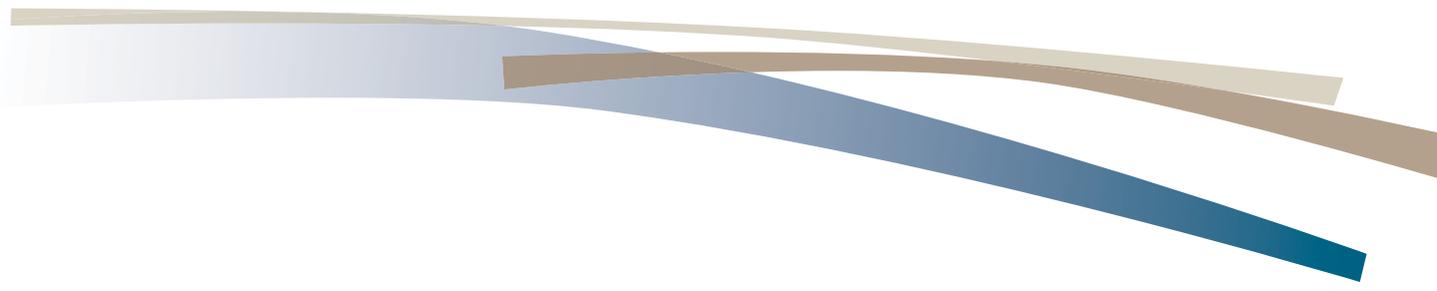
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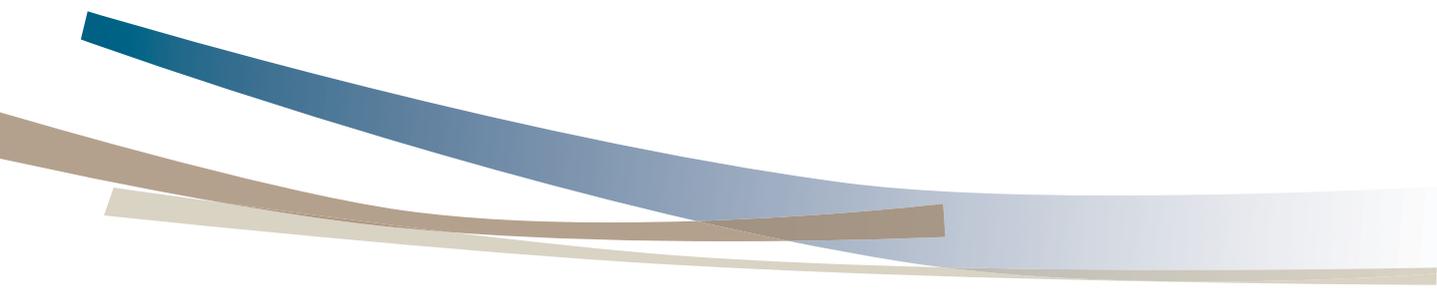


Kimberley Land Council



‘...country he bin cry for us. It change when we leave...’

‘...I never went to school but my brain working for my country...’



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Kimberley Land Council



Australian Government
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Cover photos:

Top left: Franklin Bray, Lachlan Bray and Nora Badngarri at Violet Valley for ground mapping work.
Top right: Glenn Wightman, Stan Brumby, Joe Blythe, Doris Ryder, Jack Lannigan and Bonnie Deegan on Lamboo station undertaking field work for the Jaru Plants and Animals project.
Bottom left: Mona Ramsay, Peggy Patrick, Lena Nyadbi, Phyllis Thomas at Camel Creek as part of the Kija Plants and Animals project.
Bottom right: Jeff Janama welcoming people to country on Pumpkin Island, Lake Argyle.

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Aboriginal Management and Planning for Country

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Kylie Pursche

Aboriginal Management and Planning for Country Staff



Russell Gallagher – Field Officer

Russell worked for the Aboriginal Management and Planning for Country Sub-Program from December 2001 until September 2002.



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Kylie Pursche – Research Coordinator

Kylie started with the KLC as the research coordinator for the Aboriginal Management and Planning for Country Sub-Program in August 2001 until December 2003.

Acronyms and abbreviations used

ADM	Argyle Diamond Mine
AgWA	Department of Agriculture, Western Australia
AQIS	Australian Quarantine and Inspection Service
ATSIC	Aboriginal and Torres Strait Islander Commission
ATSIS	Aboriginal and Torres Strait Islander Services
CALM	Conservation and Land Management, Western Australia
CFCU	Caring for Country Unit
CKIMS	Cultural Knowledge Information Management System
CLC	Central Land Council
CRC	Cooperative Research Centre
CRC Savanna	Cooperative Research Centre for Tropical Savannas Management
CRC Weeds	Cooperative Research Centre for Australian Weed Management
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DIA	Department of Indigenous Affairs
DOLA	Department of Land Administration
EK	East Kimberley
EK LCDC	East Kimberley Land Conservation District Committee
FRDC	Fisheries Research and Development Corporation
FWI	Frank Wise Institute
GIS	geographic information system
GPS	global positioning system
ILC	Indigenous Land Corporation
KDC	Kimberley Development Commission
KLC	Kimberley Land Council
KLRC	Kimberley Language Resource Centre
KREAC	Kimberley Region Economic Aboriginal Corporation
KRS	Kimberley Research Station
KWADS	Kununurra–Wyndham Area Development Strategy
LWA	Land & Water Australia
LSMU	Land and Sea Management Unit
LWRRDC	Land & Water Resources Research and Development Corporation (now known as LWA)
Mirima	Mirima Dawang Woorlab-gerring Language and Culture Centre
NAILSMA	North Australian Indigenous Land and Sea Management Alliance
NAPSWQ	National Action Plan for Salinity and Water Quality
NAQS	Northern Australia Quarantine Strategy
NLC	Northern Land Council
NHT	Natural Heritage Trust
NRM	natural resource management
NT	Northern Territory
OBP	Ord Bonaparte Program
OLW	Ord Land and Water
ORWMG	Ord River Water Managers Group
R&D	research and development
SP 1	Subprogram 1, Regional Resource Futures
SP 3&4	Subprograms 3 and 4, Freshwater and Estuarine Programs
SP5	Subprogram 5, Aboriginal Management and Planning for Country
SWEK	Shire of Wyndham East Kimberley
TEK	traditional ecological knowledge
WA	Western Australia
WAP	Water Allocation Plan
WRC	Waters and Rivers Commission
WWF	World Wide Fund for Nature

Executive summary

...I am on this committee OBP, cleaning country, and checking plants and animals. ...we need people on ground to be doing this. People must get in and help. Don't expect white people from government, must be protected by traditional owners as well. River must be protected by us people...

(Aboriginal Steering Committee member)

...we should be on same level as other funding bodies but we don't have any money to join but it's our country

(Aboriginal Steering Committee member)

It is inevitable that Aboriginal people will increase their land tenure in the Kimberley. Currently, Aboriginal people in the East Kimberley hold approximately one third of all land holdings. For this reason, it is imperative that Aboriginal rights and interests are taken into account in natural resource management (NRM) and planning in the region. This should not be tokenistic, but be comprehensive and concerted, with full allocation of resources to employ experienced and qualified personnel to assist in this process. The environmental problems and pressures that are now on major river systems in Australia are a lesson for us all.

Participatory planning, allocation of resources, expert scientific and social research, monitoring, evaluation and timely implementation are all essential ingredients to ensure that we do not make here the mistakes that have been made in other areas across Australia. Aboriginal people assert their rights for ownership of country in the East Kimberley and have more than a right to insist that government focuses its attention and resources on this type of work. Aboriginal people are not just a stakeholder group but the original owners and inhabitants of this country.

The *Aboriginal Management and Planning for Country* subprogram (SP5) commenced field research in June 2002 and was completed in August 2003. The work was part of the broader integrated NRM Ord–Bonaparte Program (OBP). OBP was designed as an innovative five-year research and development (R&D) program focused on the Ord River catchment in the East Kimberley, Western Australia. The partners to the program were Land & Water Australia (LWA), CSIRO, the WA Department of Agriculture, the WA Department of Environment, Water and Catchment Protection (formerly the Waters and Rivers Commission), the WA Department of Conservation and Land Management (CALM), the Kimberley Land Council (KLC), Ord Land and Water (OLW), and the Australian Government Department of Agriculture, Fisheries and Forestry. The OBP was managed by LWA on behalf of the partners.

The OBP had its origins in the scoping study *Sustainable development of tropical Australia: R&D for management of land, water and marine resources* (Johnson et al. 1999) undertaken by CSIRO for the Land & Water Resources Research and Development Corporation (LWRRDC, now called LWA) and the Fisheries Research and Development Corporation (FRDC).

This final report discusses the:

- development, methodology, outcomes and outputs of the three research projects funded by the OBP under the *Aboriginal Management and Planning for Country* subprogram (SP5)
- the work of the Aboriginal Steering Committee
- the challenges, constraints and opportunities of this work.

The three research projects were:

- **Plants and animals of Kija, Jaru Country: Aboriginal knowledge conservation and ethnobiological research in the upper Ord catchment**
- **Data management, GIS and cultural mapping with Kija and Jaru people in the upper Ord catchment**
- **Capacity-building and two-way learning for Kija, Miriwoong–Gajirrawoong and Balangarra people in the lower Ord catchment.**

The development and implementation of the research projects were completed in a short time frame and this was challenging. SP5 was the only program from the OBP that conducted social research and was firmly based on the principles of collaborative and participatory research. Hence, the findings of the research are as much to do with the research process employed in the project as they are to do with specific research outcomes.

In this commitment of research and planning, two years was insufficient time. This report recommends that investment in research should be for at least 5 years with a 10-year time frame more realistic to achieve tangible, community-defined results in the context of sustainable development in northern Australia, specifically the East Kimberley region. This kind of commitment will allow time for meaningful engagement with local Indigenous communities, participatory and action field research, and the achievement of tangible outcomes that facilitate input into regional planning and management activities with improved social, cultural and economic outcomes.

It is recommended that this report and subsidiary reports be translated into relevant languages or *kriol*. It is proposed that presentations of this material by the relevant traditional owners would serve to better communicate their experience and let people hear first-hand perceptions from an Aboriginal point of view.

Too often, research is carried out, a report written, and then forgotten. The driving force behind this research program is Aboriginal people's involvement and commitment and their story should be heard.

The Aboriginal program has been highly successful in establishing the foundation for continuing research in the region. Natural and cultural resource management have progressed a step forward, and planning activities in the East Kimberley region are now more inclusive than they were in the past.

Key outcomes of the program are:

- building relationships with traditional owners from the Ord River catchment
- a better understanding of the cultural diversity and make-up of the catchment area
- a better understanding of the challenges to implementing field research activities in the East Kimberley
- identification of institutional factors and resource limitations that can impede research and Aboriginal involvement in NRM
- establishment of an organisational framework in relation to NRM in the East Kimberley
- identification of key land use issues and concerns from Kija, Jaru, Miriwoong and Gajirrawoong people
- formation of a strong Aboriginal Steering Committee for the Ord Catchment, including people from Halls Creek, Warmun, Kununurra and Wyndham area, which is building a foundation for the future.

Key outcomes of the research projects are:

Plants and animals of Kija, Jaru Country: Aboriginal knowledge conservation and ethnobiological research in the upper Ord catchment

- approximately 402 recordings of plant and animal species for the Jaru language group
- approximately 423 recordings of plant and animal species for the Kija language group
- comprehensive flora and fauna database for both Kija and Jaru language groups
- collection of spatial biological knowledge
- recording of Kija and Jaru concerns about changes to country and ecosystem trends
- documentation of seasonal indicators for bush tucker, bush medicine and plant resources
- intensive field research on Kija and Jaru Country
- identification of key land-use issues in Kija and Jaru Country.

Data management, GIS and cultural mapping with Kija and Jaru people in the upper Ord catchment

- cultural mapping database developed
- plants and animals database developed
- Cultural Knowledge Implementation Plan Strategy (CKIMS) framework developed
- Violet Valley field day as part of the integration workshop
- Violet Valley case study commenced under the integration project
- ground mapping exercise on Violet Valley.

Capacity-building and two-way learning for Kija, Miriwoong Gajirrawoong and Balangarra peoples in the lower Ord Catchment

- networks firmly established with educational institutions, government NRM agencies and community groups
- ranger training with Miriwoong people carried out with Kununurra TAFE
- pests, plants and animals awareness and information strategy developed
- Aboriginal Liaison Officer position developed and funded by the CRC for Australian Weed Management and WA Department of Agriculture
- Halls Creek 'Ribbons of blue' pilot project developed and implemented with WA State Waterwatch
- pesticides and water quality issues working group established in Kununurra.

The work carried out in these projects is the first time that collaboration has involved Aboriginal people to this degree in the East Kimberley. The projects formally involved Aboriginal people in scientific research, and acknowledged their wealth of information as equally important, an enormous step forward for the East Kimberley region. This work was carried out over a range of subject areas including collation of baseline biological information, recording of environmental change and ecosystem trends, spatial distribution of plant and animal resources, monitoring land-use and land-management issues, feral pests, plants and animals, and water-quality sampling and pesticide use.

Scientific research is an integral component of NRM. It is hoped that researchers, resource workers in NRM, government agencies, and community groups will learn from this report. It should be clear that the dedication that Aboriginal people in the East Kimberley have to becoming equal partners in NRM planning and decision-making is serious and crucial. It is vital that investment in similar programs continue into the future, to ensure that Aboriginal people are equitably involved and their knowledge and place in the East Kimberley firmly are recognised.

Aboriginal Management and Planning for Country



Diagram for successful cultural and natural resource management for Aboriginal people in the East Kimberley

Recommendations

Recommendations were developed with the Aboriginal Steering Committee and are a culmination of outcomes from meetings under SP5.

East Kimberley regional issues

- The development of an East Kimberley Aboriginal Resource Management Strategy should be resourced and completed. The report should have a map of the East Kimberley (EK) area, photos of country, flora and fauna, names of places and documentation of key cultural and natural resource management (NRM) issues from the relevant sub-regions. The report should be focused on the Ord and Keep River catchments, including the areas of Halls Creek, Warmun, Kununurra and Wyndham.
- A Cultural Heritage Management Plan for the Ord Catchment should be funded by the Department of Environment (WRC), AgWA, the Kimberley Development Commission, CALM, the Department of Indigenous Affairs and other State Government agencies.
- The Cultural Heritage Management Plan should be overseen by the Aboriginal Steering Committee.
- Funding should be sought for a KLC Kununurra based NRM facilitator to carry on the work that has begun in SP5 and won't be continued under the post-OBP project ('Integrated natural and cultural resource options for pastoral lands in the East Kimberley').
- Local and regional NRM committees such as ORWMG, OLW, EK LCDC etc. should include appropriate Aboriginal representation on their committees wherever possible.

Aboriginal Steering Committee

- The Aboriginal Steering Committee should be recognised as a strong voice for continuing involvement in land management and planning. The Committee should continue for another two years under the post-OBP project.
- The Aboriginal Steering Committee plays an important role in the management and development of Aboriginal NRM. This needs to be recognised in the current management structure set up by government and by all stakeholders in NRM in the EK.

Aboriginal ranger programs

- The Kimberley Land Council investigate holding a meeting in the EK to discuss Ranger programs including training and employment options. The meeting should include traditional owners from across the EK region.
- The Kimberley Land Council should be resourced to organise and facilitate such a meeting from government natural resource management agencies and other government agencies including local government and the Kimberley Development Commission.
- The funding of ranger programs should be investigated, including national park rangers, community rangers, fisheries rangers and women rangers. Aboriginal ranger positions should be full-time and paid. Government and non government organisations need to develop this in consultation with Aboriginal groups in the EK.
- Funding opportunities should be sought for EK Aboriginal people carry out educational field trips including visiting other Aboriginal people to learn from what they are doing and get ideas from them. A visit to Nitmiluk National Park in Katherine is recommended and could be resourced by either State Government NRM agencies and/or the Kimberley Development Commission.

- The options for developing and running the Conservation and Land Management Program in the EK with the Kimberley College of TAFE using block style method of learning should be investigated.
- A working group should be established with the Aboriginal Steering Committee, Kimberley College of TAFE and the Kimberley Land Council, other Aboriginal organisations (Waringarri, KREAC, Wunan, Kimberley Group Training, ATSSIS), and government agencies to develop a comprehensive ranger training program in the EK.

Ethnobiological research

- Ethnobiological research should continue to be supported by both State Government agencies and research institutions in the East Kimberley.
- The following organisations should be approached to secure funding to complete the final component of the Kija and Jaru Plants and Animals work: Argyle Diamond Mine, Land & Water Australia, Salay Mallay mining, Department of Education, the Australian Government Department of Environment and Heritage, Rio Tinto and ATSSIS.

Capacity-building initiatives

- The ‘Ribbons of blue’ program should continue within schools and the expansion of activities in the Halls Creek, Warmun and Kununurra areas should be supported so that it can include detailed monitoring work in the East Kimberley area. This work will be funded through the Natural Heritage Trust.
- Information products should be recognised as a key method of sharing information about Aboriginal peoples’ aspirations and cultural values in the EK. Resources should continue to be sourced to develop posters, radio ads, TV ads, video, books, newsletters; e.g. looking after country better, cleaning up rubbish, looking after water better, not to swim in bad water or irrigation channels.
- Funding should be sought to produce an EK newsletter on NRM issues for dissemination to Aboriginal communities.
- Capacity-building programs such as ranger training and other training initiatives should be a priority for State Government agencies and non-government organisations.
- The Aboriginal Management and Planning for Country video secured funding through the NHT Envirofund. The video should be managed in conjunction with the Aboriginal Steering Committee.

Cultural mapping and GIS

- A small workshop should be held to look at cultural mapping and GIS projects with other people involved in similar projects in northern Australia. The CRC for Tropical Savannas Management is a possible source of funding.
- The Cultural Mapping Database and GIS project is important for Aboriginal people of the EK. This work should continue over the next 2–5 years.
- Further funding be sought to develop a comprehensive GIS network and build up the institutional capacity of the Kimberley Land Council to administer this system.

Feral weeds and animals

- The CRC Weeds Aboriginal Liaison Officer position should continue. It is an important position for the EK and natural and cultural resource management.
- The ‘Pests, plants and animals information and awareness strategy for Aboriginal people in the East Kimberley’ should be implemented and continue to be supported by both AgWA and KLC.

Respecting and sharing traditional knowledge

- The Indigenous Land Corporation commitment to contribute funding for the CRC Weeds officer position should be followed up by the KLC and AgWA.

Policy initiatives

- Gender equity should be applied in research and development and cultural and natural resource management planning. This should be recognised by research institutions, government agencies and non-government agencies by ensuring that both women and men are employed to work on field research activities and as researchers.
- Collaborative and participatory research protocols should be developed by the KLC and endorsed by the governing committee for distribution to researchers, research institutions, government agencies and community groups with an interest in NRM.
- Aboriginal people from throughout the Ord catchment, including Kija, Jaru Miriwoong, Gajirawoong, Balangarra and Woolah people, should be involved in scientific research activities. Opportunities for collaboration with researchers should be optimised to allow for maximum benefit in relation to biodiversity conservation, cultural diversity and recognition of native title rights and interests. This should include government agency sponsored research including CALM, Waters and Rivers Commission and AgWA.
- Land unit assessment and land management planning work should be supported by an EK Aboriginal land management planner. Such a position should be funded by the ILC, ATSI and other NRM agencies and based at the KLC Land and Sea Unit. This position would support Aboriginal property owners including pastoral stations, outstations, and reserves.
- Joint management of Mirima National Park and other conservation reserves and Crown lands in the Kununurra region should be progressed in line with WA State Government policy released in 2003 and the aspirations of Miriwoong and Gajiwroong peoples. Areas that have been identified for joint management include Lake Argyle, Mirima National Park, Parys Creek lagoon, Lake Kununurra, Purnululu National Park and Lake Argyle regeneration area.
- Joint management of Purnululu National Park and conservation reserves, Crown lands in the Warmun and Halls Creek region should be progressed in line with WA State Government policy release in 2003 and the aspirations of Kija and Jaru traditional owners.
- Cultural indicators should be developed with traditional owners for conservation reserves, national parks and jointly managed areas. These indicators will assist in ongoing monitoring and evaluation of the areas cultural integrity.

Economic development

- The proposed but not implemented SP5 project 'Alternative economic opportunities for Aboriginal people in the Ord catchment: tourism, agriculture and horticulture' should be re-evaluated and considered for funding from alternative sources including the Kimberley Development Commission, Sustainable Regions, Shire Wyndham East Kimberley, Aboriginal and Torres Strait Islander Services and the Indigenous Land Corporation.
- An Aboriginal tourism strategy for the EK should be developed that identifies issues related to existing mainstream site usage and the development of Aboriginal tourism enterprises.
- A desktop study of alternative economic opportunities in the EK that fit within the realm of ecologically sustainable development should be funded. This study would examine Aboriginal businesses statewide and throughout Australia.
- Employment of an Aboriginal business development officer at the Kimberley Land Council should be investigated to work with Aboriginal people in the EK.
- The Argyle Diamond Mine should assist with developing traditional owner aspirations in cultural and natural resource management.

Introduction

Sustainable ecological management is principally a problem of human decision making. The challenge for responsible management of north Australian landscapes is to develop beyond narrow disciplinary boundaries. This requires conceptualising the problems to include indigenous people as significant partners with bodies of knowledge and practice with potential relevance to this challenge. Indigenous knowledge exists in its own right and will do so for so long as ATSI societies survive. Sound research and management planning can serve to identify that relevance. (Langton 1998, p. 74).

The *Aboriginal Management and Planning for Country* subprogram (SP5) provided unique opportunities for Aboriginal people in the East Kimberley. The Kimberley Land Council (KLC) seized an opportunity as far back as 1999 to make sure that Aboriginal people's rights and interests would be included in the proposal for an integrated R&D program in the East Kimberley. Mr Peter Yu, then Executive Director of the KLC, Mark Horstmann, Manager of the KLC Land and Sea Unit, and Mr Stuart Cowell from CSIRO, were instrumental in making sure that a separately funded program within the Ord–Bonaparte Program (OBP) would work towards meeting the needs of Aboriginal people in the East Kimberley.

There was debate about the establishment of a separate program and some stakeholders and community representatives believed that it created divisiveness and a lost opportunity for integration of Aboriginal people's research needs into the OBP. This is, in fact, an incorrect assumption, or a misunderstanding of the goals that the KLC had for the project.

As I would like to describe it, the approach employed has always been *two-pronged*. The Aboriginal program intended to focus on Aboriginal research needs and design specific research projects based upon these. For example, the priority of conserving and recording Indigenous traditional ecological knowledge (TEK) is a specific Aboriginal priority. In its own right, this type of research should be funded and acknowledged as highly important on a national scale.

There is strong interest from Aboriginal people about key land usage issues. For example, in Kununurra: 'Is the water I drink and fish from clean from pesticides?' This is no doubt a concern amongst all people who live in Kununurra. Aboriginal people are also station owners and need support and advice from relevant agencies about grazing and pastoral property management. Hence, collaboration and integration with the other OBP programs was essential.

The push for integration within the other sub-programs should not only have come from SP5 but also from the researchers and program leaders of those programs. It was identified amongst OBP sub-program leaders and researchers that there were different interpretations to a key concept of the OBP 'integration'. Integration is not merely collaboration but an extension of this into developing integrative research projects. If the OBP continued as originally planned, I am confident that integration would have been more collectively understood and agreed upon, and research projects for the 2003–2005 period implemented on this core principle.

Focus for the work

There was direction given to focusing work on the upper part of the Ord catchment, particularly in the Halls Creek area. The focus on this area was agreed before the appointment of the research

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coordinator by the SP5 Project Leader and OBP Chief Executive Officer under the direction of the KLC Land and Sea Unit Manager, Mr Mark Horstman. This decision was made for a variety of reasons, including the commitment of Miriwoong Gajirawoong people to the native title claim process and Ord Stage 2. This area was also a priority because of the lack of attention given to the Halls Creek area in the past.

Research proposals were developed by the research coordinator during the SP5 scoping study phase. Projects were developed based on core principles of best practice collaborative research, working together with Aboriginal organisations, communities and members to identify projects.

Following these principles, research projects were developed with traditional owners, involving them in all stages of the development, field research planning, implementation and identification of research outcomes and outputs.



Palm Spring, outside Halls Creek. Photo by Glenn Wightman.

Limitations to the research findings

Relationships take time

The *Aboriginal Management and Planning for Country* subprogram had a two-year lifespan. The first six months of work was carried out completing the scoping study and building on the project plan designed by the former SP5 Project Leader, Mr Stuart Cowell, and KLC Land and Sea Unit Manager, Mr Mark Horstman.

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The initial consultation period in the scoping study was six months. This was a time of learning and orientation for the research coordinator who had recently moved to the area. The OBP area is geographically diverse and includes four townships and at least 50 Aboriginal communities and outstations. It also bridges Western Australia and the Northern Territory.

Social research is a challenge, particularly when dealing in a culturally diverse and complex environment. The Aboriginal program was the only activity in the OBP with significant social research involving community members. Sub-Program 1, Regional Resource Futures, planned to engage the community at a larger scale, but was unfortunately dramatically downscaled after anticipated funding levels were not achieved.

The Ord catchment area is culturally complex, including eight language groups with diverse needs and aspirations. The building of personal relationships must be carried out over a long period and it was a year before sound relationships were made with three of the main traditional owner groups. Aboriginal people, like most people, base relationships on a demonstration of commitment and effort. Most researchers or community development workers will agree that working with people over many years assists in the development of a strong foundation for sound working relationships. This was achieved by spending time *on country* with people and learning from them. Time in the field was essential to establishing this trust.

The program time frame to complete consultation, including building relationships with people, was intensive. The field research period was short, with a one-year time frame originally provided to complete the three research projects. There were also seasonal factors, including the wet season when rain and flooding make travel impossible. The wet is also the time that cultural responsibilities are carried out, and from December through to February it is not appropriate to conduct meetings. People, after being bombarded with meetings throughout the year, also need a rest and time to themselves!

Aims and objectives of the Ord–Bonaparte Program

The OBP was an integrated natural resource management R&D program. The OBP had its origins in a scoping study undertaken in 1999 by CSIRO (Johnson et al. 1999) for the Land & Water Resources Research and Development Corporation (LWRRDC, now known as LWA) and the Fisheries Research and Development Corporation (FRDC). The scoping study outlined R&D needs for the sustainable use of natural resources in northern Australia. Among its many recommendations, the scoping study identified (Johnson et al. 1999, p. ii) the:

- ... *importance of addressing the relevance of human and cultural context and diversity in values within planning and management*
- ... *need for decision-making to integrate planning and management across terrestrial and marine environments*
- ... *critical importance of negotiation and conflict resolution strategies for future natural resource planning and management activities*
- ... *need for active and effective community involvement in planning and management activities*
- ... *need to enhance transfer of information between researchers, managers and key stakeholders across catchments, estuary and marine systems.*

Key issues identified in the scoping study included (OBP R&D Plan, pp. 4–5):

- ***Management of the Ord River catchment*** – *while there is a substantial body of data at the farm scale...stakeholders saw a need for improved baseline data across the entire catchment and not just the irrigation area*
- ***Aquaculture development*** – *potential particularly in Lake Argyle and Wyndham... but neither the socio-economic impacts nor infrastructure requirements have been assessed*
- ***Marine Resource management*** – *current understanding of marine systems of the Joseph Bonaparte Gulf is limited*
- ***Strategic Planning for the Kimberley***
- *Tourism planning*
- ***Indigenous management*** – *increasing indigenous ownership of pastoral land*
- ***Resources*** – *lack of human and financial resources were seen as fundamental constraints to natural resource planning and management in the Kimberley*
- ***Access to information*** – *a major constraint...necessary to integrate and make accessible existing data and information*
- ***Participation in planning and management***

A comprehensive R&D plan was subsequently drawn up for the period 2000–2005 in response to these key issues. The R&D Plan states that the ‘...aims of the OBP are underpinned by the environmental, economic, social and cultural principles of Ecologically Sustainable Development (as defined by the National Strategy for ESD, 1992)’ (NESD 1992, p. 6).

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The objectives of the National Strategy for Ecologically Sustainable Development are:

- to enhance individual and community welfare by following a path of economic development that safeguards the welfare of future generations
- to provide equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life support systems.

The R&D priorities for the OBP region include:

- social, cultural and political data/understanding
- participation – research into best practice for participatory planning
- institutions – reviewing and evaluating alternative institutional mechanisms
- capacity – lack of human and financial capacity.

Figure 1 illustrates where SP5 fits within OBP.

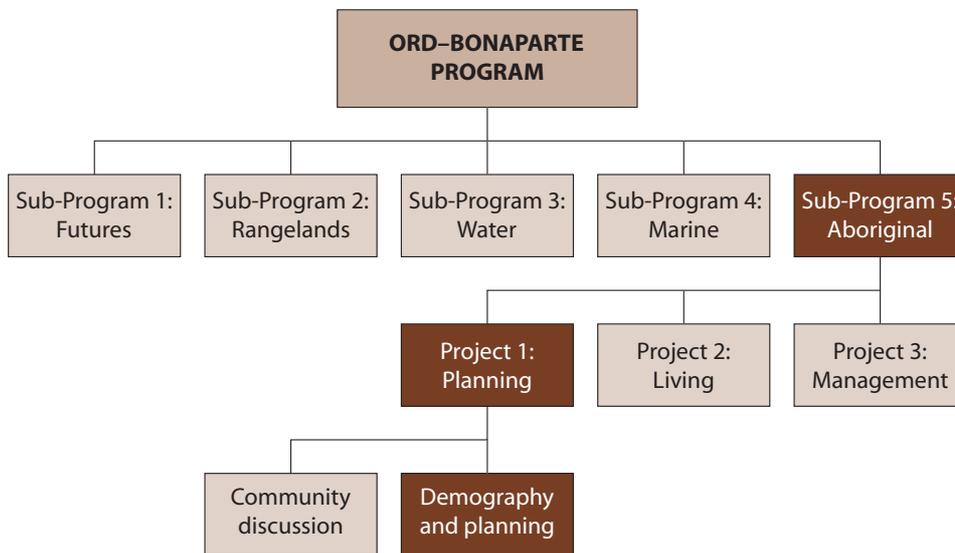


Figure 1. *Projects in Sub-Program 5 and their relationship to the OBP.*

The OBP commenced in 2000 and, while originally designed as a five-year program, was terminated by the funding partners in 2003 after a mid-term review. Some of the work commenced under the Aboriginal sub-program and the Rangelands sub-program is continuing in a post-OBP project on 'Integrated natural and cultural resource options for pastoral lands in the East Kimberley' commencing in 2004.

Overview of cultural, social and geographical context of the Ord–Bonaparte region

Geography

The Ord–Bonaparte Program region is centred on the catchments of the Ord and Keep rivers, at the southern end of the Joseph Bonaparte Gulf in north-western Australia. It is bordered by the Great Sandy Desert in the south, the Timor Sea in the north and the Indian Ocean in the west. The catchment area extends into the Northern Territory and includes areas such as Mistake Creek. This area consists of diverse landscapes and environments, including savanna rangelands, gorges, rivers, creeks, waterfalls, wetlands, estuarine floodplains and tidal marshes.

The Ord is one of two principal river systems in the Kimberley, the other being the Fitzroy River catchment. The Ord River includes Lake Argyle and the Ord River Irrigation Area (ORIA). Unlike the Fitzroy River catchment, the lower part of the Ord catchment area, from Lake Argyle down, has been modified by the construction of the dam at Lake Argyle and the Kununurra diversion dam. The river originates approximately 80 km north of Halls Creek and is about 650 km long.

Lake Argyle and Lake Kununurra are listed under the Convention on Wetlands of International Importance, especially as waterfowl habitat under the Ramsar Convention. The Ord River floodplain of tidal mudflats, mangroves, seasonal wetlands and permanent waterholes including Parrys Lagoon are also listed under Ramsar. The false mouths of the Ord River are the ‘most extensive mudflat and tidal waterway complex in Western Australia and contains some of the best strand of mangrove in the Kimberley in terms of species diversity, structural complexity, and size of the stands’ (WRC 1999, p. 16).

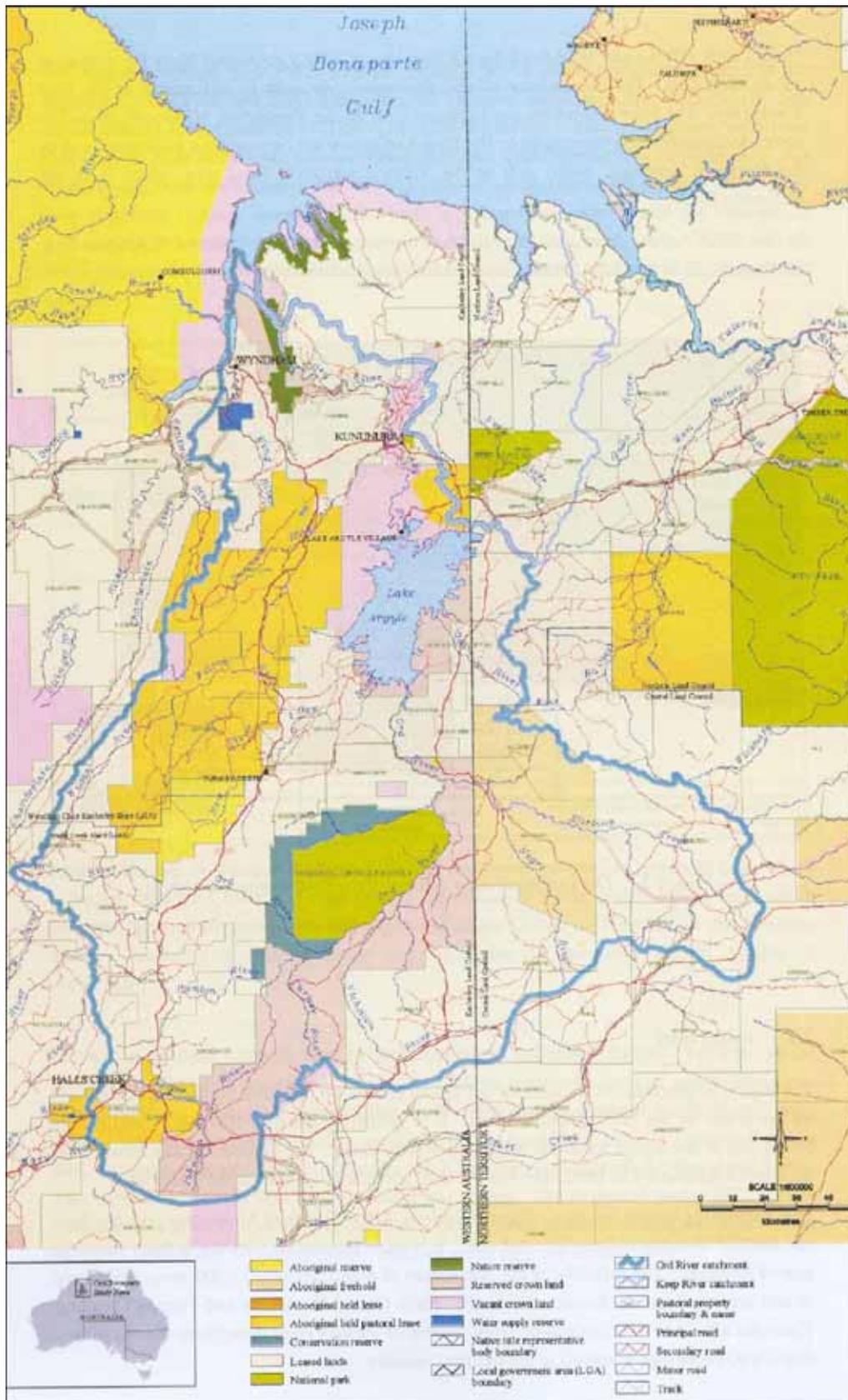
Hill (2003) notes that the East Kimberley region includes the following Interim Biogeographic Regionalisation of Australia (IBRA) bioregions: Victoria Bonaparte; Ord–Victoria Plains; and Central Kimberley.

The Ord Catchment has a climate that can be described as semi-arid to arid monsoonal, with the average annual rainfall ranging from 450 mm to 780 mm. The catchment average is 550 mm (WRC 1999, p. 15). Rainfall occurs predominantly in the months from December to March.

The soils of the catchment are influenced by the topography derived from their respective geological formations. Ranges and plateaus have a stony skeletal soil, while deep sandy soils are common on the valley floors (WRC 1999, p. 15). Floodplains are dominated by grey and brown, cracking clay soils. The vegetation of the plains is primarily a grassland and grassland–savanna woodland complex dominated by perennial grass species (WRC 1999, p. 15).

There are four main townships within the catchment area: Halls Creek, Wyndham, Kununurra and Warmun. Two others – Oombulgurri and Kalumburu – are closely associated with the region. In terms of administrative areas, the region incorporates two local government areas in Western Australia (Shire of Wyndham–East Kimberley and Shire of Halls Creek), and one in the Northern Territory (Victoria).

Aboriginal Management and Planning for Country



Map of OBP area showing land tenure

Cultural landscape and Aboriginal governance¹

First time you go country he don't know you. New fella – you gotta talk language to him then he know you. (Maggie Long, 2003)

Aboriginal people make up approximately 24% of the population of the Shire of Wyndham East Kimberley (SWEK) and 56% of the Shire of Halls Creek (ABS 2001). Approximately one third of land in the East Kimberley is under Aboriginal ownership.

A basic overview is provided here of the cultural landscape of the OBP region. To provide a thorough and comprehensive description and discussion of the cultural make up of this region would make a thesis and is responsibly held in the hands of anthropologists and linguists that have worked in the region for a much longer period (K. Barber, J. Bornmann, K. Doohan, F. Kofod, M. Langton, K. Palmer, H. Rumley, P. Sullivan, T. Tsunoda and N. Williams).

The OBP region is part of the traditional country estates of the Balangarra, Gajirrawoong, Jaru, Kija, Malngin/Gurindji, Miriwoong, Ngarinman and Woola-speaking peoples. As an example, the Kija language group extends from Halls Creek to Warmun and encompasses many family groups and traditional country estates. Throughout the East Kimberley a complex web of Aboriginal customary familial relationships exists. Many Aboriginal people identify through language. For example, a person will refer to themselves as Kija or Miriwoong or Jaru.

But even this identification is not straightforward. Sullivan (2001, p. 21) points out the complexity of the issue:

Where these relationships are expressed as language relations we still have to deal with the question of members of language owning groups speaking several languages, or no non-English language, or dialects and regional variants of a language. And even here the production of language and languages varies according to social and spatial context.

The growth of native title claims has made the identification of people responsible for specific areas of land more tangible in some cases. As Sullivan points out, the claim group is 'usually familiar with discussing and negotiating land issues' and 'are necessarily formulated on the grounds of a system of law and custom held by a community of native title holders' (Sullivan 2001, p. 22). Of course there are areas where there is conflict between parties as to who the correct native title holders. Sometimes these exist because of long-standing conflicts between family groups, or the pressure of proving connection to country through processes of the Western legal system.

Many regions are described in terms of their non-Indigenous social structures. In many parts of Australia this may be more appropriate than in the OBP region. However, in this region the role of traditional owners and their supporting institutions, the Aboriginal and Torres Strait Islander Commission (ATSIC) and native title representative bodies (NTRBs) in particular, creates another governance perspective.

In the OBP region, there is one ATSIC regional council in Western Australia (Wunan). Wunan Regional Council consists of three wards: Wunan ward (northern, coast and Kununurra), Yarley ward (central, Halls Creek and Turkey Creek) and Kutjungka ward (southern, desert area). There are 10 councillors, including the chairman and deputy chairman. In the Wunan Regional Council area there are over 80 Aboriginal communities and outstations. There is also one regional council in the Northern Territory (Katherine).

¹ Parts of this section were written by Stuart Cowell as part of the SP5 scoping study.

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- 2 *Outstations [average size 30 people] and other small groups in remote areas linked to a resource organisation in a nearby Aboriginal township or other regional centre*
- 3 *Aboriginal communities in State or Territory capital cities and major urban areas*
- 4 *Aboriginal communities whose members are residents of country towns mixed in with a predominantly non-Aboriginal population*
- 5 *Groups of Aborigines living in an identified location or camp site near or within an urban area and having different arrangements from the town for municipal services or no such facilities at all.*

The Ord–Bonaparte region encompasses all of these other than category 3. Using this typology the communities in the region can be described as:

- discrete Aboriginal townships – Oombulgurri, Kalumburu, Warmun
- outstations – various
- residents of country towns – Kununurra, Wyndham, Halls Creek
- identified location or camp site – Kununurra particularly.

It could be argued that Halls Creek fits within both the first and third category.

It is likely that the existing residential pattern in the region will continue into the future. Coombs et al. (1989) identify that some Aboriginal people will continue to live near or on *country*, others in town camps or identified locations, and others as part of the regional centres entirely. Aboriginal people will move between these locations both temporarily visiting and on more permanent bases. For a more detailed analysis see Williams and Kirkby (undated).

Outstations are seen as ‘critical operational bases for land management’ that allow people to live on *country*, an important precursor to being able to manage it (ILC no date). In the 1980s, the Western Australian Government began a program of excising small areas of land from vacant Crown land and some from pastoral leases and leasing these to Aboriginal people (Sullivan 2001, p. 14). The establishment of outstations or living areas is still being negotiated with the State Government in parts of the OBP region, particularly in Kununurra and Halls Creek.

These living areas are considered a ‘second-best’ solution to the ongoing problems of securing access and land tenure. The blocks are usually of ‘100–300 hectares, accommodating an average of 30 people, but are an insufficient size to support a viable land-based enterprise’ (KLC 1996, p. ii). The majority of Aboriginal land is held by the Aboriginal Lands Trust (ALT). Outstations, however, do offer income opportunities for residents. These include tourism enterprises, artwork, retail and construction.

Sub-regions

A brief and general discussion of the sub-regional areas is given below. This should not be viewed as a complete list.

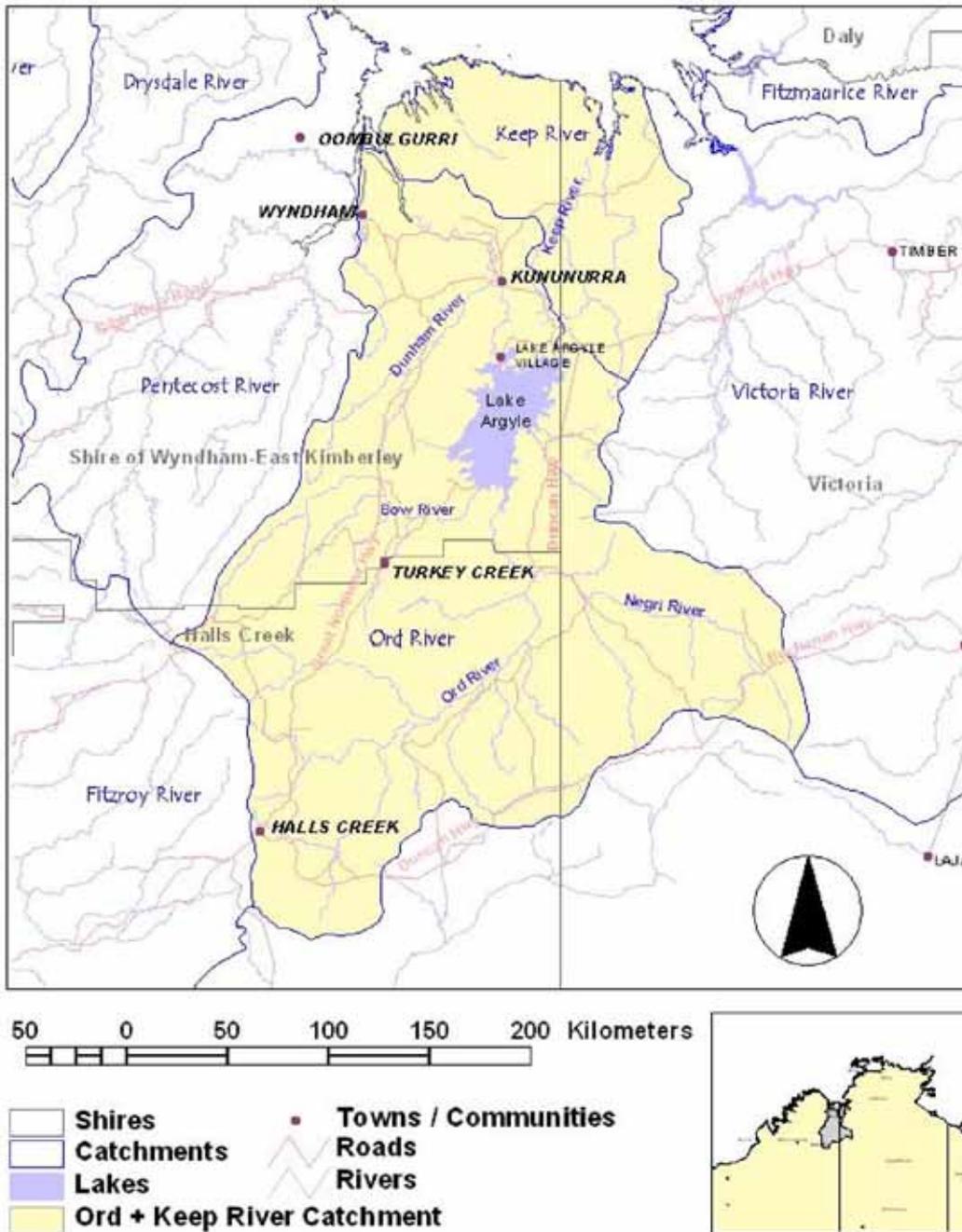
Kununurra and outstations/communities

This area encompasses Kununurra and the land surrounding the township extending to the Keep River in the east, south to the Carr Boyd Range and Lake Argyle belongs to the Miriwoong and Gajirrawoong people. It includes but is not limited to the following communities: Mirima reserve, Garden area, Bell Springs, Molly Springs, Yirralarlem, Four Mile, Ngulwirriwirri, Cockatoo Springs, Dingo Springs, Emu Creek, Wugubun, Keep River National Park, Bucket Springs,

Bubble Bubble, Police Hole, Ningbingi, Nulleywah, Mandangala Community/Glen Hill Station, Ivanhoe Station, Carlton Hill Station, Parrys Creek Lagoon and Reserve, Goose Hill, Lake Argyle, Lake Kununurra, Mirima National Park.

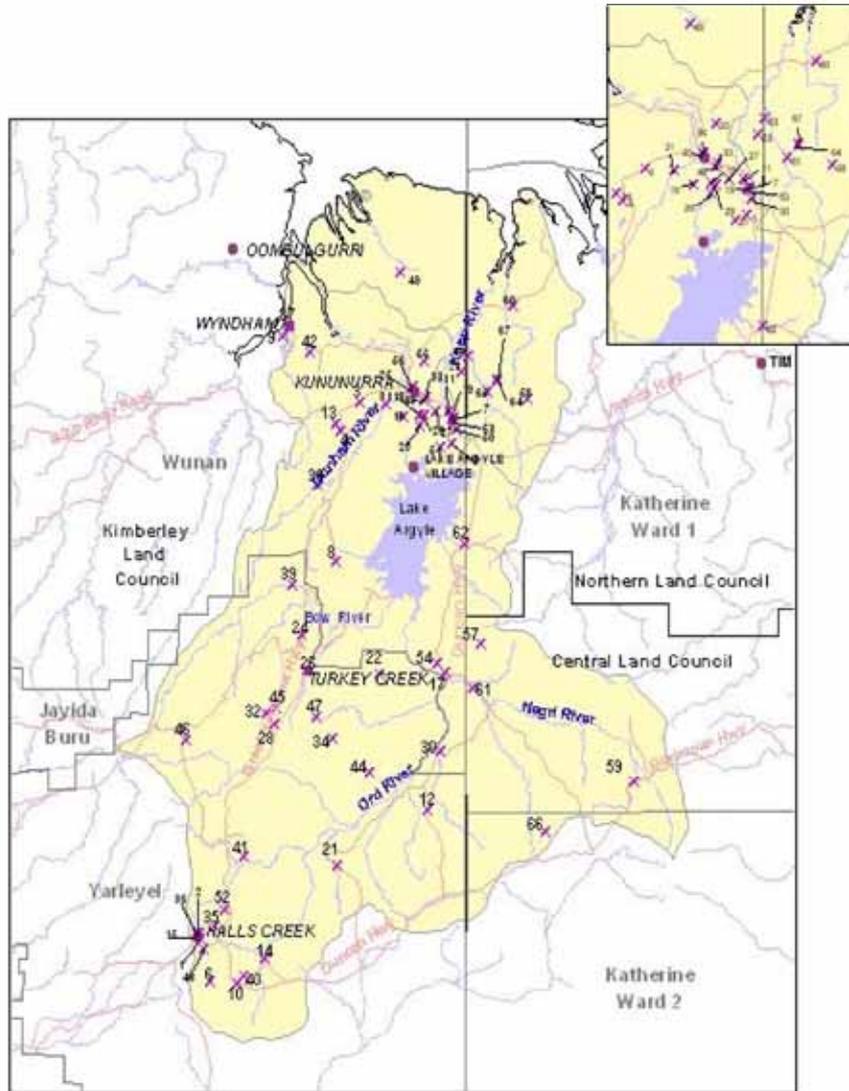
Warmun and stations/communities

Warmun is in the heart of Kija Country. Kija Country also includes the following areas: Bow River Station, Lissadell Station, Violet Valley Reserve, Texas Downs, Alice Downs, Springvale, Bedford Downs, Spring Creek, Purnululu National Park, Frog Hollow, Norton Bore, Chinamans Garden, Crocodile Hole.



Map of OBP region showing settlements, catchment and shire boundaries.

Respecting and sharing traditional knowledge



No. Community	No. Community	No. Community
1 NICHOLSON CAMP	23 KUMBRARUMBA	45 KALUNGKURRIJI
2 RED HILL	24 BOW RIVER	46 JANTERRIJI
3 MOLLY SPRINGS	25 NULLEYWAH	47 LUMUKU
4 WUGGUBUN	26 WARMUN	48 EMU CREEK
5 DINGO SPRINGS	27 HOLLOW SPRINGS	49 NIMBING
6 NGYALAWILLI	28 WURRENRANGINY	50 COCKATOO SPRINGS
7 FOUR MILE	29 BELL SPRINGS	51 ALLIGATOR HOLE
8 GLEN HILL	30 MALANGAN	52 FLETCHER FAMILY
9 GUDA GUDA	31 FLYING FOXHOLE	53 EIGHT MILE
10 BARANGYA	32 BAULU WAH	54 DARLU DARLU
11 RED CREEK	33 YUNA SPRINGS	55 WAWULM
12 CATTLE CREEK	34 KAWARRE	56 MIRIMA
13 DILLON SPRINGS	35 MILBA	57 BAMBOO SPRINGS
14 WUNGU	36 MARDIWA LOOP	58 BUBBLE BUBBLE
15 YARDGEE	37 WARRAYU	59 LIMBUNYA STATION
16 YIRRALALLEM	38 WOOLAH	60 MARRALUM
17 RB RIVER JUNCTION	39 CROCODILE HOLE	61 MISTAKE CREEK
18 MUD SPRINGS	40 LINGA	62 ROSEWOOD
19 NGULWIRRIWIRRI	41 CHINAMAN GARDEN	63 SPIRIT HILL STATIO
20 GEBOOWAMA	42 GOODARL	64 BUCKET SPRINGS
21 KARTANG RIJA	43 WUNKUL	65 POLICEMANS HOLE
22 KAWANYPUNJAI	44 MINDI MINDI	66 MT MAIYO
		67 DOOJUM

Figure 3. Aboriginal communities, ATSIC zones and NTRB boundaries in the region

Doon Doon Station and Woolah Community

Doon Doon pastoral lease is held in trust by the Aboriginal Lands Trust and straddles a number of traditional owner boundaries.

Halls Creek area

Halls Creek consists of two main traditional owner groups: Jaru and Kija. It includes the following communities and stations within the catchment: Yardgee, Mardiwa Loop, Nicholson, Red Hill, Lamboo, Koongie Park, Moola Bulla, Elvire, Flora Valley, Turner River, Sophie Downs, Kundat Djaru (Ringer Soak), Wungu, Old Town, Bedford Downs, Sturt Creek, Ruby Plains, Caroline Pool and Sawpit Gorge.

Wyndham

Wyndham's traditional owner organisation is the Balangarra Aboriginal Corporation. Wyndham area includes the town of Wyndham and outstations Guda Guda including Parys Creek Lagoon and Reserve and the floodplains of the lower Ord. The Wyndham area includes both the Miriwoong Gajirrawoong and Balangarra native title claims. The Balangarra claim extends over El Questro station and Home Valley station. Oombulgurri is the main distinct Aboriginal community in the area.



Many pastoral leases are now run by Aboriginal people. Gates to Juwurlinji Community (Bow River station).



Tracy Ramsay, Charlie Cann, Rammy Ramsay, Chocolate Thomas, Mona Ramsay, Russell Gallagher (KLC), Ronny Ramsay, Michael Ramsay and Barry Anderson at the Bow River meeting in March 2002.



Road into Glen Hill station with Miriwoong name for spring on the sign



Sign into Ringer Soak community



The Ord River before the dam: "...view upstream from the abutment of the future Lake Argyle dam wall". This area is now under water. The photo shows the place where old stockmen remember bringing cattle to water. Photo by Peter Davies.

Subprogram 5 (SP5)

Introduction

Subprogram 5 was developed as an activity with three key components: Planning for Country, Living on Country and Using Country. These represented a linear progression of working with the region's traditional owners to explore the development of land-management plans for their *country*, and in developing ways that traditional owners' aims would be a core part of NRM decision-making. 'Planning for Country' is the thread (see Figure 3) that runs through the SP5.

The aims of **Planning for Country** (community-based planning and capacity-building) were:

- for Aboriginal people to give informed consent for their involvement in OBP and its processes, and access to their country for research
- to talk to people about the OBP
- for Aboriginal people to express what they want for their country (marine, aquatic and terrestrial) and the region, now and into the future (people's aspirations)
- to identify options that allow those aspirations to be expressed in decision-making about the region
- for Aboriginal people to plan for their country and participate in making plans for the region (communities develop capacity to be involved in regional planning)
- to provide a vehicle for other agencies to discuss research projects with Aboriginal communities.

Living on Country entailed fundamental ethnobiological research to identify the range of values applicable to *country* for use in later management planning.

Examples of the type of research:

- ethnobiological research with each native title group
- record and conserve traditional knowledge, document Aboriginal knowledge of environmental change and patterns of resource change
- economic valuation of contribution of ecosystems to Aboriginal economies
- research into impact of land uses (irrigation, tourism, cattle) on Aboriginal economies
- provides information for the other OBP research programs – Resource Futures, Marine, Rivers and Water and Rangelands.

Using Country (the application of the planning skills including outputs from other OBP subprograms to the management of *country* and enterprises on *country*) applies information from planning and fieldwork for development options, such as:

- commercialisation of wildlife
- tourism
- pastoralism
- aquaculture
- restoration of country and wildlife (kangaroos, emus)
- conservation
- ongoing Aboriginal land and water management.

The scoping study that highlighted key issues in northern Australia leading to the development of the OBP noted that (Johnson et al. 1999, p. iii):

- *Indigenous people have to date largely been marginalised in economic and natural resource planning, management and decision making, despite the demographic reality of tropical Australia.*

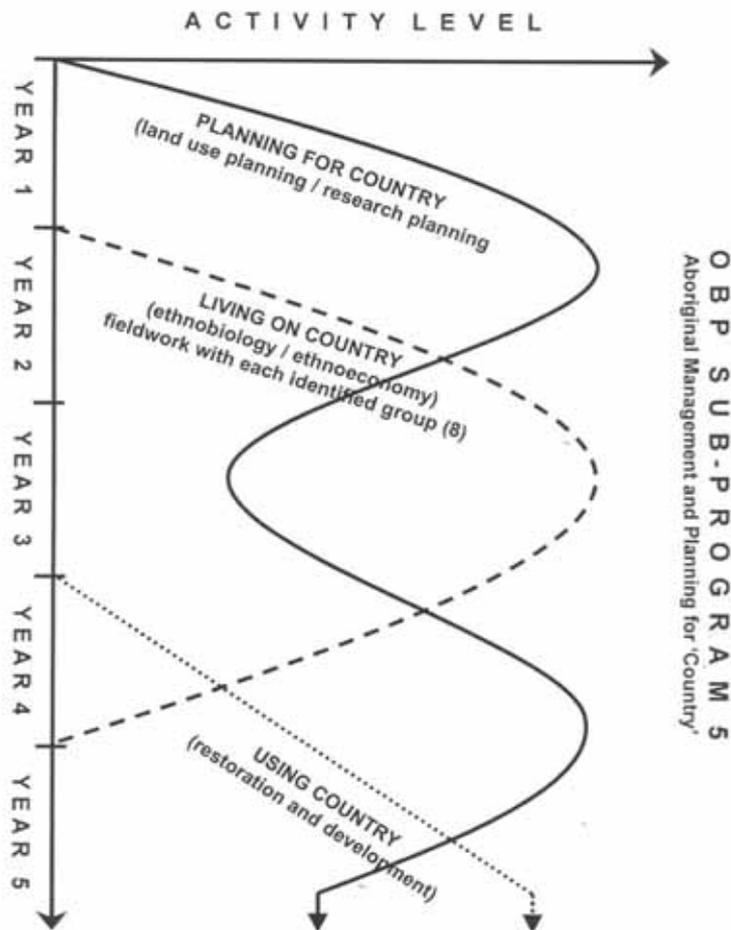


Figure 3. This flow diagram shows the original intersections envisaged between the three main themes of SP5 – Planning for Country, Living on Country, and Using Country – over the five-year period of the OBP.

- *There is a lack of effective recognition of indigenous aspirations and rights in resource management in the region, particularly the lack of incorporation of Native Title into broad land use objectives.*
- *Indigenous communities and agencies are poorly resourced for participation in planning and management processes.*
- *There has been poor integration of indigenous knowledge in resource planning and management practice, in part due to a lack of appropriate mechanisms to do so.*
- *Stakeholders identified the need for parity between indigenous tenure systems and agency management boundaries, or recognition of the distinction between them at a management and jurisdictional level.*
- *There is a need for development of multiple use strategies on indigenous controlled land so as to achieve viability in landowner's terms.*
- *There is a need for capacity building to assist in planning and management was seen to be urgently needed among Aboriginal landowners.*
- *The lack of cohesion between State, Territory and Commonwealth agencies on indigenous resource management issues remains a serious constraint.*

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In responding to this, the subsequent R&D plan for the OBP identified the need for collaborative research, community participatory planning and capacity-building projects to support the involvement of Aboriginal people. These projects were to be spread throughout the OBP, but were to have a specific focus in an identified Aboriginal research program – subprogram 5: *Aboriginal Management and Planning for Country*. It was argued that, as well as full involvement in all aspects of the research across the OBP, a specific and targeted investment was required to allow for the effective involvement of the region's Aboriginal people. This would recognise that, while Aboriginal people have an interest in all research, they also have research needs that are different to research priorities of non-Aboriginal peoples. These include priorities related to cultural maintenance and tradition.

SP5 was built around the need to identify the Aboriginal communities and what involvement, if any, they would want with the OBP. From this point, the aim was to engage in a process of collaborative research development, community-based planning and management, utilising the method of participatory processes for planning for country. SP5 was to operate across the three projects listed above – Planning for Country, Living on Country, and Managing Country – over a five-year time frame.

It was planned that the first two years would be spent establishing and building relationships, mapping NRM issues and starting ethnobiological work. The remaining time would be spent in implementing planning activities and building on work carried out, such as looking at possible commercialisation of wildlife or bush tucker species, aquaculture and tourism ventures, input into water-allocation planning processes, and development of management and property plans on both large and small scales.



Gunanurang (Ord River)

SP5 scoping study

Country in Aboriginal English is not only a common noun but also a proper noun. People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country. People say that country knows, hears, smells, takes notice, takes care, is sorry or happy. Country is not a generalized or undifferentiated type of places, such as one might indicate with

terms like 'spending a day in the country' or 'going up the country'. Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life. Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease.
(Rose 1996, p. 7)

Objectives

Certain events and issues curtailed the comprehensive scope of the work originally proposed under SP5. A key issue was that all the anticipated funding for the OBP did not eventuate and, early in the program, implementation all the subprograms had to dramatically reduce the scope of their intended research. Some steps remained fundamental to the SP5 process, e.g. to better understand who the communities are and what planning and management approaches already existed.

Two paths have been followed for each task: desktop and community based. These reflect the twin goals of building bridges across the divide between participatory processes and more technically focused approaches, and across the cultural divide between the whitefella proposal of the OBP and the communities on whom it was focused.

The aims of the SP5 scoping study were to undertake a primarily desktop identification of who the Aboriginal communities in the region are and link them to different resource uses in the region; and set out planning and management activities already being undertaken in the region.

The study (Cowell and Pursche 2002) aimed to:

- compile social and demographic profiles of the Aboriginal population at community and regional scale using public and institutional records ... to characterise the relationship of communities to the region, and to identify communities to work with. Patterns of current land use and tenure will also be summarised
- review existing planning and management processes and activities being undertaken by Aboriginal communities and agencies in the region. Review of existing information on land use aspirations (e.g. reports prepared for EIA).

Key findings

The following findings were highlights of the scoping study.

- The Aboriginal cultural landscape of the OBP region is complex and multi-layered. The historical, social, economic and environmental realities of Aboriginal people are accordingly diverse. Oversimplification, presumption and assumption of Aboriginal people's aspirations for participation and involvement in natural resource management and planning within the region would be naïve.
- Aboriginal people are still, statistically and in reality, experiencing the effects of extreme poverty, and poor health and education levels. This is despite previous and ongoing regional development and planning activities aimed at better economic and social outcomes for the region. Although care needs to be taken when applying statistics as measures of well-being, it is clear that regional development is still not focusing on the needs of the Aboriginal community. The OBP, and its sub-programs, with their focus on sustainable NRM, can only address issues in relation to this. The projects will aim to include, through participatory planning processes, the better involvement of Aboriginal people in regional NRM decision-making and future planning.
- Aboriginal relationships to the region, and therefore Aboriginal involvement in the future of the region, are not restricted to people that live in the area encompassed by the Ord and Keep

Respecting and sharing traditional knowledge

River catchments, but include people from Kalumburu, Timber Creek and Port Keats. Planning for the management of the region should therefore allow for the involvement not only of resident populations, but also non-residents with responsibilities for the management of *country* in specific areas.

- Maps and statistics suggest that Aboriginal people in the region of the OBP live in the towns of Kununurra, Wyndham, Warmun and Halls Creek, but there are also many smaller Aboriginal communities throughout the region. Although not all of these are used throughout the year, they show that Aboriginal people live on *country* throughout the region. There has been a significant shift toward outstations as living areas (Taylor 1991, p. 2). This demonstrates the active and ongoing cultural responsibility and association with *country* and the need for 'dispersed' ways of working with communities in any approach to developing regional management strategies.
- Aboriginal people in the region are already carrying out management and planning for *country*, and have done so for millennia. A key task is the development of a regional language for communication between Aboriginal and non-Aboriginal natural resource users. For example, an integral component of traditional land management techniques is the conservation and passing on of knowledge to future generations.

The scoping study proposed three research projects for the OBP Board to consider and these were subsequently funded. These projects are discussed in the chapters to follow.



Miriwoong rangers at Ivanhoe Crossing

Community understanding of NRM

Aboriginal 'management' of the environment is understood through song and ceremony. It is seen to be more of an integrated process whereby knowledge of the natural world is gathered through personal experience and passed on through tradition and culture. Aboriginal management links people to their environment rather than giving them dominion over it. Aboriginal relationships to land are defined in terms of culture and site protection, land usage and harvesting of natural resources. (Rose 1995, p. xvii)

Aboriginal Management and Planning for Country

In the scoping study phase of the project, one of the key tasks was to conduct meetings and discussions around the catchment area, introduce myself to people and talk about the OBP. Most important was to discuss what the OBP aims were and what SP5 was aiming to achieve. Reading the literature of the OBP, I discovered that it contained nothing that would help me explain to people, in simple and plain English, what the OBP was all about.

I would explain the project in words something like this:

That gardiya mob in Canberra and also that state government mob who are supposed to look after all this land they want to do a project looking at that Ord River. And not just that Ord River that whole area around him where all those other creeks flow into the Ord starting from Halls Creek including Warmun, Kununurra and where that river flows into the sea. All that country – land, creeks, river and that sea country.

They want to see if that country is healthy because in some other areas in Australia even down south in Western Australia they buggered up that river system. They wrecked that country now by having too much cattle or sheep or even growing cotton. They now have to spend millions of dollars trying to fix it up. They don't want that to happen here.

This OBP have set up this Aboriginal program and my job is to come and talk to everybody and see what concerns you have about your country and learn what you are doing on country and what you want to do in the future.

The location of the meeting would determine the response. In Kununurra I was told by a Miriwoong traditional owner that 'the country is buggered up already' and that

...white people have buggered up all that Ord River, drowned people's country and you can't even get access to that river. White people aren't conservationists they buggered all this up and have been poisoning people with all the spray that is used for farming.

Kija people at Warmun would talk about the damage that the Argyle diamond mine has created and the desecration of sacred sites. Changes to the Ord River would also be discussed and issues regarding fisherman on Lake Argyle netting and leaving dead fish on the banks. A central issue was not having access to country on pastoral stations and the stress caused to both older and younger people.

Halls Creek people talked about similar issues. In particular, concerns about local swimming and fishing places and contamination from both mining and sewage. People in Halls Creek were also very concerned about the progression of native title claims and the wrong people talking for country.

Essentially, the issue regarding communication is not about Aboriginal community members understanding the concepts of western NRM. It is about the concepts, aims and objectives being explained clearly in plain English and not using government jargon and whitefella terminology.

As evinced in the quote by Deborah Bird Rose at the beginning of this chapter, Aboriginal peoples' understanding of *management* comes from another world perspective to that of traditional western style of thought. This must be acknowledged, recognised and considered when developing, producing and presenting information about R&D and NRM.

Research projects

In April 2002, the OBP governing board approved funding for three, interrelated research projects developed by the research coordinator in conjunction with community members:

- Plants and Animals
- Data Management
- Cultural Mapping.

The development and identification of research proposals took place during the initial six-month scoping study phase of the project.

The development of these projects is discussed in more detail in the scoping study report (Cowell and Pursche 2002).

The following chapters describe each research project, under the headings:

- project objectives
- background
- methodology
- achievement of outcomes and outputs.

The projects primarily worked together with three of the main traditional owner groups from the Ord catchment in particular the Jaru, Kija and Miriwoong people.

The projects have built the base for research to continue over the originally proposed five-year lifespan of the OBP. It was envisaged that once relationships were consolidated with these groups, research could be refined and built upon and new research projects developed with other groups in the catchment. Unfortunately, the early completion of the OBP will not allow this to eventuate.

Plants and animals of Kija, Jaru Country: Aboriginal knowledge conservation and ethnobiological research in the upper Ord catchment

Project objectives

The objectives of this project were to:

- provide baseline biological information based on Aboriginal perspectives for the upper section of the Ord catchment to add to the region's biological inventory
- add to understanding in the region, of long-term ecosystem trends and ecological relationships between plants and animals
- conduct ethnobiological research with senior Kija and Jaru speakers, recording baseline information about flora and fauna including names in Aboriginal, English and Latin language names, cultural information, distribution, seasonal variation, traditional land-use systems and contemporary use
- record and conserve traditional knowledge to assist with its recognition and application to contemporary management
- establish baseline information for economic valuations of contribution to ecosystems for Aboriginal economy
- collect information about potential impacts of land uses (e.g. irrigation, tourism, cattle) on Aboriginal economies (e.g. hunting, fishing etc.)
- provide information links to the other research sub-programs in the OBP – Regional Resource Futures, Marine, Water, and Rangelands
- refine the understanding of Kija and Jaru aspirations for natural resource management.



Sorting Konkerberry. Photo Glenn Wightman.

Background

*People should know we got meaning. We got meaning for us. From the bottom.
We got meaning from long time ago. (Mary Thomas, Warmun)*

This project implements both the Planning for Country and Living on Country projects of SP5.

It is increasingly recognised throughout the world that Indigenous people's knowledge can assist and increase our understanding of a region's ecosystem trends. As stated in the book entitled *Coordinating Research and Management to Enhance Protected Areas* produced by the IUCN, the World Conservation Union and the Science and Management of Protected Areas Association (Harmon 1994, p. 28):

Traditional environmental knowledge can contain highly technical information that is invaluable to enhancing protected area research and management. Through their long standing familiarity local people often develop fine-grained classifications of natural phenomena which, though informally recorded, are every bit as sophisticated as a professional taxonomist's.

The benefits of this research clearly extend into NRM in the broader landscape. A key component of Aboriginal land management is ensuring that knowledge is retained and transferred to younger people and future generations.

Ethnobiological research with Kija and Jaru people from the Halls Creek–Warmun region directly relates to Living on Country. Both Kija and Jaru people are actively involved in hunting, collecting and gathering of natural resources. These include plants, animals and minerals. For example, people often collect goanna, bush turkey or kangaroo, or fruits such as konkerberry, bush plum, bush orange or sugarbag. Specific parts of plants and trees are also used for medicinal and healing purposes, or in ceremonies. It is important for people living in Halls Creek and Warmun, and on outstations or Aboriginal-owned stations, that these resources are available and accessible.

The Kimberley Language Resource Centre (KLRC) in Halls Creek received part funding from ATSIC for a 'Plants and Animals' project. The Plants and Animals project was originally designed to document, record and produce a book with Jaru people. To expand the opportunity that the Plants and Animals project presented for NRM planning, the OBP became a partner in the project, value adding to the KLRC project by providing resources for a biologist, language specialists, field trips and logistical support from the KLC. This also allowed the project to include the Kija language and therefore the study area to be expanded to include approximately over one third of the Ord catchment area.

The aims of the KLRC project originally did not extend into the management of the regions natural resources but the collaboration with the KLC and OBP provided an excellent opportunity to collect baseline data on the area's flora and fauna and ecosystem trends. This information is intended to be used in a GIS system and to inform future management aspirations for Kija and Jaru Country.

Participatory planning

It is a priority for Jaru and Kija people living in Halls Creek, Warmun, and surrounding communities and stations that Kija and Jaru language, cultural information and traditional use of flora and fauna in the region be recorded for transmission to their children and future generations.

Aboriginal Management and Planning for Country

In November 2001, a joint workshop was held between the KLC, OBP and the KLRC to discuss the Plants and Animals project being developed by the KLRC and the possibility of OBP and the KLC joining together to work on it. Approximately 30 Kija and Jaru people attended the workshop. The workshop talked together as a big group and then broke up into three smaller groups to talk about plants and animals, and how people might like to do the research and land-management activities.

There were a number of issues talked about in these small groups. These included key plant and animal species including bush turkey, echidna, emu, wallabies, kangaroo, bush lemon, bush plum, bush onion, brolga, freshwater mussel, bilby, dingo, frogs, ducks and bandicoots.

People also talked about the following issues:

- seasons for collecting and hunting of bush foods
- bush medicines
- access to non-Aboriginal-owned pastoral stations
- flora and fauna species that have decreased in abundance
- impacts of mining
- introduction of feral animals and weeds
- looking after country for cultural maintenance
- looking after country and developing tourism enterprises
- teaching children and taking them out bush to show them ways of their mother and father
- burning country – people have different ways of burning country
- Aboriginal names and signage.

People also talked about how they would like this information to be recorded and presented. These included the following suggestions:

- photos, video and tape recording
- signs with Aboriginal language names and stories
- posters
- a CD-ROM
- a book with colour photos of plants and animals
- Aboriginal paintings and drawings
- Aboriginal people have control of information
- protecting intellectual and cultural property rights.

The meeting participants agreed that they would like the KLRC, KLC and the OBP to work together. A community meeting was also held with Kija people from Warmun and surrounding communities on 14 March 2002. It was agreed at this meeting that people would also like to be involved in the project and work together with the KLC and KLRC.

Tamba Banks said that it was:

...important to realise that Aboriginal people have names for everything before renamed by white people.

Lulu Trancollino, a senior Kija woman, said it was important for this work to be done because:

People know that country, walked that country.

Relevance to OBP

The extension of the Plants and Animals project enabled a broader geographic area of study, including Warmun and outlying stations and communities. Additional data were collected and collated, including material on histories of environmental and land-use change, seasonal use and variation, and identification of key land-use issues.

Respecting and sharing traditional knowledge

Data collected in the project will be used in conjunction with the framework established through the SP5 GIS project. Traditional ecological knowledge can be linked to the spatial data in the GIS, including long-term ecosystem trends and biological data. Satellite imagery and aerial photography contained in the GIS can be classified to enhance vegetation types or other natural resources of particular interest to traditional owners.

This study also addressed the R&D priorities for the OBP region identified in the OBP scoping study and R&D plan including:

- resource inventory – collection of biological data for the upper Ord
- social, cultural and political data/understanding – further understanding of Kija and Jaru knowledge
- integration – incorporating Aboriginal traditional knowledge into NRM data and management systems
- participation – directly involve Kija and Jaru language speakers from Halls Creek, Warmun, Bow River, Violet Valley, Osmond Valley, Sturt Creek, Marella Gorge.



Plants and Animals workshop, 2001, KLRC. L to R: Fiona Walsh, Rhonda Matthews, Geraldine Demi, Mavis Taylor, Maggie Long, Bidy Dimbinah, Mark Horstman (KLC), Tamsyn Banks



Plants and Animals workshop, 2001. L to R: Doris Fletcher, Tiger Henry, Tanba Banks, Mavis Wallaby, Lawrence Emery (KLC), Angeline Bedford, Lulu Trancollino

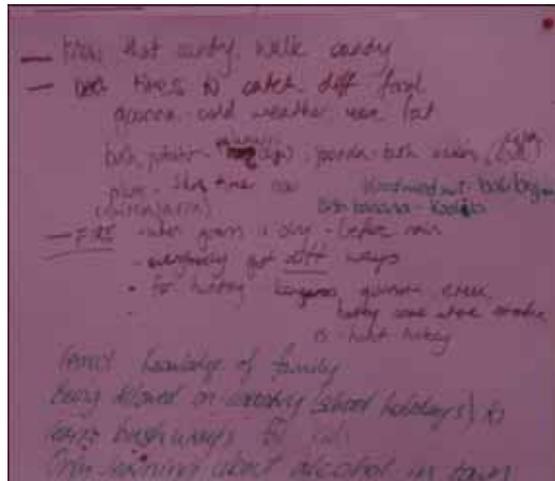
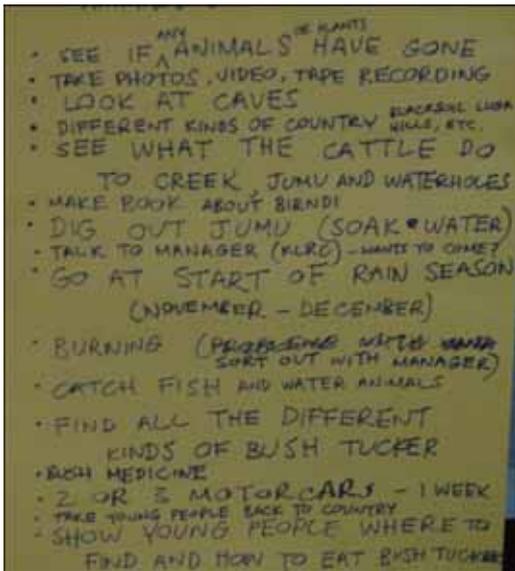
Skills needed for the project

The following skills were brought to bear on the project:

- traditional ecological knowledge of Aboriginal people
- strong community base of KLRC
- linguistic skills from KLRC
- organisational capacity of KLC
- KLC's demonstrated track record in undertaking ethnobiological research
- skills of experienced ethnobiologist providing consultancy services.



Plants and Animals Workshop, 2001. L to R: Archie Tanna (KLC), Joseph Blythe, Bonnie Deegan, Peter Tamba, Vera Cox, Stan Brumby, Lorraine Stretch, Rosie Malgil, Rose Stretch, Mary Ann Taylor Blythe – centre.



At the workshop we divided into small groups, wrote up everybody's thoughts on cardboard and then came back to the big group and talked about the issues raised.

Traditional ecological knowledge

Traditional owners possess specialist knowledge about plants and animals, ecological systems and processes, and environmental and land-use change. The recognition of Aboriginal science or 'traditional ecological knowledge' has increased worldwide and is an invaluable resource for Western scientists in developing a better understanding of a region's natural resources.

Technical expertise

Field trips included the following participants: linguist, biologist, language workers, language specialists, and the SP5 research coordinator and field officer.

Summary of methods

The methodology described in the proceeding section outlines the methodology from the original research project plan developed in April 2002.

Component 1: Site verification

This involved site verification and preliminary field research under the direction of traditional owners. In meetings held during the scoping phase of the project and the first half of 2002 at Halls Creek, Warmun and Bow River, traditional owners identified where they would like to conduct field research. Twelve areas were identified. With some groups, specific field research sites were identified and with others site visits needed to take place to determine the areas. Most sites identified have significant cultural, social and economic value. Areas identified include Bedford Downs (start of the Ord River), Bow River Station, Norton Bore, Osmond Valley (Osmond junction), No name (Lisadell) station (junction of Bow and Ord), Turner River, Springvale Station, Moola Bulla, Sturt Creek, Marella Gorge, Alice Downs, Mabel Downs, Texas Downs, and Lamboo and other areas around Halls Creek including Palm Spring, Elvire River, Banjo Bore, Caroline Pool and Ringer Soak.

An experienced ethnobiologist (Glenn Wightman, see below), was recruited for the project.

Access to non-Aboriginal-owned stations was pursued. Permission was sought from the owners of pastoral stations by writing a letter signed by traditional owners directly to the manager. Access was granted to these stations to carry out field research for this project.

Component 2: Field research

Field research took place at each site from June 2002 until November 2002. The trips began again in March 2003 and continued through to June 2003. Trips were also made to sites not originally planned and this occurred due to availability of relevant traditional owners and other community commitments and also as data were collated and reviewed.

There were a couple of trips where either the linguist or biologist was not available due to other commitments. For field trips when the biologist was not available, the research coordinator collected plant specimens and made field notes.

Research work included audio, written and photographic recording of language names of plants and animals. It also included:

- GPS recordings of bush tucker
- recording of seasons
- recording of seasonal indicators and variation,
- identification of bush tucker that is no longer available
- recording environmental and land-use change.

Herbarium specimens collected by the ethnobiologist and have been given to the Northern Territory Herbarium.

After each field trip, the linguist transcribed tapes. There was approximately one week follow-up time required for each week in the field. The ethnobiologist was responsible for establishing and maintaining a database of animal and plant species. This work is linked to the work carried out by Owen Price at NT Parks and Wildlife on the biodiversity audit for the OBP Rangelands sub-program.

Component 3: Data access and management requirements

This involved documentation, collation and confirmation of data. The writing up of this work was carried out throughout the year, with the bulk undertaken in December 2002–March 2003. Further clarification or confirmation was undertaken with Aboriginal people in the period March 2003–June 2003. Some field days were spent checking names and uses. This is an ongoing process. The ethnobiologist has identified further work to complete the checking of names for both Kija and Jaru languages.

Access to the database and cultural information is determined by each traditional owner group. A copy is held by both KLRC and the KLC. It is intended that data will be transferred to the GIS system and maps will be produced that incorporate this information through the GIS project.

Component 4: Production of information tools

As determined by each group at the beginning of this research project, information has been recorded through a variety of methods. Audiotape, video recording, photo documentation and written documentation have been used. As part of the communications strategy, posters have been produced and photos have been given out to project participants by the KLC. If additional funding is acquired, it would be desirable to produce the following:

- CD-ROM
- video.

Field research planning

Field research dates were negotiated at the beginning of the project, with KLRC, the linguist (Joe Blythe), and the ethnobiologist. Field research planning was carried out by the SP5 research coordinator and field officer in conjunction with the KLRC coordinator, Mr Edgar Price. Logistical planning was also needed, including providing equipment to assist the research including vehicles, GPS, satellite phone, and still and video cameras.

Each field trip required pre-planning: confirming numbers of traditional owners and availability, and timing in accord with other social and cultural obligations. Most trips involved a linguist, biologist, research coordinator, assistant coordinator, language workers, and a KLRC executive, bringing the total to an average group of 10–15 people.

Outcomes and achievements

The project has been jointly managed by both the KLC and the KLRC. The KLC contracted Glenn Wightman as the ethnobiologist and the KLRC contracted Joe Blythe as the linguist.

Glenn Wightman is an experienced ethnobiologist and has worked on ethnobiology projects in Australia in the northern Kimberley area and also with Aboriginal people from the Daly River area, Gurig National Park, Flora River and south-west Katherine region, Victoria River, Belyuen, Gurindji, Milingimbi, Tiwi and Jawoyn in the Northern Territory.

Respecting and sharing traditional knowledge

Joe Blythe worked for five years for the KLRC in Halls Creek and worked on the recently launched Kija phrasebook and audio package *Yuwurrinyangem Kijam*. Joe also worked on the *Jaru Language Survival Kit* and the advancement of the *Jaru Dictionary*.

Database of ethnobiological information on plants and animals

A primary objective of the project was to provide a database of ethnobiological information on plants and animals, contributing to an increase in baseline biophysical and socio-economic data to support improved NRM strategies. Glenn Wightman’s report met the primary objective of the project, by providing baseline biological information based on Aboriginal perspectives for the upper section of the Ord and adds enormously to the region’s biological inventory. The report provides a large amount of baseline biological information, as shown in Table 1.

Table 1. Basic statistics of Jaru and Kija traditional biological knowledge

Statistic	Jaru	Kija
Plant names and uses recorded	183	201
Animal names and uses recorded	219	222
Total taxa recorded	402	423
Audio files recorded	173	174
Images files recorded	202	263
Field days	31	41
Speakers involved	33	58
Total person field days	219	302

Source: Wightman (2003)



Joe Blythe (linguist) and Greg Mules (GIS advisor) at a meeting in Warmun to talk about the Plants and Animals database and collecting of data

A database has been developed with the assistance of Mr Greg Mules, GIS consultant, from the Data Management, Cultural Mapping and GIS project (KLC 4). This contains spatial information of plant species that were collected and listed in the Northern Territory Herbarium.

In addition to the material collected by both Glenn Wightman and Joe Blythe, the research coordinator collected approximately 350 images, recorded information relating to environmental change and documented Kija and Jaru people's aspirations about natural and cultural resource management, as documented in this report.

Recording of ecosystem trends

The recording of ecosystem trends includes seasonal variation of traditional and contemporary resource use and descriptors of seasons, to support improved natural resource management and planning. Glenn Wightman's report provides information for long-term ecosystem trends. This information will need to be integrated with data in the Kimberley Regional Integrated Database (KRID) which was developed under OBP Subprogram 1, Regional Resource Futures.

The potential for this information to provide greater understanding has not yet been fully explored. For example, information about emus, bandicoot and bilby has been recorded and it is strongly recommended that this should be further analysed in future research under the direction of traditional owners.

Some of the comments collected by the research coordinator on field trips are listed below.

Mona Ramsay: *There used to be more emus around (Lissadell/Lake Argyle). Not as many now. Used to be big mob – some still breeding up.*

Mona Ramsay and Chocolate Thomas: *This country all buggered up (Ord and Bow junction). Country buggered up now from lake. Used to be all red dirt and clear: Paperbark, bloodwood, konkerberry, Smoke Tree. Big mob.*

Mona Ramsay and Chocolate Thomas: *Magpie Geese are now common around Lake Argyle. Never used to be here. Gardiya bird. Only since lake here. Big mob here now.*



Glenn Wightman and kids at Ringer Soak looking at photos of the days work

Respecting and sharing traditional knowledge

Mona Ramsay and Chocolate Thomas: *Red leg. Jabiru. He come lately (Lake Argyle).*

Mona Ramsay and Chocolate Thomas: *River used to have sandy banks. Hunt this side and the other (talking about the Ord below Lake Argyle).*

Doris Fletcher: *There are too many trees on the country now, used to be mostly grass (Moola Bulla).*

Stan Brumby: *All that animal, bird has been taken to the zoo in Perth (Lambo).*

Glenn Wightman also comments on the priorities that Kija and Jaru people have for documenting their knowledge, and the relevance of this work for NRM (Wightman 2003, Ch. 3).

It should be noted that Kija and Jaru guides raised the current and future loss of traditional biological knowledge almost on a daily basis.

This concern was exemplified by the fact that almost all field discussions centred around the names, uses and stories associated with plants and animals. In fact it proved very difficult to maintain discussions and interest on subjects other than names, uses and stories about plants and animals.

This desire to record traditional biological knowledge has manifested in the sheer volume of material relating to plant and animal knowledge we have recorded in a relatively short period. The strength of desire of Kija and Jaru to record this knowledge, and the satisfaction gained from doing so, is difficult to exaggerate.

Kija and Jaru people consider the loss of traditional biological knowledge as a natural resource or indeed a land management issue. Many Aboriginal people throughout the Kimberley and the Top End of the Northern Territory hold this view of traditional knowledge in fact being a management issue.

In simple terms the loss of biological knowledge equates to poor natural resource or land management.

Western science has a similar understanding of names and other knowledge associated with plants and animals. An important management tool for western biological science is the correct application of scientific names to organisms; the establishment of state and national herbaria and museums and the employment of taxonomists by all Australian government agencies illustrates the importance of biological names.

Comments on ecosystem trends in Wightman's report are listed below:

- *Baiting dingoes by dropping poisoned baits from a plane is very dangerous; the baits could land in waterholes and poison the water so that you could get poisoned by drinking or swimming in the water. Also kids, camp dogs and animals can pick up the baits and get poisoned. (Shirley Drill, Phyllis Gallagher, 23 October 2002)*
- *Weeds need to be stopped especially along creek lines. Calotropis procera, rubber bush, is especially bad along roads and creeks. (Mary Thomas and Eileen Bray, 11 June 2002)*
- *There are too many meetings talking about things, and no one ever does anything, everyone sits around towns and communities talking but not*

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going out bush to look at country. At most meetings countrymen get treated like school kids and cannot understand what is being talked about. (Patrick Mung Mung, 30 November 2002)

- *The quoll, Dasyurus hallucatus, pawukuny or yinamuny used to be seen in the Bedford Downs area, it has not been seen in recent times. (Shirley Purdie, Peggy Patrick, Mary Thomas, Nora Badngarri, Phyllis Thomas, Queenie Malgil, 16 October 2002; Doris Fletcher, Lena Nyadbi, Goody Barrettt, 29 March 2003)*
- *The Golden Bandicoot, Isoodon auratus, Nyarkul used to occur in Kija country and some old people remember eating the tender and tasty flesh. It has not been seen in recent times. It is thought all the bandicoots have gone south to Jaru country. (Shirley Purdie, Peggy Patrick, Mary Thomas, Nora Badngarri, Phyllis Thomas, Queenie Malgil, 16 October 2002; Doris Fletcher, Lena Nyadbi, Goody Barrettt, 29 March 2003)*
- *Before country was fenced off into stations the grass used to get burnt to clean up country. When cattle came along the fires were stopped because they wanted all the grass for the cattle. Now we still can't burn because of the stations and the fences. Old people used to burn to make green grass come up, to signal each other and to make it easier to move around. (Bonnie Deegan, Barbara Sturt, Maggie Long, 2 October 2002)*
- *Bilby (Macrotis lagotis) Nyarlgu is still present on Jaru country in the southern desert areas, though numbers are reduced. However, the burrows are still seen quite often. (Barbara Sturt, Bonnie Deegan, Franky Sampi, Robert Raala, Tiger Jagamarra, Peter Jagamarra, Gordon Itbeari, Ruby Nganggiya, Bonnie Seela, 3 April 2003).*
- *Golden Bandicoots (Isoodon auratus), Lilgurn or Junguny used to be all around Jaru country but now there are none. In the past they were often seen around stock camps looking for food where they sometimes became quiet, and were also flushed out by cattle moving through grassy areas. (Barbara Sturt, Bonnie Deegan, Franky Sampi, Robert Raala, Tiger Jagamarra, Peter Jagamarra, Gordon Itbeari, Ruby Nganggiya, Bonnie Seela, 3 April 2003)*

Wightman (2003, p. 8) also comments on the distribution and abundance of mammals in central Australia and findings of the research with Jaru people:

Burbidge et al. (1988) recorded Aboriginal views on changes in distribution and abundance of mammals in central Australia, including southern Jaru areas. This paper reported significant declines in populations and reductions in distributions for a number of mammal species; these trends were corroborated by our research. These reductions of range and possible local extinctions are of very serious concern to traditional owners.

Seasons

There is a descriptor of seasons for both Jaru and Kija languages and the information provided in Glenn Wightman's full report details when food and plant sources are available. This section on both Kija and Jaru Seasons is copied below.

Kija seasons (Wightman 2003, Chapter 4)

There are five major Kija seasons in each year, though within these seasons other weather patterns are also recognised. These seasons are quite variable in length and onset, and the Gregorian calendar months are offered only as a guide. The major seasons are outlined below with the main plant and animal food resources available during each season.

Yuwinji: December to mid March.

This is the wet season, it is the time of water, with heavy rain and lightning and thunder. The rivers are flowing fast and there are often floods with roads cut and it is difficult to move around. This season can also be called **kurlun**.

The first rains are called **mukurruny** or **murlkuny**, and they make the grass seeds sprout and the other annual plant seeds shoot.

The last rains of the wet season are called **kuluwanginy**, and are referred to as the ‘knock em down rains’. They cause the tall grasses to fall over and the ‘lightning splits the seeds from the grasses’ and they fall to the ground ready for the next wet season rains.

The main plant foods available are:

- minyjiwarrany**, the black plum (*Vitex glabrata*),
- piriyalji**, the conkerberry (*Carissa lanceolata*),
- taaluny**, the green plum (*Buchanania obovata*),
- parnariny**, the small bush potato (*Brachystelma glabriflorum*),
- yimarlji**, the sandpaper fig (*Ficus opposita*),
- kuwarrulji**, the white currant (*Flueggea virosa*),
- pinyjipinyjil** (*Erythroxylum ellipticum*), and
- kirliny**, the wild gooseberry, (*Solanum echinatum*).

Many of the bush fruits from trees near the river get washed away with the high water levels; fruit from trees in the bush away from rivers and creeks can be collected and eaten.

The main animal foods available are:

- pinkany**, the sugarleaf,
- kurrtarril**, any type of fish, but especially **talinyji**, the catfish,
- kilpany**, the rough-tailed goanna,
- jarrampayiny**, the sand goanna,
- lumukul**, the blanket lizard,
- nanganangalal**, sand frogs,
- ngamarrany**, any type of snake,
- laarnngarnany**, the big green frog is very noisy at this time of year.

Lintharrk: mid March to mid May.

This is the wet and green grass time, when the thunder storms stop and it begins to get cooler, though it can still be quite hot due to the green grass everywhere. Rivers and creeks begin to slow up and the green hair-like plant **marlingin** is common in the water.

The most common plant foods are:

- japayiny**, the river fig (*Ficus coronulata*),
- piriyalji**, the conkerberry (*Carissa lanceolata*),
- jumuluny**, the boab tree fruit (*Adansonia gregorii*),

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karrjany, the waterlily (*Nymphaea violacea*),
yamuny, the small water yam (*Triglochin dubium*), and
nagwunji, the pencil yam (*Vigna lanceolata* var. *latifolia*).

Common animal foods at this time of year are:

jaliikel, the freshwater crayfish,
pinkirrpal, the bush turkey,
lalangkarrany, the freshwater crocodile, the meat can be eaten, and the eggs have also been laid in the sand nests and can be dug up and eaten,
jarlangarnany, the big red kangaroo,
kernanjil, the porcupine (echidna), and
jamantil, white-ant larvae.

Warnkany: mid May to end of July.

This is the time of cold weather; nighttime temperatures can get down to zero, though the days are warm and pleasant. There is still some water in the rivers and billabongs though water is becoming less common as the season progresses.

Common plant foods are;

jurntany, bush onions (*Cyperus bulbosus*),
yalarri, the bush potato (*Ipomoea costata*),
yampany, the yam (*Ipomoea* sp.),
karntiny, the black soil yam (*Ipomoea aquatica*),
kulipil, the bush banana (*Marsdenia viridiflora*),
yangajalil, the palm tree cabbage (*Livistona victoriae*)
kunjil, yellow kapok (*Cochlospermum fraseri*) yams and
jumuluny, boob nuts, *Adansonia gregorii*.

Animal foods for this time of year are:

jampinparuny, black bream that are fat and tasty,
wiyarril, the emu has eggs,
jarrampayiny, the sand goanna,
jaliikel, freshwater crayfish and
tarntal, turtle
kangaroos are fat and good to hunt at this time of year, and emus have babies in the last of the cold weather
ngamarrany, snakes are very poisonous during this season.

Parnten: August and September.

This is the time of going from cool weather to hot weather. The ground begins to heat up and waterholes dry up. Many trees drop their leaves. It is the time of least bush foods and water resources are also becoming scarce.

Plant foods are:

ngawunji, the pencil yams (*Vigna lanceolata*),
jurnta, the bush onions (*Cyperus bulbosus*), and
kelewurrji, the waterlily seeds and roots (*Nymphaea violacea*).

Animal foods are

kanyarrany, goannas,
winini-pal, emu with chicks,

ngarrkalangarnany, small hill kangaroo and
lakarnel, witchetty grubs.

Werrkalen: October and November.

This is the time of very hot weather and the ground can be too hot to walk on. Waterholes are dry and there is very little water around. Sometimes there are small, patchy storms around, but not like the full wet season.

When the flowers on **jumuluny**, the boab tree dry out and fall off, it indicates that rain will fall down soon. **Teriitteriit**, the white-lined honeyeater can be heard whistling to make **taaluny**, the green plum fat.

The Kija name means green and probably refers to the conspicuous pre-wet season flush of new leaves on many of the trees and shrubs.

The main plant foods are

jumuluny, boab nuts (*Adansonia gregorii*),
nganyjarli, the bush tomato (*Solanum chippendalei*),
perangkarrji, the white currant (*Flueggea virosa*),
piriyalji, the conkerberry (*Carrisa lanceolata*),
taaluny, the green plum (*Buchanania obovata*),
minyjiwarrany, the black plum (*Vitex glabrata*) and
parnariny, the small bush potato (*Brachystelma glabriflorum*).

The major animal foods are:

pinkirrpal, the bush turkey,
talinyji, catfish are fat and good to eat,
ngarem, sugarbag is full of strong tasty strong honey,
pinkany, sugarleaf, and
kernanjil, porcupine.

In the past it was more common to get cold weather rains, that is late rains during the colder temperatures of the mid dry season, from about April to June. This has not happened in recent times. These cold wet periods were very uncomfortable but had the effect of keeping country moist for much longer into the dry season.

Jaru Seasons (Wightman 2003, Chapter 5)

Jaru people divide the annual cycle of weather patterns into five major seasons. The timing of these seasons can vary a lot from year to year as the onset and duration of seasons can be significantly different each year. We have provided a guide to the approximate timing of these seasons in relation to the Gregorian calendar months, but it must be recognised that this is only a guide.

It should also be noted that the seasons outlined here are only the major annual seasons, within these seasons there are other weather patterns and climatic events recognised by Jaru people.

Malirri this is the time of cold weather, when the temperature gets very low at night. Day time temperatures are also lower and the air is very dry. Approximately May to July.

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This is time for lighting grass fires to clean up country and promote fresh growth of grasses and other plants. The period after grass fires is called **nunjarl**, and it is the best time to hunt for goannas, **jarrambayi**, as they are fat and slow to move.

It is also a good time to hunt for blue-tongue lizards, **luma**, kangaroos, **jaji** and porcupines, **girnanyji** as they are fat and tasty at this time of year. Bush turkeys, **jandura**, are also fat and tasty at this time of year, and it is the best time to hunt for them.

This is also the best time to hunt for yams as they are large and moist at this time. The yams from the desert bush potato, **buwura** or **bigurda**, can be dug up as they are now full sized, and have often caused the ground to crack above where they are growing. The small yams of the bush onion, **jurnda**, are also dug up and eaten at this time of year. This is also the best time of year to collect gum, **mardiwa**, from various trees, that can be eaten.

Barrangga this is the build-up time, when temperatures get higher and the humidity builds up and it begins to feel sticky. The Jaru term literally means the time of the sun, and the creeks and rivers have dried up and only big waterholes and springs contain water. Approximately August to November.

The small black fruits of conkerberry, **burnungarna**, are ripe and ready to be collected. The fruit of the bush orange, **jugurru** and the smaller variety of bush orange, **yumali** can be collected and eaten. Bush passionfruit, **yidiringgi**, also has ripe fruits that are very sweet and tasty. The black plum, **giyindi**, is forming fruit, and in areas north of Jaru country the green plum will be fruiting.

The Blue-tongue Lizard, **luma**, can be caught, cooked and eaten at this time as they are often seen moving to find a cooler place to rest. Emus, **wanyayaru**, are good to eat at this time of year and porcupines, **girnanyji**, are also good to eat.

Ngababura the wet season, it is the time of monsoonal weather, with rainstorms, thunder and lightning, rivers and creeks are flowing strongly and often flood. The grasses get green and grow tall and yams put up shoots and begin to fatten up. Approximately December to March.

The sweet black fruit of the black plum, **giyindi** get ripe and are collected and eaten. In the past these fruit were sun dried and stored for later use. The conkerberry, **burnungarna**, the bush cucumber, **ngawuraga**, and the white currant, **runggu** produce all produce their tasty fruit.

Large sand goannas, **jarrambayi** are hunted at this time of year as they are full of fat at this time of year. Grasshoppers, **bilbilji** are common towards the end of **ngababu**. This is the best time of year to catch fish, **yawu** or **yagu** as they are all full grown and fat, and there is a lot of food in the creeks and rivers for the fish to eat.

Wurrgal this is the time of green grass after the rain has stopped, but before the ground dries out and the rivers and creeks stop flowing.

Approximately the month of April.

Respecting and sharing traditional knowledge

Grasshoppers, **bilbilji** are very common at this time of year and often can be seen in large groups eating the grass and shrubs. Bush turkeys, **jandura** and emus, **wanyayaru**, are seen chasing and eating the grasshoppers. Prawns, **jali**, and fish, **yawu**, are good to catch as the waters slow and then begin to dry out. Sugarbag, **ngarlu**, is full of honey at this time of year, though they can be harvested at any time.



Checking animal names with zoologists, Argyle Diamond Mine Fauna Survey.



Kija participants at the Argyle Diamond Mine Fauna Survey in November 2002. Photo by Glenn Wightman.

Key land-management issues for consideration in future planning for sustainable regional natural resource management

How do we as Aboriginal people manage country when most of our country is on a cattle station owned by gardiyas. This is very hard for us mob and not hard for other mob as they own some of these stations. A lot of our old people are gone and it's hard to get a win when it's like this.

Men and women should be Aboriginal Rangers looking after their country.
(Stan Brumby, 2003)

Land-use issues have been identified by the research coordinator on field trips with both Kija and Jaru traditional owners. They include the following:

- tenure resolution and progress of native title claims
- joint management of conservation reserves, Purnululu National Park and the Ord regeneration area
- government making decisions about country without talking to traditional owners
- concern about protection and maintenance of cultural heritage, including rock-art sites, on both non-Aboriginal-owned stations and Aboriginal-owned land
- concern about unregulated and unmanaged tourism use and impacts on cultural heritage
- development of tourism ventures owned and operated by Kija people from Warmun, Violet Valley and Frog Hollow
- transgenerational information flow and recording knowledge for future generations
- access to pastoral stations owned by non-Aboriginal people
- importance of bush tucker and ability to be able to access bush tucker areas/wanting to grow bush tucker or wild harvesting
- concern about mining exploration, mining operations and environmental damage to country
- concern about water quality in Halls Creek in particular at Caroline Pool
- developing further educational programs with children, taking them to country to teach them about Jaru culture
- development of ranger programs in Halls Creek area, including Lamboo station

Respecting and sharing traditional knowledge

- assistance with pastoral property management including resources for graders, fencing, yards
- assistance with pastoral station management, including diversification and development of multiple land-use strategies
- employment and training initiatives on country, including development of Aboriginal community ranger programs at Warmun.

Many of the issues raised are outside the scope of this project and are the main responsibilities of Australian and State Government agencies. The SP5 steering committee is instrumental in bringing these issues to the attention of government agencies so that together we can work on addressing them.

Key comments recorded by the research coordinator in ethnobiological field trips and at steering committee meetings included the following.

Shirley Purdie: *Fish tastes different about/below Argyle (tastes good at Crocodile hole). Fish seems tough.*

S. Bray: *The creek runs into main river from the mine. During the big wet all water is together. I am on this committee OBP, cleaning country, and checking plants and animals. Feels we need people on ground to be doing this. People must get in and help. Don't expect white people from government, must be protected by traditional owners as well. River must be protected by us people. There are also fish kills at the end of river (Bow River junction).*

Peggy Patrick: *I am from Crocodile Hole community. We go fishing there – all sorts of fish, and lots of them. Tourists kill and leave catfish, so can't drink/use the water. Must stop tourists, this is the community home. Must stop muddy water from ruining country. Didn't used to happen.... If people leave dead fish, make water go sour. We don't leave fish behind.*

S. Bray: *All the stations are so important; they are our land. We need the money for them.... have their gates locked on ample food country.*

Mona Ramsay: *What they bait for? Why they want to kill that dingo. He got dreaming for us that one.*

Information products about Aboriginal land management

At meetings in Warmun and Halls Creek during the scoping phase of the project, traditional owners said they would like to see information disseminated into the wider community that communicates their relationship to country and how important land and rivers are to them. Many of the traditional owners involved in the projects are accomplished artists and are involved with various other activities in the local community. For example, senior language specialists are involved with teaching language at both the Ngalangangpum school in Warmun and also at the Halls Creek District High School.

Some Kija participants have been involved in cross-cultural activities with the Argyle Diamond Mine and are accomplished dancers, singers and storytellers as part of the Neminuwalrin (Fire Fire Burning Bright Stage Production).

Kija people have published books including *From digging sticks to writing sticks stories of Kija women* (Catholic Education Office), *Ngalangangpum Jarrakpu Purrurn mother and child the women of Warmun* (Magabala Books), *Yuwurriyngem Kijam a phrasebook of the Kija language* (KLRC).

Jaru participants have not been involved in as many activities to date and hence it was a driving force in the KLRC to get funding for this project and to produce a book for Jaru people in Halls Creek. Bonnie Deegan, former Chair of the KLRC, said this:

Plant names and uses need to be written down and put into a book so that they will be there in the future. When young Jaru people get older they will want to know the names and uses of the plants, if all the old people are gone they will be able to get it from the book.

During the scoping phase of the project and during the field research, publications developed by Aboriginal people from other places in Australia were shown to people to get ideas about what people wanted to do here. Publications such as videos produced by Tangentyere Council, Kowanyama Land Office posters and other Northern Territory and Cape York communities stimulated people to decide what they would like to produce.

Glenn Wightman also showed books that he had co-authored from his work in the Northern Territory, including that recently produced by Tiwi Island.

It was agreed that posters would be a good short-term production outcome and with the ease of using digital cameras this would not be difficult. Posters were developed and produced by the research coordinator in conjunction with traditional owners. Poster workshops with Jaru people took place in Halls Creek at the (KLRC). Individual meetings were held with Kija people from Warmun and surrounding communities and outstations to design posters. The posters are a record of field work. Project participants would also like to see posters developed for use as educational resources with younger people and possibly to sell at tourist venues.

Some of the posters developed need further work as requested by traditional owners. For example, both Kija and Jaru participants identified that they would like posters to be used as educational resources in local schools and would like them to be written in relevant languages.

Field trip reports for project participants have been developed. These are plain English and photo documentation of field trips.

Kija and Jaru participants have recommended that funding be secured to further develop information materials. People would like to sell these materials and raise revenue to undertake similar work 'on country'.

Meetings were held with both Kija and Jaru participants in Warmun and Halls Creek in 2003 to discuss the results of the this project and what sort of information products project participants would like to see made.

Warmun meeting with Kija participants

On 21 August 2003, a meeting was held in Warmun by the KLC and KLRC to discuss Glenn Wightman's final report and photos taken by the research coordinator. Information products were also discussed and the following products were highlighted as having high priority:

- posters
- a book to sell in the community
- a video to sell in the community
- a CD-ROM for use in schools
- postcards.

Kija people stated that work should be completed for checking of final documents as listed in Chapter 6 of Glenn Wightman's report (Wightman 2003). This would be approximately 70 days work.

Respecting and sharing traditional knowledge

Project participants asked that LWA help with identifying further funds. Other organisations to approach for funding were also suggested, including the Argyle Diamond Mine, Rio Tinto, the Salay Malay mine, the Department of Education and ATSIIS.



Winnie Budbarria, Gordon Barney, Peggy Patrick, Marshall Drill and Ben Duncan at the Warnum meeting in August 2003



Phyllis Gallagher, Goody Barrett, Pearl Gordon, Shirley Purdie looked at photos during the Warnum meeting in August 2003.



Mary Thomas, Betty Carrington, Patrick Mung Mung at the Warnum meeting



Mavis Wallaby, Siobhan Casson, Michele Martin at the Warnum meeting

Halls Creek meeting with Jaru participants

Meetings were held in Halls Creek on 22–23 October 2003 with KLC, KLRC and Jaru participants, to discuss Glenn Wightman’s report, the photos and Janelle White’s report. From the Halls Creek meeting the following product priorities were agreed to:

- posters using language names
- a book with matching audio cassette
- a calendar
- a road map with bush tucker.

Jaru people also stated that work should be completed to check the final documents as listed in Chapter 6 of Glenn Wightman’s report (August 2003). This is particularly important for Jaru as there are two distinct dialects.

Jaru poster workshops

At the poster workshops we sat down with all the photos taken on all the Jaru field trips. People picked out photos they liked and we talked about what they would like on the posters. Kylie brought down her computer and printer from Kununurra and, using the data projector at the KLRC, we worked together putting the posters together.

Identification of place names for use in the development of interpretive materials

An enormous number of place names have been identified in the project's database. This database, prepared by linguist Joe Blythe, was provided to the KLC in December 2003 and there has not been time to incorporate this information into interpretive materials produced within the framework of the OBP. This work will be carried on by the KLRC and in the post-OBP project.



May Butcher, Doris Ryder, Kylie Pursche, Bonnie Deegan, Stan Brumby at the poster workshop in 2003

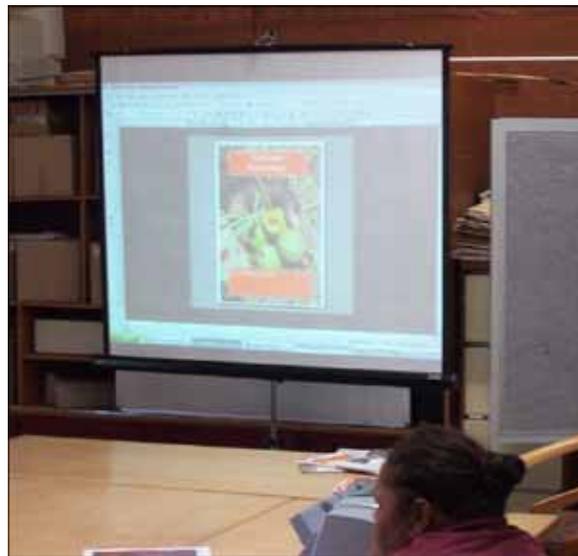


Computers and printers used in putting together the posters

Incorporation of Aboriginal knowledge into regional natural resource management and planning

This was a long-term goal of the project that will not be fully realised due to the demise of the OBP. The ethnobiological material collected provides baseline biological information, and further analysis of this material with information on the Kimberley Regional Integrated Database will provide valuable information for natural resource managers. Personnel at the WA departments of Agriculture, and Conservation and Land Management, have expressed strong interest in the material.

The incorporation of these data must work through the appropriate protocols and is at the discretion of the traditional owners involved. Indigenous intellectual and cultural property rights must be protected; restrictions on access to data will be considered with advice from the KLC and KLRC.



The posters were put together by everybody and we used the large screen so that everybody could see it being put together and make any changes if they didn't like the colours, photos or words.



Bonnie Deegan and Stan Brumby looking at some of the posters already put together.

Respecting and sharing traditional knowledge

The ethnobiological field work identified key species for both Kija and Jaru people, and further collaborative research could be developed with other research institutions. This may include the Key Centre for Tropical Wildlife Research in the Northern Territory and the CRC for Tropical Savannas Management.

Feeling good about being on country

People enjoyed the field research immensely and this can be demonstrated by the commitment and willingness of participants. More than 90 traditional owners were involved in the field research. When the project began, there were issues about access to particular pastoral stations in the region. However, this project gained support from the stations and access was granted. In some instances, this was the first time that people had visited country in a long time.

Elders were happy to be on country. The main project participants are committed and determined that their traditional knowledge is recorded for future generations. Older people acknowledge that this information is rapidly being lost and that young people are not always interested. For these reasons, they are determined that traditional ecological knowledge should be recorded in a way that it can be used in schools and also to educate non-Aboriginal people about Aboriginal peoples' traditional and contemporary knowledge about country.

As Wightman (2003) states in the introduction of his report:

The overpowering desire of the Kija and Jaru people involved in the project to record traditional plant and animal knowledge was the key factor in the success of the project, and the determining factor in the content of this report.

Working towards partnerships

The project has enhanced the involvement of Kija and Jaru people and their aspirations in local R&D, facilitating the equitable participation of a broader range of stakeholders in regional NRM. When research commenced there was minimal involvement of Aboriginal people in research and development in NRM in the East Kimberley. This situation has been turned around, and positive experiences have enthused people to continue this work into the future.



Recording at Osmond Valley – Joe Blythe, Phyllis Gallagher, Churchill Cann, Glenn Wightman, Shirley Drill and Bruce Wungundin, October 2002

Aboriginal Management and Planning for Country



Jack Lannigan, Stan Brumby, Bonnie Deegan, Joe Blythe and Glenn Wightman at Lamboo Station, 2003



Rosemary Carey with Biwura at Lamboo Station, 2003



Bonnie Deegan with Jilili at Lamboo Station, 2003

Respecting and sharing traditional knowledge



Lena Nyadbi and Mona Ramsay at Greenvale, 2003



Mabel Juli and Joe Blythe at Springvale Station, 2002



*Shirley Purdie with Sugarbag,
June 2002*

Data management, cultural mapping and GIS with Kija and Jaru people

Project objectives

- To create a database using information from the ethnobiology research and other spatial information relevant to cultural mapping.
- To collect individual, group and regional map biographies and collate into a series of composite maps for presentation, education, management and regional planning.
- To establish and develop the use of the innovative software program CyberTracker to incorporate Aboriginal knowledge into a GIS system using Palm computers linked to a GPS.
- To establish a community-based geographic information system in Warmun Community in collaboration with Aboriginal people from Halls Creek and Warmun community, and surrounding stations including Violet Valley, Bow River and Norton Bore, Chinamans Garden.
- To provide skills-based capacity-building and training for Aboriginal people in the use of GPS and GIS in the upper Ord catchment

Background

Consultations with people from Warmun, Bow River Station, Violet Valley Reserve, Halls Creek and Kununurra during the scoping phase of the project, identified a strong desire for greater access to information already collected by government agencies, universities and research organisations on soils, fauna, flora studies and groundwater. There is also a lot of information that has been collected by anthropologists, linguists and other researchers and a common complaint from traditional owners is 'I have already told them that before. Why do I have to tell them again!'



Ground mapping using boab nut and rocks, Violet Valley, June 2003

Respecting and sharing traditional knowledge

The scoping study (Johnson et al. 1999, p. 129) states that the way to improve the effectiveness of participation

...is to directly involve as many people as is possible in the data collection and monitoring needed to inform the group's involvement in negotiation. This not only assists the strength of the plan making process in an education sense, but also continues to develop group ownership and commitment to the negotiation process.

This project relates directly to the theme of Using Country. The project is based upon information collected from the Plants and Animals of Kija and Jaru country project, to be used as data for a community-based geographic information system (GIS). These data will be used in developing maps for use by the local and regional community, and for local community members to be trained in the purpose, use and function of a global positioning system (GPS) and GIS and their relevance for the future management of natural resources.

The capacity to use and develop the CyberTracker interactive software on a Palm computer was an opportunity for the OBP to be a leader in utilising this world-class technology in Australia. This software was developed by Louis Liebenber who sought to provide South African Bushmen with a tool that could readily incorporate their knowledge through an interactive interface. The interface allows people to select icons that depict animals and their behaviour patterns. Liebenberg says that 'the software can be customised for any environment and can be used in farming and any environment where huge amounts of data need to be collected and analysed' (website). The predominance of Aboriginal oral tradition and the reality that many old people cannot read English means this type of interactive tool may be suitable for use in the East Kimberley.

Due to the spatial nature of traditional cultural and ecological knowledge, GIS technology can facilitate the inclusion of traditional ecological knowledge within integrated NRM. The collection of local biological information ensures that the system is developed from the bottom up with strong community involvement and participation.

Aboriginal people or organisations such as the KLC do not have access to data already collected and held by government agencies such as CSIRO, CALM, the Department of Agriculture, WRC and universities and research organisations.

Relevance to OBP

This project had particular relevance to Subprogram 1, Regional Resource Futures and the proposed development of a regional information centre.

It related directly to the following issues identified in the R&D plan:

- resource inventory – by improving upon baseline information on a local and sub-regional level
- social, cultural and economic data/understanding – by providing detailed information on traditional and contemporary resource use; by collating data related to cultural heritage and knowledge
- integration – both scientific knowledge and Aboriginal knowledge can work together to provide a greater level of understanding of the upper Ord catchment biophysical and socio-cultural make up

- participation – this research involves full participation of Aboriginal people from the upper Ord catchment and is an innovative way to incorporate oral tradition and Western scientific knowledge to produce management and planning tools for the future
- capacity – this work will increase the capacity of Aboriginal people to understand the purpose and use of culturally appropriate ‘research’, develop skills with new land management technologies; plan, manage and have direct input into the regions natural and cultural resources.

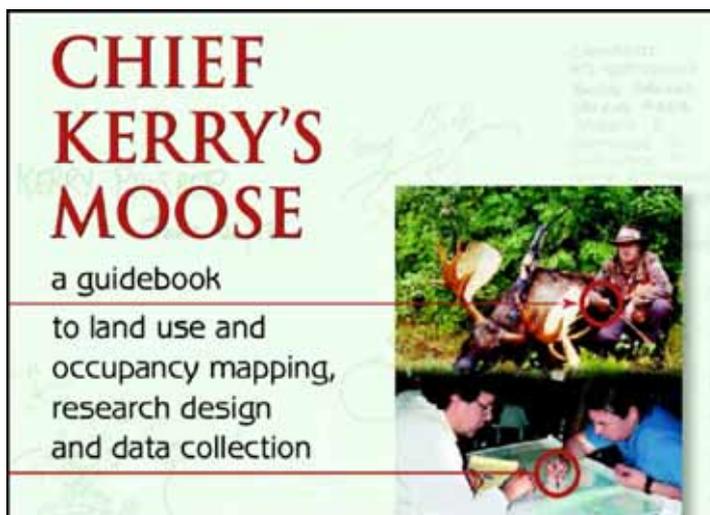
Skills needed

- Information management system/GIS technical advisor
- Researcher/data input/entry person
- GIS technician
- Traditional knowledge of Aboriginal people
- Linguistic skills from KLRC and Warmun community
- KLRC archivist
- Organisational capacity of KLC
- KLC’s demonstrated track record in undertaking ethnobiological research and in-house expertise in oral history collection
- Anthropologist/researcher

Summary of methods

The methodology employed in relation to the proposed intensive cultural mapping field research was based upon methodology employed by Tobias (2000). It is also the methodical research steps employed in this project that have driven the development of the database such that it can be utilised by multiple users and for many purposes. Using this as a background, it is obvious that a database that will be linked to a GIS must be developed comprehensively and with foresight.

Too often databases are built and developed without any thought about who and what they are really for. How can it be used in a community setting? How can the system be supported and maintained in the years to come? A detailed strategic planning framework laying out the steps involved in getting to the endpoint was vital for the project’s success.



Front cover of Chief Kerry's Moose guidebook

Component 1: Strategic planning framework

A strategic plan for this project was developed and reviewed with the assistance of the information management system and GIS advisor, Mr Greg Mules. The strategic plan is a document and information system for access, monitoring, compliance and actioning. It sets out elements of the IMS/GIS strategic planning framework, including conceptual planning, data planning, technology planning and organisational planning.

The strategic planning elements of the project are:

- multi-disciplined (biology, language, landscape, soils, vegetation, land use, GIS technology)
- multi-participant (OBP, KLC, CSIRO, KLRC, consultants, government departments, community)
- community-based vision with commercial components
- temporary and permanent institutional-strengthening components.

Component 2: Implementation of the tasks of the strategic planning document

This component included the following:

- collation of needs analysis to a project management document or system
- system design – processes technology and data requirements for the project
- design specification completion – technical specification for database and GIS structure development before data capture, management and analysis
- recruitment of data entry/input person
- data capture and conversion – sourcing existing, managing new and converting old data to meet the needs of the project
- hardware and software procurement and installation – in order to meet the design specifications. A computer, software and printer will need to be acquired and established in a secure location. Due to the sensitive nature of some information it is preferable that an Aboriginal organisation house the system so that access can be managed and monitored by Aboriginal people themselves
- identification of community-based trainees to fill the positions of cultural information officers.

Component 3: Intensive field research and map production

This project was not funded to carry out this work and it is anticipated that this field work will take place in the post-OBP project 'Integrated natural and cultural resource management options for pastoral land in the east Kimberley' commencing in 2004. Maps will not be produced until this field research is complete.

Further field research is required to collect detailed information relating to Indigenous resource use. This is detailed in the "Cultural knowledge information management system" document (Mules 2003). The field work will take place in Warmun and surrounding country with traditional owners to document individual and group biographies relating to traditional ecological knowledge. It is anticipated that this work will take at least 2–3 months with, at minimum, one full-time dedicated researcher and assistant.

This component aims to collect individual, group and regional map biographies and collate into a series of composite maps for presentation, education, management and regional planning. Before the maps can be made available for public use, information must be cross-checked and verified for quality and completeness. Large paper maps will be displayed for people in the community to cross-check and examine over a period of weeks.

Component 4: Data entry/input and training

Ethnobiological data collected from the Plants and Animals project formed the basis for this project. This information is designed to be collated with other data held at the KLC, Warmun community and Halls Creek, and with other research institutions and consultants. As described in the preceding section on the Plants and Animals project, a single database was not developed as originally planned, and this work will continue in the post-OBP project. With the approval of Kija and Jaru people, baseline cultural information already provided to KLRC or KLC will be entered into the system.

Personnel were sought for the data-entry position to undertake data entry and collation of existing research. Unfortunately, there was a lack of local capacity and a decision was made by the OBP to delay this recruitment until the outcomes of the mid-term review of the program were clear.

With the employment of a suitably qualified person it is proposed that two people from local communities will be trained to use the database, GPS and GIS. It is envisaged that these people will become cultural information officers (CIOs). Similar to component 3, this work will now take place in the post-OBP project.

Component 5: Digitising data and entry of descriptive data into a database (spatial and attribute data)

Spatial data collected from the Plants and Animals project, including GPS coordinates of plant specimens, together with the written maps collated in the intensive field work stage (component 3), will be digitised for input to the computer along with descriptive data collated. This will include oral history information on environmental change and ecosystem trends.

Appropriate icons and symbols for use on Palm computers and maps will be developed with Kija people.

Raw data will be copied, and original information will be kept in a separate and secure location, within both the KLC and KLRC archives. Most of this information is culturally sensitive and therefore use and access to the database will be by adherence to strict protocols and guidelines developed with the community.

Component 6: Establish a community-based GIS in Warmun

A GIS system has not yet been established in Warmun. This is a long-term goal of the project and will be worked towards after the establishment of the CIOs, and intensive field research and data entry has been completed. The goal is to train community members in GIS application, data collection and input, GPS and relevance to Aboriginal planning and management aspirations. This work will continue in the post-OBP project.

There are a number of factors to consider in the establishment of a community-based system, including securing ongoing funding for its administration and maintenance. There is also the matter of housing of the system in the community and linking it with key community organisations including the Warmun Community Council, Warmun Art Centre and school. There are discussions within the community about the development of a cultural and natural resource centre.

Component 7: Violet Valley case study

Violet Valley is a reserve of 960,000 hectares to the south-west of Warmun, approximately 2.5 hours south of Kununurra. In meetings with the research coordinator the manager, Bruce Thomas,

Respecting and sharing traditional knowledge

identified a need for research to be completed on soil types and pastures for cattle and horses. It is currently running only a small herd of cattle and the operators want to develop the station further through an staged process. This research could form the basis of a property management plan if the first stage of research is successful. Violet Valley would also like research conducted on alternative economic opportunities, such as horticultural crops that would be suitable for the station, and on feral animal control and identification of weeds.

This case study was to be completed under Subprogram 1 Regional Resource Futures, in conjunction with the *Aboriginal Management and Planning for Country* subprogram. Technical expertise was to be provided by Andrew Taplin (Department of Environment), Kenton Lawson (ABARE), Jaki Richardson (OBP), AgWA and other experts where necessary.

Collection of baseline data including water monitoring (macroinvertebrates) and flora and fauna studies will be undertaken on Violet Valley. This research will form the basis of a property management plan for years following the research program if the first stage of research is successful.

Outcomes and achievements

Strategic planning

Greg Mules, GIS technician and advisor, has produced a document entitled 'Cultural knowledge database and GIS implementation plan and guidelines' that discusses in detail the intentions, aims and goals of the Cultural Knowledge Information Management System (CKIMS). This plan is a result of discussions with the research coordinator, community members from Warmun, discussions with the OBP GIS technician Ms Jaki Richardson. It builds on the 'Steps in IMS/GIS Development' developed by Greg Mules in December 2002. As Mules (2003, p. 4) points out in the CKIMS:

A Strategic Planning Report for technical implementation of an integrated information management system (IMS) was developed late in 2002. That report outlined the framework for planning and implementing an IMS to provide cultural data for the OBP. It set out three basic steps to ensure full and effective development of the program. These steps were:

- *Strategic Planning*
- *Implementation Planning and*
- *Implementation*

As outlined in the 'Steps in IMS/GIS Development' document the following steps must be part of any needs analysis for the development of a cultural mapping database:

- needs analysis
- review already determined needs by structured interview with the research
- co-ordinator
- identify needs not already identified – interview other stakeholders
- community meeting to clarify expectations and intentions
- collate the needs analysis to a project management document or system.

Kija community workshop

A community workshop was held at Warmun Community Council in December 2002 to discuss the cultural mapping database and establishing a GIS in Warmun. At this workshop, Greg Mules described the conceptual framework of the database and provided examples of how this can be linked with a GIS system. Kylie Pursche, the research coordinator also talked about how many of

Aboriginal Management and Planning for Country

the artworks produced in the community are maps of country, and showed some of the paintings from the Warmun Art Centre.

Key findings of the community workshop were that:

- there is a need for a centralised place to keep important and sensitive information that community people can have access to
- there is a need to provide information to government agencies and industry pertaining to cultural heritage whilst maintaining cultural sensitivities and confidentiality
- there is a need to complete detailed field research on cultural landscapes and Indigenous resource use
- Aboriginal people want information recorded so that it is there for the future and can be used to educate children in the community and in school
- Aboriginal people are concerned that knowledge is being lost with the passing of elders.

Shown on the next page is a piece of artwork from Warmun. This is a good example of how Kija people talk about country and map country through art.

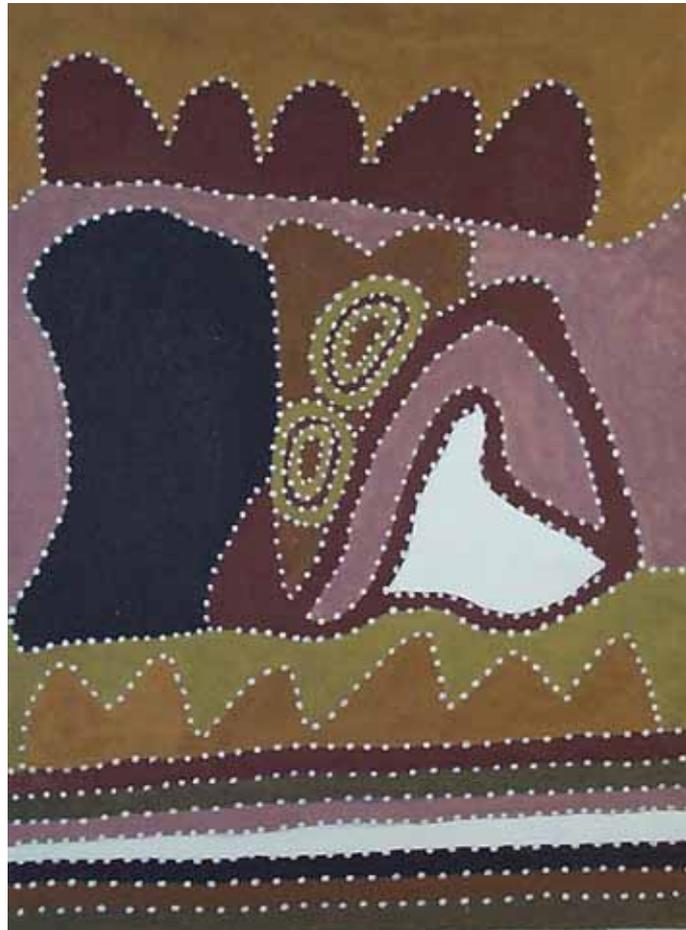


Greg Mules, GIS consultant at Warmun workshop, December 2002



Kylie Pursche at Warmun Workshop discussing the database and showing some examples of the sort of things that can be in a database: plants, animals, stories, photos

Art as cultural mapping



Reproduced with permission

Warmun Art Centre

Catalog No. 414/01

Artist MADIGAN THOMAS

Category

Size & Medium 80 × 60 cm / Natural ochre and pigments on canvas

Title: MOODERWAYN – NEAR ORD RIVER

This story happened at Mooderwayn, near the Ord River, up near Springvale Station. A son in law came to visit with his dog. He asked for permission to visit this place from the old girl who lived in the paperbark tree. It was nice and warm in the tree, lots of paperbark to wrap around and good places to sleep in the holes in the tree. But the son in law was tired and cold from his travels and asked the old woman for some paperbark to wrap himself in, but she was too mean and didn't give him any. He was shivering and cold, so he got some wood and gungali (little sticks) and started to make a fire to keep himself warm. The fire got bigger and bigger and started to burn down the paperbark tree with the old woman in it. The old woman escaped from the tree by flying away and turned into a bird, into Dinal, she is black all over from being burnt and as big as a woodpecker.

www.warmunart.com

Creating a cultural mapping database

The inclusion of Aboriginal cultural knowledge is the central component of any planning that Aboriginal people undertake for their country. The main aim of this project was to create a database using information from the ethnobiology research and other spatial information relevant to cultural mapping. Baseline ethnobiological data collected in the project 'Plants and Animals of Kija, Jaru country: Aboriginal knowledge conservation and ethnobiological research in the upper Ord catchment' includes taxonomic data, ethnobiological data, Aboriginal language information, GPS locations of plant specimens, and important cultural places.

A Plants and Animals database has been developed by GIS technician, Mr Greg Mules. Data from the ethnobiological research have not yet been entered. As discussed previously, data from the biologist and linguist were provided in two separate formats and this caused delays to the completion of data entry under the OBP. This work can be completed under the post-OBP project.

An Excel database of plant specimens collected by Glenn Wightman during this research has been developed and provided to the OBP GIS technician for integration into the regional integrated database.

Joe Blythe's database contains detailed recording of project participants that provided information about plants and animals, linguistic utterances, annotations of dreamtimes stories, and Aboriginal place names.

Existing data in the form of anthropological and ethnographic material have been sourced from the KLC library and these will be entered into the cultural mapping database in the post-OBP project.

As Greg Mules (Mules 2003) outlines in his report, the CKIMS consists of:

- *A relational database capturing cultural information on sites and features within, and of, the landscape that are of significance to Aboriginal people within the Kimberley region*
- *A relational database capturing cultural information on plants and animals occurrence, usage and cultural significance to Aboriginal people within the Kimberley region*
- *A GIS to capture, manage and distribute spatial (mapped) information captured in the databases and elsewhere*
- *An information management and secured distribution system to deliver appropriate cultural knowledge to stakeholders within the OBP.*
- *A set of procedures and methodologies for the engagement of the community, sharing of information and capture and distribution of data.*
- *Infrastructure, personnel and administration resources to ensure the sustainable development and maintenance of the system.*

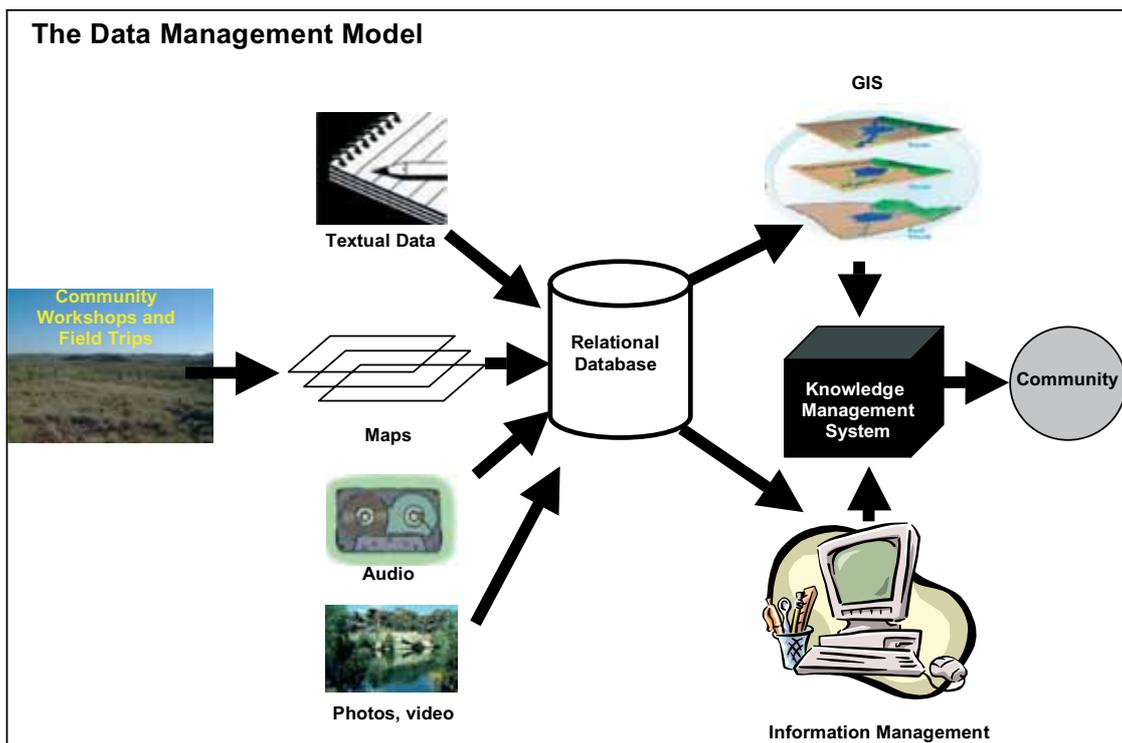
Key components of the CKIMS are:

- *The research of historical records and capture of recently recorded ethnobiological data to the database and GIS*
- *Engagement of community-based personnel to participate in the development, management and maintenance of the system*

Respecting and sharing traditional knowledge

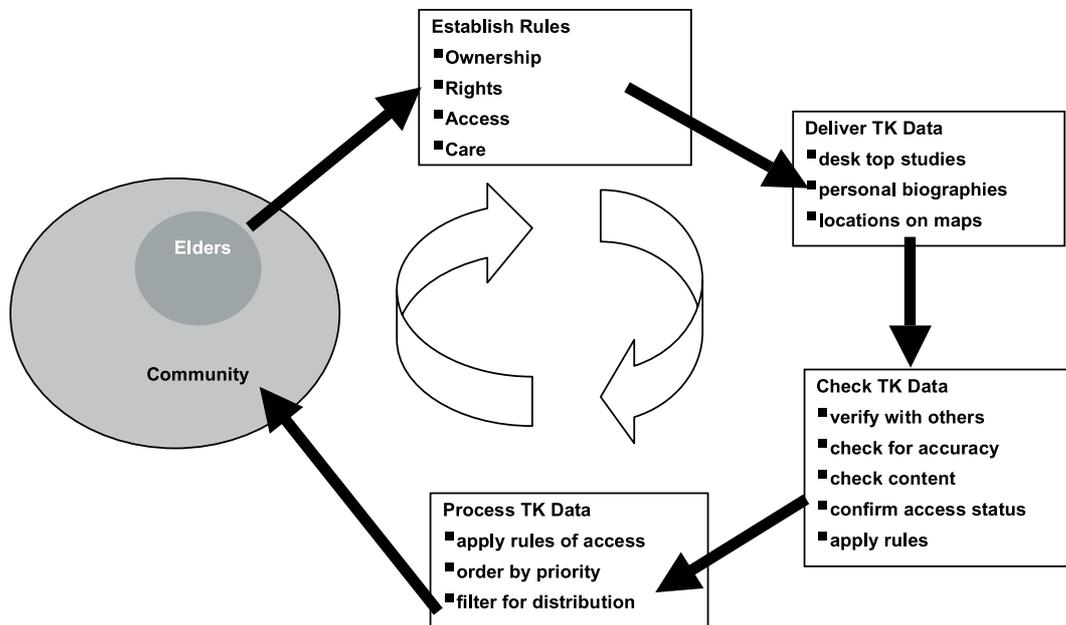
- *Development of community cultural knowledge workshops in which current knowledge is captured through shared biographies and group mapping of features of significance within, and of, the landscape*
- *Staged approach to development with an initial stage of data capture, management and distribution centralised within Kimberley Land Council (KLC)*
- *Collation, management and cost effective delivery of appropriate cultural information via a centralised server and web-based GIS*
- *Capacity to expand the system to a model of community-based management of data capture, management and distribution*
- *A vision of engaging all indigenous community agencies (schools, art centres, councils, service centres etc.) in an interactive environment of data sharing and knowledge management'*

A data management model has been designed and clearly identifies the relationship between data capture, data structure and linkages to a GIS system. The database will contain textual, audio and visual data making it user friendly and multi-purpose. Users of the database will be community members and it is hoped that the database will not only be useful as a planning and management tool but also can be used as an educational tool for the school and wider community members. The model below is from a PowerPoint presentation by Greg Mules at Warmun in December 2002).



The flow diagram on the next page illustrates how information will be collected and managed, and takes into consideration important issues such as the community establishing rules to do with the database, ownership of information, access to information and looking after the database.

Working with Aboriginal Communities in the Kimberley Traditional Knowledge



Source: Greg Mules, PowerPoint presentation, Warmun, December 2002

System design

As outlined in planning documents, the following points were highlighted as essential in any consideration of system design:

- *review existing intentions and their compliance with needs design and document the virtual and physical components of the proposed system – flow charts, network diagrams, data integration systems, system communication, etc.*
- *prepare database of data needs and assess issues of resources, availability, format, cost, cultural restrictions etc.*
- *design and document the GIS map layer and database integration strategy*
- *consider issues of data sharing (organisation and functions), data transfer and data version management.*

(Mules 2002)

In the CKIMS Plan developed by Greg Mules this is further elaborated upon. The fields were determined by the research coordinator and workshopped together with the GIS consultant.

Fields of information

The fields of information that will be captured in the database include:

- research /workshops session information (who, when, where, why)
- language group
- country

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- individuals /group participants/persons providing information
- type of 'feature' being recorded (camp, hunting, plant, animal, rock art)
- names of feature (Aboriginal and English)
- location information (incl. latitude and longitude for point data, map references or workshop feature-on-sheet reference)
- other features linked to a feature
- usage information (initiated, past and current use)
- male or female place
- current status (access, protection, restrictions, registrations)
- actions to be taken for a feature
- stories about a feature
- restrictions required for a feature
- individual statements for a feature.

To ensure data can be shared with OBP database systems (regional integrated database including the species information management system), consideration has been given to the structure of these systems when developing the CKIMS (CKIMS database and GIS).

Basic principles of the proposed system

The basic principles of the proposed system are as follows:

- ensure high quality of data (accurate, timely, representative, formatted, relevant)
- be transferable between OBP communities and beyond
- support the knowledge capture and data management challenges faced by KLC/OBP staff and community
- ensure generation, ownership, management, rights to and control of the data are vested with traditional owners and the community
- acknowledge the social/family structure of Kimberley communities and ensure that the inter-relationships within and between communities and cultural knowledge are recognised and captured.
- address the expectations and needs of the community to transfer knowledge according to the protocols of custom and lore
- treat all communities and stakeholders with respect in pursuance of knowledge shared in a way that is both open and culturally appropriate
- build capacity to operate, extend and maintain the system within and throughout the community using the resources available to it.

Not all data captured in the program will be available for public distribution. Filtered sub-sets of data and generalised maps will be provided, where appropriate, to ensure the integrity of culturally sensitive information and protection of Indigenous intellectual property rights.

Design specification

The aim was to design and develop the database and data structures within the concept that the GIS is one component of the overall information management system (IMS). This would be done by:

- developing a GIS map layer management and data integration (linkage to main database) system
- designing protocols and enforcement systems for metadata, file management, data sharing, transfer and version update management
- planning and specifying specific data management and analysis, map production and reporting processes.

Further detail of this is contained in the CKIMS Implementation Plan under 'The Methodologies' heading (Mules 2003). This section details data capture models, database structure, data capture forms, GIS data capture, database/GIS Integration and workshop.

CyberTracker

A preliminary assessment was made of the use of the innovative software program CyberTracker to incorporate Aboriginal knowledge into a GIS system, using Palm hand-held computers linked to a GPS.

This was conducted by Mr Greg Mules. Upon examining the software in further detail and assessing the research methodologies used by the ethnobiologist in the ethnobiological research, it was agreed by both the research coordinator and Greg Mules that it would not be appropriate to use the CyberTracker with the Palm hand-helds until later in the intensive cultural mapping field research component.

This decision was made on the basis of the following factors:

- ethnobiological research was focused on collating baseline information pertaining to all flora and fauna
- field research participants/language specialists were mainly older people who were not physically able to carry out a lot of walking
- CyberTracker is used for tracking and recording information of specific species. The ethnobiological work will identify key species for Kija and Jaru people and the CyberTracker software can then be modified and adapted for use in recording information about these key species. For example, this may include kangaroo, wallaby, emu, bush turkey, bush orange, cypress pine etc.
- ethnobiological field research identified key community members to use the Palm computers and train them to use the CyberTracker software.

Community-based GIS in Warmun

As outlined in component 6 earlier, the project intended to establish a community-based GIS in Warmun community in collaboration with Aboriginal people from Halls Creek and Warmun community, surrounding stations including Violet Valley, Bow River, Norton Bore and Chinamans Garden.

The aims of the project included the following:

- to develop a GIS system with Kija people from Warmun and outlying communities
- to develop and conduct cultural mapping activities with people from Warmun and surrounding stations and communities
- to train selected people to use GPS/GIS mapping software.

The development of a comprehensive database with information relevant to Kija and Jaru country is crucial for Aboriginal management and planning for country. When linked with a GIS system the database will provide an interactive decision-support tool to assist future local and community-based planning. GIS is a land-management tool whose visual application and adaptability for cultural-mapping purposes make its use appropriate and relevant for Aboriginal people.

Other factors will need to be considered, including housing and structural implementation and long-term maintenance of the system. Discussions with the Warmun Art Centre have included their aspirations to build a new art and culture centre. It is possible that a GIS system could be

housed as part of this new centre. This can be the foundation to further develop and establish a Kija land and natural resource management office. These issues will need further workshopping with community members and organisations.

The development of the GIS is discussed in greater detail earlier and in the CKIMS document.

Training

The project identifies the need to provide skills-based capacity-building and training for Aboriginal people in the use of GPS and GIS in the upper Ord catchment. Kija and Jaru people that have been involved in the ethnobiological field research have been introduced to the GPS and its use in recording spatial information. No formal training has yet taken place with the GPS, GIS or Palm computers. This training was to be undertaken by the OBP GIS technician but again changes to the OBP meant that she was not available to carry out this work. It is planned that this work will now take place under the post-OBP project.

The 'Steps in IMS*/GIS Development' identifies the employment of cultural information officers in Warmun to undertake training. Cultural information officers have not been appointed due to a number of factors including the following: intensive time allocation required for the ethnobiological field work; local community commitment to other projects including the Argyle Diamond Mine negotiations; longer than anticipated time in developing and refining the cultural mapping database; and decisions to suspend activities under the OBP Subprogram 1 Integration project.

Discussions have been held about training being carried out as part of the Kimberley Regional Fire Management Project (KRFMP). It is anticipated that the KRFMP may be able to assist with the development and delivery of appropriate training, but at this stage most of this work is focused in the West Kimberley.

Communication technology transfer

Extensive networks have been established with Kija and Jaru peoples. Communication and liaison was maintained with other OBP subprograms, particularly Subprogram 1 through the Integration project and the OBP GIS technician, Jaki Richardson.

The research coordinator has shown the draft cultural mapping database to other relevant NRM organisations/networks including the North Australian Indigenous Land and Sea Management Alliance (NAILSMA), Indigenous Land Management Facilitator for the Kimberley in September 2003. The research coordinator met with Mr Victor Stephenson from the Balkanu Aboriginal Corporation in Cairns in October 2003 to look at a similar type of database that he is developing.

A PowerPoint presentation on the conceptual framework of the database was also delivered to the Aboriginal Steering Committee meeting in November 2003 in Warmun. Committee representatives from the Waters and Rivers Commission, AgWA and WWF were present.

It is recommended that a small workshop or meeting should be held with people that are working on developing cultural mapping databases and community-based GIS with Aboriginal communities. This workshop could be funded by LWA or perhaps the CRC for Tropical Savannas Management and NAILSMA.

Baulu-Wah (Violet Valley) case study

There were a number of delays in initiating this case study proposed under Subprogram 1. The recruitment of the OBP GIS technician did not take place until late 2002 and hence the case study as part of the Integration project was unavoidably delayed. Field work was being carried out under the Plants and Animals project from June 2002 on Violet Valley and community members were keen to see this work progress.

As part of the Integration project under OBP Subprogram 1, a field visit was carried out on 16 March 2003 as part of the Integration Workshop. The two case-study areas selected were Violet Valley and Carlton Hill Station.

A follow-up trip was also held on the 20 March with the research coordinator, Andrew Taplin (Department of Environment and Heritage), Catherine Mobbs (LWA) and Jaki Richardson, GIS technician (OBP) to further discuss with Bruce Thomas his aspirations and what he would like to see come from the research.



Violet Valley field trip as part of the Integration Workshop in March 2003. L to R: Chris Done (CALM), Andrew Taplin (Department of Environment and Heritage), Aleric Fisher (CRC Tropical Savannas), and Bruce Thomas, Don Burnside and Lorraine Bates (CSIRO).

A further meeting was held with Bruce Thomas at Warmun, on 24 June, to go through the Violet Valley Case Study document in more detail. The primary outcomes desired of the case study are listed below.

Proposed Violet Valley case study outcomes

- increased stocking rate on appropriate areas of the property
- reduced frequency and areal extent of wildfires
- increased nutritional value of pastures
- increased knowledge, and harvesting ability, of 'bush tucker' plants (e.g. Konkerberry, black plum)
- improvements in ecosystem and habitat condition
- reduced impact on susceptible soil types, to reduce hillside and gully erosion using plantings and/or change in traffic.



Meeting at Violet Valley, Catherine Mobbs, Kylie Pursche, Andrew Taplin, Kenton Lawson, Bruce Thomas, 20 March 2003

As there were some delays in furthering the Integration project case studies because of the mid-term review of the OBP, it was decided that a ground-mapping exercise would be the first place to start to talk about *mapping country*. It was thought that using ground-mapping techniques used in other areas may be a good way to teach both the research coordinator and GIS technician (OBP) about the cultural landscape of this area of Kija country.

Ground mapping

Ground mapping was selected because methods of using topographical maps were not suitable for the older people involved in the project. Participants that had been working in the Plants and Animals project would be involved in this exercise, and experience working with them led us to believe that this would be a suitable first step in talking about mapping country.

The research coordinator and GIS technician completed a trial ground-mapping exercise with Violet Valley community members and traditional owners on 4–5 July 2003.

This exercise was to trial ground-mapping techniques that have been used in other parts of Australia, particularly Central Australia, as covered in Walsh and Mitchell (2002). The Violet Valley ground mapping was carried out in a creek bed chosen by the traditional owners, and local resources such as boab nuts, rocks, sticks and stones were used to mark creek crossings, places of cultural significance, infrastructure and sources of bush tucker.

The names of places were recorded and digital photos taken. The photos will be put together and a map produced with details that can be transferred to topographic maps, satellite images or aerial photos.

The exercise took longer than anticipated and we mapped only half of the area intended. It was agreed by participants that the rest of the area should also be mapped and that this work should be done as soon as possible. The completion of the OBP has postponed this work. It is planned that this work will be a central component of the post-OBP project.

Ground mapping



To start with Shirley drew up a draft map on cardboard



Rocks and boab nut used in mapping



Shirley Purdie, Helen Clifton and Nora Badngarri clearing the ground to start mapping



The map starts to take shape. Shirley, Helen, Madigan and Nora

Respecting and sharing traditional knowledge



Sandy and Madigan Thomas talk about where things should go

Sandy Thomas holding up the card for his country. Sandy's country is stormbird country. The cards were used to help Kylie and Jaki remember what each place stood for. The proper spelling for this stormbird is Kurrukurral (Wightman 2003, p. 55). It is important that language workers or a linguist participate in these type of activities so that the correct spelling of place names can be recorded.



Shirley Purdie with Kangaroo Dreaming, Violet Valley



Shirley welcoming Jaki Richardson (OBP GIS technician) to country

The ground mapping work was favourably received by participants and people are eager to complete this work and also carry out similar exercises in Warmun and surrounding stations of Kija country. As one lady said ‘we can do this anywhere and for all Kija country, even sit down in Warmun and do it’.

Recommendations

It is highly recommended that ground-mapping activities continue on Violet Valley to complete work there. It is also recommended that this type of technique be utilised in other areas of the East Kimberley to assist with planning for country.

There are several factors to consider and the work should include language specialists and language workers to assist with place names. The help of linguists and/or anthropologists and a GIS technician will also be needed.

Gender issues are relevant and it is important that both women and men workers are available to participate. As many of the project participants are women, the research coordinator found this to be of advantage. This was balanced with a male field officer to enable gender equity.

Capacity-building and two-way learning for Kija, Miriwoong, Gajirrawoong and Balangarra people in the lower Ord catchment

Pamela Simon: *People get sick going places without getting permission. Must get healing – this is sacred stuff. Tourists should get permission before going to these places. One bloke he got sick from taking rock from waterhole.*

Marjorie Brown: *White farmers putting chemicals into river – this is our mob country, they can't go somewhere else, but white fellas come and go. Diesel out of boats – fisherman and tourist boats. My country has been flooded (Lake Argyle) and now being polluted as well. Poison from the farms goes into the river.*

Marjorie Brown: *Can't get to bush food because of fences on farms.*

Edna O'Malley: *There is a need for Aboriginal rangers to start as it will help people look after country. What the gardiya gonna do to help Aboriginal people develop in this area? They might not support us'.*

Project objectives

The objectives of this project were to:

- assist the integration of Subprogram 5 with the other Subprograms of the Ord–Bonaparte Program particularly Subprograms 3, 4 and 1



Dick Pasfield (Ord Land and Water), Leith Bowyer (Waters and Rivers Commission), talk with Miriwoong traditional owners about pesticide use in the Ord Irrigation Area

- provide two-way information flow between scientific researchers and Aboriginal people in the upper and lower Ord catchment
- provide baseline information about ecosystem trends of the lower Ord River
- improve the Aboriginal people's skills base to enable them to use land-management tools such as GIS and GPS and to develop key skills in surveying, collection of research data, understanding research and planning, ecological systems and development of information products
- establish cross-institutional links between Kimberley College of TAFE and tertiary institutions such as Batchelor College to provide enhanced training and support for local Aboriginal people
- provide for culturally appropriate collaborative environmental education to take place in conjunction with the Waters and Rivers Commission, language centres and local schools
- support alternative career pathways for Aboriginal people in the field of natural resource management.

Background

The Miriwoong and Gajirawoong peoples' lands extend from the northern coast to the Ord River, south to the Carr Boyd Range and Lake Argyle area, and eastwards into the Keep River area. This project was born after discussions with Miriwoong people in the township of Kununurra. They identified a range of issues to do with management of country and related to the Ord River Irrigation Area and the effects on the Ord River of this land use and also other land uses including tourism, expansion of the township and shire planning, pastoralism and industry.

It was also informed through first-hand observation and discussions with Aboriginal organisations, government agencies and institutions including the Mirima Language Centre, the Department of Indigenous Affairs (DIA), the Wunan Foundation, the Waringarri Resource Centre, the Aboriginal and Torres Strait Islander Commission, and ADM.

As outlined in the OBP R&D Plan (LWA 2000):

R&D has a role in capacity building through the development of tools, methods, the collection and collation of data, as well as improving the general understanding of NRM issues and approaches by stakeholders. In the OBP capacity building will not be a "one-way" process from bureaucrat to the community, or from one cultural perspective to another, but rather it will be fundamentally a "two-way" process.

For Aboriginal people to make informed decisions about land use and natural resource management, a primary project focus was on information sharing, communication and conceptualisation of 'land management'. How Aboriginal peoples' needs and aspirations fit into the OBP, or how the OBP could be adapted to meet Aboriginal peoples' needs has been explored through the scoping study and the three research projects. Western-style land management must be integrated with traditional land-management systems.

Minimal attention to this type of work in the Kununurra area meant that SP5 commenced with little on-ground action having taken place.

A large amount of catch-up work was necessary. Capacity-building required institutional links with other service providers including TAFE, CSIRO, universities and government NRM agencies. It was envisaged that the capacity-building project would be two-fold – within the

Respecting and sharing traditional knowledge

realms of SP5 and also within other OBP subprograms to ensure that cross-fertilisation of projects occurred. This meant that Aboriginal people had the opportunity to be involved in other research projects, and other subprogram researchers were encouraged to work with Aboriginal people so that collaborative research would be carried out.

Capacity-building, or *capacity exchange*, as some people prefer to call it, includes examining the capacity and ability of government agencies and community organisations involved in NRM, to learn how they can get Aboriginal people more involved in decision-making processes.

This project directly links to the program theme of ‘Planning for country’. Capacity-building is multi-layered and is a broad term for ‘actions which enable indigenous people to be more effective and active in managing their lands and their lives’ (Hill 2002). Aboriginal people have their own system of looking after and caring for country. ‘Looking after country’ includes a whole range of factors including access to country, being able to carry out ceremonial and cultural obligations on country, the ability to be able to go hunting and fishing on country, recognition as the traditional owners of that country, and being able to make a living or form of economic development on country.

A key principle underpinning the concept of ecologically sustainable development is equity to access of information, resources and policy input. For Aboriginal people there has not been equitable access to information, resources or input into government policy. Where information is available it is often presented in ways that are not conducive to Aboriginal ways of learning nor show respect for Aboriginal land-management expertise. Rather it seeks to impose a compartmentalised way of looking at our environment and its resources by promoting Western scientific thought and practice. There is minimal institutional support provided to Aboriginal people from the East Kimberley to learn about government and non-government NRM initiatives, or to be involved in decision-making processes about the future sustainable development of the region.

The report of the scoping study notes that (Johnson et al. 1999, p. 129):

R&D does have a role in capacity building through the development of resource management tools and methods, the collection and collation of data, and in improving the general understanding of resource management issues and approaches by stakeholders.

The report also states that we can enhance the participation of constituents by ‘facilitating broad education about environmental and land management issues’.

As Aboriginal people gain title to more land in the region they need to be equitably involved in NRM decision-making processes at the sub-regional and regional level.

Relevance to OBP

A project focusing on capacity-building supported the following R&D priorities of the OBP:

- integration – creating pathways for Aboriginal people to be involved in the other subprograms of the OBP
- participation – participation of Kija, Miriwoong–Gajiwaroong and Balangarra people in all subprograms
- capacity – increasing the capacity and skills base of Aboriginal people from the lower and upper Ord catchment to be involved in natural resource management decision making and planning

- improving the capacity and ability of government NRM agencies, researchers and key community organisations to communicate, involve and include Aboriginal people in decision-making processes and planning.

As the R&D plan sets out: ‘developing the capacity of stakeholders to participate in integrated resource management is an important component of effective integrated resource management’ (OBP, 1999, p. 10).

Skills to address issue

- Traditional ecological knowledge of Aboriginal people
- Aboriginal land management systems and ways of looking after country
- Trainer/facilitator – SP5 research coordinator and TAFE
- Language Workers KLRC, Warmun and Mirima Language Centre

Summary of methods

Component 1: Establishing networks and strengthening links

The project leader for this work was Kylie Pursche, research coordinator for SP5.

It was vital to confirm institutional links with both government NRM agencies and training providers in the region. This included all NRM agencies such as the Waters and Rivers Commission, Conservation and Land Management, the Department of Agriculture WA, as well as the Kimberley College of TAFE, Batchelor College, Kimberley Group Training and also outside institutions.

In regards to training, it was proposed that specific training outputs be delivered to local people so that the skills base would be enhanced. Links will be established with government NRM agencies to provide employment opportunities and also with Aboriginal organisations that may be able to provide employment.

This work was also to occur across OBP programs, and it was planned that SP5 would work closely with SP3 and 4. This was identified from discussions with Miriwoong people about concerns for water quality in the Ord River Irrigation Area. It was planned that a number of Miriwoong people could become active participants in the water-quality sampling run that would take place every month.

Integration was also planned with SP1, through the Violet Valley case study, as discussed in the previous chapter.

The development of the Aboriginal Steering Committee was also a key method of establishing networks and links within the local community of Kununurra and in the Ord catchment area.

Component 2: Training, education and two-way learning

After establishing links with key educational and training providers, a short course was negotiated with the Kimberley College of TAFE in Kununurra. This was the result of discussions between David Gilmour (regional manager), Trevor Bailey (lecturer) and KLC. This training was to commence after the proposed trip to the Northern Territory Aboriginal Rangers Conference in August 2002. There were other factors to consider, including the availability of the lecturer at TAFE to offer the training. The earliest this could take place was from October 2002. The course

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was run as a partnership between the KLC and TAFE. The research coordinator participated in logistical planning and field trips.

It was highlighted at meetings in Halls Creek, Warmun, and Kununurra that a key goal for senior Aboriginal people is the transmission of traditional knowledge to children. The KLRC and the Mirima Language Centre both work with school children.

Discussions with the Waters and Rivers Commission focused on the revival of the 'Ribbons of blue' program, adapting it to make it culturally appropriate and relevant for local Aboriginal children. This has involved collaboration with local schools and teachers, language specialists, linguists and the Waters and Rivers Commission. An East Kimberley strategy proposal has been developed and a subsequent pilot in Halls Creek has been funded by the WA State Waterwatch program. The KLC worked together with the KLRC to implement the pilot project in conjunction with the Halls Creek District High School.

Component 3: Capacity-building and employment opportunities

For Aboriginal people to be adequately included in local and regional decision-making, there needed to be an attitudinal and policy shift from government agencies to make a concerted effort to include Aboriginal people in the day-to-day management of their traditional country estates. The community ranger training program has been identified as a way that Aboriginal people can be involved in looking after country and meeting their customary obligations.

The project aimed to improve employment opportunities within government NRM agencies in the Kununurra area.

Outcomes and achievements

The project aimed to work with Balangarra people, but commitments to the native title claim process and other projects ultimately meant that work was carried out primarily with Miriwoong and Gajirawoong people. Also, estuarine research under OBP subprograms 3 and 4 was limited. Through the Scoping Study, Balangarra people expressed interest in the work of OBP, in particular work focusing on marine and aquaculture research, and management of saltwater country. If research initiatives are to continue in the region, it is highly recommended that collaborative research with Balangarra people be investigated.

Two-pronged spear – integration with other OBP Programs

One of the key roles of the research coordinator was to assist the integration of SP 5 with the other subprograms of the OBP, particularly SP 3, 4 and 1. It was always the desire and intention of the KLC in becoming involved in the OBP that, whilst there would be a separate Aboriginal program focusing on Aboriginal people's research needs, that collaboration with other research programs should be optimised. This *two-pronged* approach was based on the recognition that Aboriginal people, as the traditional owners of country, had an interest in all areas of land use and land management whether it be looking into water quality in the lower Ord or research into better rangelands management.

The plans to collaborate with OBP SP 3 and 4 centred on: 'The response of the lower Ord River and estuary to management of catchment flows and sediment and nutrient loads' (OBP SP 3: Project 3.4B, OBP SP 4: Project 4.1B, 4.2B). These did not progress as planned due to a number of operational issues, such as limited boat capacity and the short duration and high intensity of the fieldwork conducted by visiting researchers. It was envisaged that Aboriginal people could assist with and learn about the water quality work and also that information could be recorded from Aboriginal people's points of view about changes to the lower Ord river.

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Within the OBP structure, the majority of key researchers lived outside the study area, some as far away as Perth, Canberra and Tasmania. This creates a number of limitations on collaboration, as researchers are in the study area for only short periods of intensive work, and only once or twice a year. It was agreed by all researchers in the OBP Operations Committee (2003) that, in the remaining two years of the OBP, research projects would be planned around collaboration and participatory research. This would have involved longer periods for researchers in the area and also detailed planning and resource allocation to allow for traditional owner involvement.

Ephrem Kennedy, a local Miriwoong person, participated in a number of the water quality sampling runs on the lower Ord with Duncan Palmer, SP 3 researcher, placed at the Waters and Rivers Commission. Unfortunately, because of logistical problems this was limited to one person instead of the intended five or six Miriwoong people. Ephrem gained valuable knowledge in principles relating to working with equipment, understanding time frames of research, in obtaining and managing data, and in the use of GPS.



Duncan Palmer and Ephrem Kennedy on the lower Ord

Collaboration

Collaborative projects are not merely annexing traditional systems of knowledge, but rather, interacting with them, and thus the outcomes are neither absolutely the result of scientific thought nor that of Aboriginal thought.
(Langton 1998, p. 8)

Collaborative research has taken place under the ethnobiological research in the 'Plants and animals of Kija and Jaru country' project. In this project both a biologist and linguist have worked with over 60 traditional owners in the upper Ord catchment to record traditional ecological knowledge. Duncan Palmer addressed a Miriwoong Gajirrawoong meeting in June 2002 about the OBP water research (SP 3 and 4) and there still remains strong interest from Aboriginal people to learn more about this work. At the Aboriginal Steering Committee meeting held on 13 May this was further reinforced, with water quality a key issue. It was agreed that the Waters and Rivers Commission, Ord Land and Water (OLW), OBP, KLC and the Department of Indigenous Affairs (DIA) would hold another meeting with Miriwoong people (see later section on pesticides).

Discussions took place at the OBP Operations Committee with SP 3 and 4 researchers and other subprogram researchers for involving a greater number of Aboriginal people in future research

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projects and ensuring that this is adequately resourced and planned for in future research project plans. This has not taken place due to changes in the OBP.

In conjunction with the OBP Evaluation Project run by Jenny Bellamy from CSIRO, it was agreed that SP5 and SP1 would work together on an evaluation project that ensures that future internal program evaluation will be conducted in a culturally appropriate way and with direct Aboriginal participation. It was planned that, within this work, we would collaborate with both the Mirima Language Centre and the KLRC. Again this work was not completed because of the demise of the OBP.

Unfortunately, collaboration or *integration* between programs in the first half of the OBP did not reach its full potential. It is my firm belief that this would have improved if the OBP continued for the full five-year term. Discussions with key researchers and subprogram leaders confirmed that people were committed to improving this situation but needed advice, guidance and direction on how to do this. Research projects must also incorporate this into their budgets and include extra time within field research planning.

Ecosystem trends

The damming of the Ord river has dramatically altered the natural environment of the lower part of the Ord catchment. Miriwoong, Gajirrawoong, Kija and Jaru senior people can remember the landscape, flora and fauna both before and after building of the two dams. Senior people remember walking the course of the river camping along its path and fishing from billabongs and waterfalls. Even the southern point of Lake Argyle where the Ord and Bow rivers meet has been dramatically affected. Particular waterbirds are now common that were not traditionally found in the area, as are a number of weeds.

The area is now internationally recognised for its natural values and Lake Argyle, Lake Kununurra and the lower Ord wetlands of Parrys Creek lagoons are listed under the Ramsar Convention. The dramatic increase in riparian vegetation, whilst recognised as a modified environment, is now the established baseline when considering issues such as water allocation and environmental flows for Ord Stage 2. It has even been said that Aboriginal values of wanting a river with more seasonal flows could support the allocation of water for Ord Stage 2, as it would see lower water levels in the Ord. Whilst not agreeing with this simplistic reasoning, as it fails to consider the impacts of Ord Stage 2 on other areas of Aboriginal country and significant cultural value, there is now an improved understanding amongst some government agencies and community representatives of the environment of the lower Ord that many older Aboriginal people grew up in (pre-dam).

The intention of collaborating with the SP 3 and 4 water-quality runs down the lower Ord was to provide opportunities for traditional owners to talk about how they perceive the river has changed over time. This traditional knowledge would have been of assistance to SP 3 and 4 and to other researchers. In particular, scientists from CALM are interested in this research, as it provides an opportunity to greatly add to the understanding of this complex ecosystem. Logistical issues, including the size of the Waters and Rivers Commission boat, have meant that this work could not be carried out in any detail.

To compensate for this, the KLC entered into a research agreement with the Mirima Dawang Woorlab-gerring Language Centre and Mr Noel Preece, a PhD candidate, to undertake work documenting Miriwoong and Gajirrawoong peoples' perspectives about changes to the Ord and Keep rivers. This work has not yet been completed, but an interim progress report has been submitted in January 2004 and is under consideration by both organisations.

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General data have been collected about the lower Ord River from consultations that the research coordinator has carried out with Miriwoong people. These comments are relevant to the area from the southern end of Lake Argyle to the lower Ord River. They include the following:

- *Country has been drowned by Lake Argyle*
- *Too many weeds along the river banks and you can't get access to it now*
- *Not enough places for Miriwoong people to go along the river for fishing and relaxation*
- *A lot more crocodiles than there used to be before the dams*
- *Dunham river is dirty because of run off from Packsaddle Plain farms*
- *Changes to the river means there are now no sandy banks and waterholes to go fishing in*
- *Not as many galahs or cockatoos as there used to be*
- *Not as many wallabies as there used to be. Used to be big mob on the lower Ord.*
- *Country buggered up from lake (talking about Bow and Ord junction). Used to be all red dirt here and paperbark and bloodwood*
- *River used to have sandy banks. You could hunt this side and the other*
- *Used to be emu here not any more, down the bottom of the Lake they are still breeding*
- *Magpie geese never used to be here, since the Lake there is big mob here*
- *Some bream have red and yellow spots on them since the dams put in*
- *We don't like to fish in the river because we are worried about poisons from the farms*
- *People worried about diesel from boats*
- *Too many rubbish trees along the edges of Lake Argyle*
- *Too many cats here now*
- *Donkeys are here but not as many as there used to be*

There is more detailed information related to this topic provided in a report by Barber and Rumley (2002) to the Waters and Rivers Commission. More recently, there is a draft report produced by the World Wide Fund for Nature (WWF) on the 'Ord River values' (WWF 2003) that also details information related to changes in ecosystem trends.

As documented by Lane (2003) a senior Miriwoong woman expressed concern that the 'habitat for a particular frog, which in Ngaranggaarni stories is responsible for making it rain', may be disturbed in any new developments in the Ord River Irrigation Area (WWF 2003, p. 46).

It is imperative that Miriwoong people are involved in any discussions and decisions about Ord Stage 2, and that traditional ecological knowledge is recorded for the proposed area. A key issue that has already been raised in discussions regarding the expansion of the irrigation area is the importance of establishing wildlife and habitat corridors (Miriwoong traditional owner, personal communication 2002).

Ranger conference

I want to learn from these mob at the Conference and what they do. Take this information back and talk to our mob about getting started and for them to be involved. Want to start getting involved in looking after communities and outstations. (Jennifer Thompson)

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I want to learn from Rangers. Take back what we learn and start it in the community. People got no respect for sacred places – dangerous places tourist got there without asking. Want to work out how we can fix these problems.

(Doug McCale)

The KLC Land and Sea Unit was advised that there was to be an Aboriginal rangers conference in Kakadu from 6–8 August 2002 and thought it would be good to send some of the Kimberley mob to attend. The KLC thought it would help the mob from this way to find out more on what Aboriginal community rangers do, and for people to think about how they might foster similar programs on their country.

Over 20 Kimberley people attended the conference and more than half of them were from the East Kimberley. A report from the trip has been produced by the KLC Land and Sea Unit. The full report contains lists of issues and concerns that Kimberley people have about land use and land management on their country.



Kimberley attendees at ranger conference, 2002

The main issues that people talked about are listed below (not in order of priority):

- traditional owners commitment and support
- funding for employment and training of rangers
- issues with weeds and feral animals (cane toad)
- community commitment and support
- burning and fire management
- policing and having the appropriate training for powers to prosecute people, especially in regard to fisheries and desecration of sacred sites
- ranger programs – how it is done, how training is carried out, different sorts of rangers; rangers for national parks, fisheries rangers, community rangers
- women ranger programs
- saltwater and freshwater issues
- tourists – managing tourists
- unity between mob
- cultural heritage and protection
- looking after sacred sites and rock art protection
- recognition and respect from government

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- outstations and living areas
- government and stakeholders giving mob a fair go
- poor distribution of information by government about programs they provide
- information needs to be in plain English and in Aboriginal languages
- more resources provided by government
- Aboriginal people showing more unity to get this going.

The report also lists recommendations for progressing a comprehensive ranger training program in the Kimberley. These are included in the list of recommendations given in this report.

As a primary outcome of the visit to the NT rangers conference, negotiations between the KLC and the Kimberley College of TAFE, Kununurra, were successful in providing a short course, 'Introduction to Landcare', for Miriwoong people, in October 2002. Ten Miriwoong people enrolled in and completed the course.

Employment and training (rangers)

Stan Brumby said: *Men and women should be Aboriginal rangers looking after their country.*

Stan also said: *Old people should be involved in training young people as rangers as old people know that country and have to teach young people.*

Shirley Brown said: *Ranger training (old people been doing this for long time). Have junior rangers training which is done in the school and senior rangers to help them.*

Glennis Newry said: *We want rangers around town so we can help and have a proper say in what happens. We have no Aboriginal rangers working at the moment so we got to work hard to get it started.*

Pamela Simon said: *We want them to learn and know about what we think about country. To respect us.*

Ephrem Kennedy said: *Tourists go to sacred sites and they don't get welcomed in a cultural way. When we take people there we have to wet their head and they don't do that.*

The aim of the ranger training program was to support alternative career pathways for Aboriginal people in the field of natural resource management. The project also aimed to negotiate with TAFE more culturally appropriate methods of training for land management incorporating traditional Aboriginal management systems and knowledge. Ranger training developed with the Kimberley TAFE provided Miriwoong people with skills in the following areas: collection of plant specimens and pressing of plants, identification of common weeds and basic knowledge regarding control of weeds, and developing and producing information products relevant to land management including Aboriginal knowledge.

At the beginning of 2003 Miriwoong people again enrolled in the Ranger course and focused on 'Weeds and industrial practice', an accredited course that is part of the Conservation and Land Management Training package.

Training continued in the second semester, with an Aboriginal short course focusing on the communities of Molly Springs, Police Hole and Ningbingi (Carlton Hill Station). A product of this is the report produced by Molly Springs community.

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Ranger trainees with certificates from 'Introduction to Landcare' course: Kim Aldus, Desmond Rogers, Yvonne Newry, Trevor Bailey (TAFE), Pamela Simon (knowledge specialist), Maureen Simon, Jennifer Thompson, Kylie Pursche (KLC)



Sylvia Simon, Jennifer Thompson, Maureen Simon at Molly Springs as part of ranger training, 2002

It was agreed by both the TAFE instructor and the research coordinator that the flexible Aboriginal short course was the preferred method for delivery of training for the people enrolled in the course. A challenge in the Kununurra area is that there are a number of outstations and communities. Many of these have 20–30 residents, of whom only 3 or 4 people would be eligible for doing ranger work; that is, a number of residents are elderly or have other work commitments. Cultural responsibilities and obligations play a factor as people cannot talk for somebody else's country and this applies equally in a learning context.



Trevor Bailey with Maureen Simon, Sylvia Simon, Keiran and Naomi Simon on the lower Ord looking at weeds, 2003



Sylvia Simon with gooseberry, lower Ord, 2003

The Aboriginal short course allows a great deal more flexibility and also a greater deal of input and involvement from both students and community members in designing the course layout. The key disadvantage of the short course method is that it does not provide the learner with nationally recognised key competencies that are deemed as accredited training.

Adult learners find training relevant and desirable when it is focused on a subject that is familiar. For Aboriginal people there are core issues that are important in the learning process being successful. As pointed out in ANTA (undated), the ‘overriding factor identified by students for achieving success is a recognition of their Aboriginality’ (p. 4) and that ‘students want to talk about the relevance of their own experience to the areas being studied’ (p. 87).

This principle was applied in the development and implementation of the ranger training in Kununurra. Both the short courses and the accredited course on weeds focused on geographical areas that had meaning and relevance to people. They also attempted to focus on achievable

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outcomes. For example, an equal amount of time was spent in the classroom and in the field. Field trips were focused and directed by students. Students would select field trip locations. These included key recreational areas that people currently use in the Kununurra area and also areas that people had concerns about in terms of protection of cultural heritage and other land-management issues.

The course required students to participate for one day a week over a period of between 6–10 weeks. Whilst enthusiasm for the course remained, external factors such as personal and family pressures had an effect on the consistency of attendance. This was a determining factor in moving back from the accredited course to the Aboriginal short course. The accredited course method is less flexible.

Training methods employed included elders from the community, who provided valuable assistance and direction on language and cultural heritage. The flexibility of the TAFE lecturer, Mr Trevor Bailey, and his experience working with Aboriginal people, were also instrumental in the success of the courses.

Employment initiatives

Discussions took place both before and during the training period with local agency representatives from State Government NRM agencies including the Department of Conservation and Land Management (CALM), the Waters and Rivers Commission, and AgWA about Aboriginal peoples' aspirations for involvement in NRM and planning, particularly the development of employment of community rangers within agencies.

A field day was planned with CALM to discuss the role of rangers in Mirima National Park. The regional manager of CALM left the agency in the second half of 2003 and it was agreed that this meeting should be postponed until a new regional manager was appointed. The new manager was appointed in 2004. Another factor in the delay of this meeting was the commitments of Aboriginal people with other KLC projects such as the Argyle Diamond Mine and Miriwoong Gajirrawoong native title negotiations. Hence, it was not possible to hold this meeting under the OBP.

The Waters and Rivers Commission and the KLC have developed an agreement so that local Aboriginal people can be employed under contract on a casual basis. Whilst this has not been used regularly, it has been used on occasion and it is hoped that it will continue into the future.

Outcomes

Outcomes of ranger training include:

- better understanding of the cultural make-up of the Kununurra region by OBP, LWA and other government agencies
- improved institutional linkages with educational institutions in the Kununurra region, enhancing appreciation of the principles of two-way learning
- raised awareness of Miriwoong people's aspirations to be involved in decision-making and management and planning of the areas natural resources
- casual employment agreement between the KLC and the Waters and Rivers Commission
- Miriwoong ranger training 2002 report
- Molly Springs (Woojiliawarrim) report
- improved relationships with government NRM agencies
- Preparation of a discussion paper about Miriwoong ranger training.

Development of models for two-way learning and capacity-building

Why is capacity-building important for natural resource management? A national perspective

Issue no. 24 of *RipRap* (a LWA publication), published in 2003 (LWA 2003), focused on 'capacity building' and examined what it means for individuals, groups and institutions and for NRM. One article described the National Natural Resource Management Capacity Building Framework, which focuses primarily on the National Action Plan (NAP) and Natural Heritage Trust (NHT) processes but can also provide a framework for other programs with NRM components. The OBP and SP5 can be viewed as such programs.

Within this framework 'capacity building is defined as a range of activities' and can include 'awareness, skills, knowledge, motivation, commitment and confidence'.

The *RipRap* article notes:

Capacity building for NRM goes beyond the traditional top-down approach of enhancing skills and knowledge through training and provision of technical advice. It focuses on enhancing genuine community engagement in all aspects of NRM, from planning to on-ground actions. This means that the framework supports activities that foster social cohesion within communities, and build both human and social capital.

To relate this to our local experience, it has been a challenging exercise to bring together Miriwoong people with government agencies. Not challenging from the perspective of any reluctance from Aboriginal people but a lack of *know how* and, some would suggest, willingness from government agencies to have the *capacity* to engage with Aboriginal people. Whilst funding shortfalls may be an argument to justify lack of employment opportunities for Aboriginal people in government agencies, it does not explain the generally lukewarm approach taken to attempting to engage with local traditional owners and involving them in NRM.

The figure on the following page is a conceptual model of integrated government support aiming to achieve sustainable NRM. The essential ingredients in this model are resources, communication, capacity-building, on-ground actions, and institutional change with an overarching emphasis on monitoring and evaluation. It is imperative that any regional approach in the East Kimberley consider these factors. A whole-of-government approach is needed to spur a major policy shift in the way that government NRM agencies do business and how they should actively include Aboriginal people as equal decision-makers in all aspects of NRM. This policy shift must be matched with a review of State budget allocations for regional areas, so that the inclusion of Aboriginal people can be reflected in local employment and training figures.

This should also be extended into the area of sustainable economic development. One of the projects that was drafted in the scoping study phase of SP5 was a project focused on 'Alternative economic opportunities for Aboriginal people in the Ord catchment: tourism, agriculture and horticulture'. It was thought that this project could have been supported in stage 2 of the OBP when sound relationships had been developed with traditional owners from the catchment area. With the demise of the OBP, funding should be sought from alternative places to carry out this work.

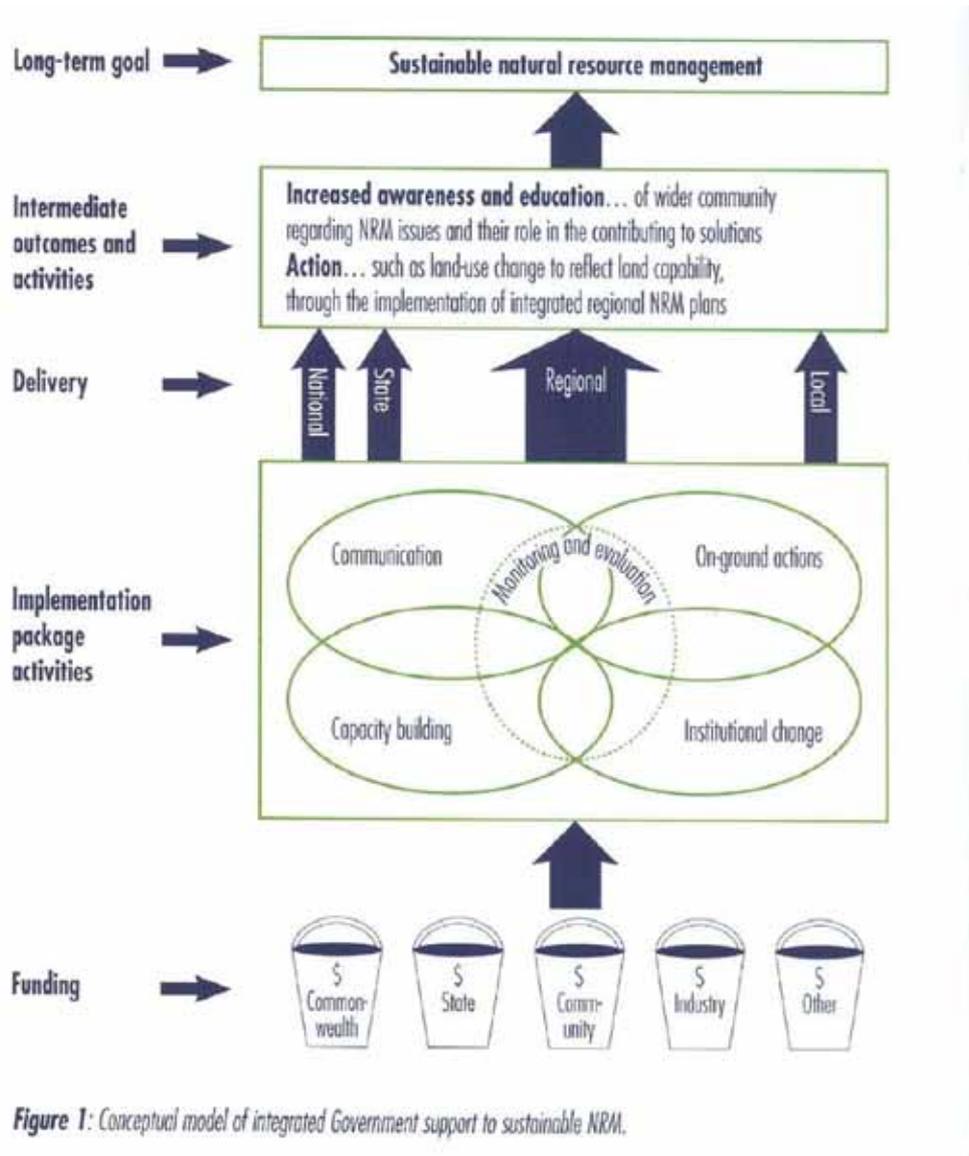


Figure 1: Conceptual model of integrated Government support to sustainable NRM.

Source: LWA (2003)

Key aims of this project were:

- development of an Aboriginal tourism strategy that identifies issues related to existing mainstream site usage and the development of Aboriginal tourism enterprises
- a desktop study of alternative economic opportunities in the East Kimberley that fit within the realm of ecologically sustainable development. This study would examine Aboriginal businesses State-wide and throughout Australia. The outcomes would provide advice on potential business opportunities
- employment of an Aboriginal business development officer at the KLC.

This project would work closely with the initiatives of the Kimberley Development Commission, in particular the work of John Smoker, Aboriginal Economic Development Officer, and also the Western Australian Indigenous Tourism Organising Committee (WAITOC).

Another story in *RipRap* 24 focuses on the Aboriginal Landcare Education Program (ALEP) in the Northern Territory. This program was also brought to our attention at the Aboriginal rangers

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conference in Kakadu. The program is a partnership between the Northern Land Council (NLC) and Greening Australia, and is funded by the National Landcare Program and the Commonwealth Government's Contract Employment Program. ALEP 'assists communities to manage their country by using traditional local knowledge and providing advice for about contemporary technologies'.

The fundamental platforms of the program are employment of Aboriginal people, working in partnership with Aboriginal groups, and building the capacity of communities to run their own programs. The program's success is its ownership and engagement by Indigenous people.

It was envisaged that a similar program could be established here with Aboriginal people in the Kimberley and run through the KLC. The program was advised by Greening Australia that this work was focused only within the Northern Territory. It is frustrating for Aboriginal people in the East Kimberley, particularly Kununurra, to have State boundaries used as justification for lack of funding and ability to develop programs.

Many Miriwoong people and Gajirrawoong people have traditional ties to land within the Northern Territory. The prevalence of ranger programs and a capacity for both the NLC and the State Government to engage more directly with Aboriginal people is in marked contrast to the reality in Kununurra.

The KLC does not receive funding for land-management work. All funds received for this work are provided by external funding bodies. ATSIIS provides funds to the KLC, but only for it to carry out its statutory functions under the *Native Title Act 1993*.

The reality in the Kununurra township area is that Aboriginal people will gain more control over land and, regardless of native title, want management rights over country. In particular, Aboriginal people feel they have a special role to play in managing country, and this directly relates to custodial obligations to *look after country*. This includes fear and worry about the safety of non-Aboriginal people who may go to areas where they have not been welcomed and also fear about the destruction of important sites.

The following maps show the native title claim areas and proposed conservation estates for land surrounding Kununurra.

The experience in Kununurra

Aboriginal people constitute just under half the population of the Shire of Wyndham–East Kimberley (Cowell and Pursche 2002). The lack of dialogue and development of any Aboriginal employment strategy focusing on NRM, Indigenous working groups or engagement with the local community has left a significant gap in the achievement of sustainable NRM embracing social, cultural, economic and environmental values.

There has been significant progress in this area over the past two years, with some government agencies now committed to working with Aboriginal people. For example the Waters and Rivers Commission has, in conjunction with the Mirima Language Centre, developed a map of Miriwoong language names for areas in the lower Ord. Ord Land and Water is currently airing radio information sessions in local Miriwoong language, translating sections of the Ord Land and Water Management Plan.

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The research coordinator and Trevor Bailey, the TAFE lecturer, have discussed the concept of offering accredited training in conservation and land management using the block method learning style as implemented by Bachelor College. This course could be run in the East Kimberley, with blocks rotated amongst the towns of Kununurra, Wyndham, Warmun and Halls Creek. As there has been interest expressed from Aboriginal people in all these towns, and also from people in the desert communities of Mulan, Balgo and Bililuna, it is believed that there would be enough enrolments to make this course a suitable option. Relevant Aboriginal groups are Miriwoong, Gajiwroong, Kija, Jaru, Tjurabalan and Balangarra.

This block method would ensure that students, while taken away from family and community life for two weeks at a time, would be focused and provided with nationally accredited training recognition. It would also give people an opportunity to showcase the work on issues relevant to their area. In this sense, a group would 'host' each training block, and lessons could be framed around the examples in these communities.

What have we learned?

This short experience through SP5 has provided a foundation for the local community to build upon. There are now established links with educational providers and Miriwoong people in this area of training. Miriwoong people have their own ideas of how they would like to see this work progress. There are a lot of discussions from Miriwoong people about the employment of Aboriginal rangers at Lake Argyle, Lake Kununurra, lower Ord, Molly Springs, Mirima National Park and at outstations and communities including Yirralarlem and Cockatoo Springs.

There is no reason why rangers could not be both land and water-based and have a primary role in a variety of land-management duties including: protection and maintenance of cultural heritage; running cultural tours; feral weeds and animals work; infrastructure development including walking tracks, toilets and shelters; tourist site interpretation and signage; policing of fishing and tourist activities; fire management; and enterprise development.

Many Aboriginal rangers are employed across Australia to carry out similar responsibilities on country. With the determination of native title in the Kununurra region, this must be extended into meaningful recognition including employment and entrepreneurial initiatives that recognise Miriwoong people as the traditional owners and managers of their country.

This concept has also been workshopped with Aboriginal Steering Committee members. Aboriginal people from throughout the Ord catchment area would like to see the development of ranger programs encompassing these responsibilities.

Recommendations

- A working group should be established with the Aboriginal Steering Committee, the Kimberley College of TAFE, the KLC, other Aboriginal organisations (Waringarri, KREAC, Wunan Foundation, Kimberley Group Training, ATSSIS) and government agencies to develop a comprehensive ranger training program in the East Kimberley.
- The options for developing and running the conservation and land management program in the East Kimberley with the Kimberley College of TAFE and/or other appropriate training providers, using the block style method of training, should be investigated.
- Government agencies should be included in the development of ranger training programs. Career pathways should be developed and included in any ranger training initiatives and this may include on-the-job and workplace training as part of the course.
- Funding opportunities should be investigated in relation to developing community ranger programs through Community Development Employment Program (CDEP) schemes.

Molly Springs (Woojilawarrim) Community

As part of the ranger training in 2003, and also from further meetings held by SP5, a report has been developed by community members from Molly Springs. Some of the issues from this report are listed below:

Issues

- People are worried that there is no respect for that place as it is a very important Aboriginal place and needs to be managed by them.
- There are concerns that a lot of visitors go there to swim and camp without permission. When they go they leave rubbish behind and this is no good for the environment.
- People see the opportunity to develop cultural tourism for the area. Doing this would allow them to generate income and it would also fit into their current plans to develop the community.
- People said that they would like to put rubbish bins there and they would empty them as part of their Community Development Employment Program.
- People want to meet with KLC, the Department of Land Administration (DOLA), SWEK, and the Ivanhoe Station (Manager) to assist them with working out a management plan for the Molly Springs swimming area.
- People want greater control over the area due to current issues and concerns.
- The area should be closed at certain times of the year to allow for rehabilitation.
- People wanted to use CDEP to help manage the site.
- There is artwork in the area that needs managing and protecting.

Pests, plant and animals awareness and information strategy for Aboriginal communities in the East Kimberley

Weeds are a major problem in the Kununurra township. Weeds have spread primarily due to the practice of irrigated agriculture in the Ord valley. It is estimated that there are over 250 weed species between Lake Argyle and the diversion dam. Miriwoong people often complain about how they can't access the river because of the predominance of weeds. In fact, a lot of the riparian vegetation in this section of the Ord river consists of weeds.

There is also concern about the imminent arrival of one of Australia's most serious pests – the cane toad. The cane toad is in plague proportions in the Northern Territory and this is of concern, particularly in key conservation areas such as Kakadu National Park. The cane toad is also in Katherine and it is only a matter of time before the pest arrives at the Western Australian border.

Weeds and feral animals and their impact on the environment are of concern to Aboriginal people of the East Kimberley. In general terms, weeds are referred to as 'rubbish plants' or 'gardiya plants', the latter name recognising that European settlers brought these foreign plants into the region.

It is not possible to control all of the weeds that are now in the East Kimberley region but there are weeds that have not yet arrived in the area and ones that the AgWA are on alert for any sightings. These include *Mimosa pigra* (giant sensitive plant), *Eichhornia crassipes* (water hyacinth), and *Salvinia molesta* (salvinia).

There are biological, physical and chemical methods for control of both land and aquatic weeds.

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Ranger training – talking about what people would like to see happen at Molly Springs.



Molly Springs is an important place for Miriwoong people

There are many Aboriginal people who live in Kununurra whose traditional lands extend into the Northern Territory and the Keep River region. Some people spend the dry season at communities across the border in the Keep River National Park. People who travel across the border and visit remote areas are ideally placed to keep an eye out for any foreign incursions of plants or animals that they have not seen before.

In discussions with AgWA, it was proposed that it would be a long-term strategy to develop a network of Aboriginal people or rangers across the East Kimberley and the Kimberley region that could work on these issues. Aboriginal communities, particularly those in key locations such as border crossings and coastal areas, are ideally placed to undertake this work. The communities of Kalumburu and Oombulgurri are also ideally placed to be involved in this work.

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As a product of discussions with AgWA, a 'Pests, plants and animals awareness and information strategy for Aboriginal communities in the East Kimberley' has been developed with the KLC. Pursche and Wilson (2003) describe the strategy:

This Strategy is a collaboration between the Department of Agriculture and the Kimberley Land Council Land and Sea Unit. It is anticipated that the Strategy will develop in three stages. The first stage is the delivery and dissemination of information to Aboriginal people in the East Kimberley. The second stage is the development of the Weed Management Plans and the third stage is the on ground action and implementation of the Plans.

As part of Working with Indigenous Land Managers, a strategic approach 2002–2005, from the Department of Agriculture, the Department recognises the role the traditional landowners play in the management and utilization of the states agricultural and pastoral resources. The commitment in this strategy is to establish links and partnerships with the indigenous communities, individuals and other agencies to maximise the Departments capacity to work with Indigenous Land managers. This Pests, Plant and Animals Awareness and Information Strategy for Aboriginal Communities in the East Kimberley will assist in achieving this commitment from the Department.

The Strategy will focus on providing information to Aboriginal communities and outstations in the East Kimberley. Consultation will include but not be limited to: Kununurra region – Mirima garden, Mirima reserve, Emu Creek, Molly Springs, Nulwirriwirri, Cockatoo Springs, Wooli, Bell Springs, Mud Springs, Glen Hill; Warmun region – Warmun, Doon Doon, Bow River, Violet Valley, Crocodile Hole, Frog Hollow; Halls Creek region – Halls Creek, Mardiwah Loop, Red Hill, Lamboo, Koongie Elvire, Wungu; Wyndham region – Wyndham, Goose Hill, Oombulgurri'



Mimosa infestation. Photo courtesy Noel Wilson, AgWA.

Respecting and sharing traditional knowledge

Potential outcomes of the strategy are listed below.

Outcomes

- Closer working links and improved networks with Aboriginal communities, organisations and individuals in the East Kimberley
- Development of culturally appropriate information products (plain English, in Aboriginal languages)
- Improved surveillance network in the East Kimberley
- Raised awareness of common weeds, exotic weeds, vertebrate pests (e.g. cane toads, donkeys, wild dogs) to the above communities
- Weed management plans developed with Aboriginal people for specific locations
- On-ground operational work carried out as actions of the weed management plans
- Development of a network of local government, educational institutions and other interested parties for delivery of weeds awareness and participatory action
- Links established with educational providers Kimberley College of TAFE to deliver training in Aboriginal land management.

A key outcome from the strategy has been the development of a successful partnership between the CRC Weeds, AgWA and KLC for a part-time Aboriginal Liaison Officer position to be based at the KLC Kununurra office.

It was planned that this the incumbent in this position would work with the research coordinator and the field officer in the KLC.

CRC for Australian Weed Management

The research coordinator reached agreement with AgWA and the CRC for Australian Weed Management to fund a part-time Aboriginal Liaison Officer in 2003. The CRC and AgWA have committed funds to this position. There is also interest from the Indigenous Land Corporation and there is potential that once this position is operational that further funding may be received to make the position full time or, alternatively, for two part-time positions to operate in the East Kimberley.

This position will liaise with and develop a network with the newly appointed CRC Weeds Aboriginal Liaison Officer position in Darwin. The East Kimberley position will be based at the KLC Kununurra office and work predominantly with communities in the Keep River and Kununurra region.

It is hoped that a similar strategy to that implemented in the Northern Territory by the Australian Quarantine and Inspection Service's (AQIS) Northern Australia Quarantine Strategy (NAQS) can be developed in the Kimberley. In the NT, where 70 percent of the coastline is owned by Aboriginal people, NAQS scientists have been delivering practical training in procedures for the collection of specimens (Charles Darwin University website <www.cdu.edu.au>). Aboriginal people are paid for their work and the long-term aim is for Aboriginal people to play an integral role in surveillance, sampling and monitoring.

The Kununurra position was advertised in 2003 but not filled. The position was to be re-advertised in 2004.



Passionfruit weed



Noogoora Burr is common in the Kimberley region (photo courtesy Noel Wilson, AgWA)



Ephrem Kennedy with passionfruit weed, Buttons Crossing, 2003



Noel Wilson (AgWA) talking to Miriwoong rangers about weeds and feral pests, 2003

Ord River Irrigation Area

The project was conceived and executed without reference to or recognition of the rights and interests of Aboriginal people in the region. No consultation occurred with traditional owners and apparently no thought given to the impact that a development of this scale would have on Aboriginal people. (KLC 2004, p. 2)

The Committee accepts the view that, in some measure, the development of the ORIA 'has been destructive to the life and religion of the Aboriginal people living in the area' (Moongoon Darwung submission) and that the flooding in the Argyle area has destroyed and irrigated land of sacred and traditional value to Aborigines (Department of Community Welfare). (Commonwealth of Australia 1979, p. 106)

History

The genesis of the present Ord project can be traced back to the mid 1930's when the practicality of developing tropical agriculture in the Kimberley region, based on the damming of the Ord river, was first discussed as a serious economic possibility. (Commonwealth of Australia 1979, p. 14).

Research into the viability of using the Ord River for agricultural and horticultural purposes began seriously in 1941 with the establishment of a small experimental farm on the banks of the lower Ord River. This was later abandoned for the Kimberley Research Station (KRS) in 1945 as a joint Commonwealth and State initiative (Government of Western Australia 1994, p 11). Crop trials demonstrated that linseed, cotton, rice, safflower and sugarcane grew well and the Western Australian Government was convinced that an irrigation scheme would be economically viable. KRS is now known as the Frank Wise Institute (FWI) after a former Premier and Minister for Agriculture and Lands in Western Australia.

The Ord development was in three main stages. The first with the construction of the Kununurra Diversion Dam at a cost of approximately \$20 million, with the Commonwealth contributing \$12 million (Government of Western Australia 1994, p 11; AgWA 1995, p. 5). This first stage opened up farms on the Ivanhoe Plain. The second stage saw the construction of the Ord River Dam, where the Ord entered the Carr Boyd ranges, at a cost of \$22 million. A further 2000 ha of land was developed on Packsaddle Plain. The third stage was the construction of the hydro-electric power station in 1995–1996.

The Ord River Irrigation Area (ORIA) has a history of approximately 44 years. The area was originally used to grow cotton in the 1960s and early 1970s. Despite the use of pesticides such as DDT to control insect pests, the cotton industry collapsed in the early 1970s. Alternative crops were investigated and the horticultural industry began to grow in the late 1980s. The sugar industry also solidified with the construction of a mill in 1995–1996. The area totals approximately 14,000 hectares of developed farmland. It produces an estimated \$63 million (WAPC 2000, p. 21) of produce per annum. The project is characterised by irrigated agriculture on cracking clay soils (Cununurra clay) and fertile loams (Ord sandy loam). Production has focused on producing high-value crops in the southern off-season.

The range of crops now grown includes sugarcane, leucaena for cattle, sandalwood, culinary grains such as chickpea and berlotti beans, maize, sunflower, horticultural crops including rockmelon, watermelon, mangoes, pumpkin and bananas (Kununurra Community 2000, p. 12).

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The development of the irrigation area had devastating effects on all aspects of Miriwoong and Gajirrawoong peoples' lives. The Kununurra Diversion Dam was built on *Darram* 'Bandicoot Bar', a special place for Miriwoong people. The damming of the Ord River meant that a huge area of Miriwoong country was drowned under Lake Argyle. The subsequent effects to the lower Ord River, including Lake Kununurra, have also had serious effects on the Miriwoong people. This modified environment has changed the entire landscape of the lower Ord River. The increase in riparian vegetation and the constant flow of water has had an effect on not only flora and fauna but also on the cultural landscape and the ability to carry on a way of life that was previously practised for many millennia.

At a 'Healthy Country' meeting held by the KLC in May 2002, Marjorie Brown spoke to Aboriginal people from across the Kimberley, and community and government-agency representatives about the impact of Lake Argyle:

Lake Argyle has taken away everything, all our sacred sites. Our old people didn't have a say in what happened here. We were moved off our country... Our old people are buried under that water. We have gained no benefit from the dam. It has changed the whole area – all the white sand beaches along the river are gone. Introduced plant species are taking over and we don't know what kinds of chemicals are flowing into our river. It is hard for people to access the river there are fences and we need to get permission from the Water Authority. We are not involved in any joint ventures and there are not many jobs for our young people....

The Western Australian and Northern Territory governments desire to expand the irrigation area under Ord Stage 2 will see increased pressure on both the natural and cultural values in Miriwoong and Gajirrawoong peoples' country. The main proponent of Ord Stage 2, Wesfarmers, withdrew in 2002, citing the poor international sugar economy and an inability to secure economic viability as primary reasons. Whilst some local people and the State Government were extremely disappointed with the withdrawal of Wesfarmers there were local farmers who were not unhappy with the withdrawal of the multinational company. There is a view amongst some local farmers that competition from a big company would provide too much competition for them. Some people would like to see Ord Stage 2 develop incrementally in a staged process and hold the view that crops such as sugar and cotton are not necessarily what the local industry wants (Anon. pers.comm.)

As pointed out in the Draft Environmental Impact Statement Summary produced by Wesfarmers, Marubeni and the Water Corporation in 2000 'ORIA Stage 1 was developed before environmental legislation existed in WA and as a consequence no single environmental plan exists' (2000, p. 5). Seventeen species considered rare and protected could be expected in the project area. Two species recorded are endangered, including the Derby white-browed robin, and the ghost bat is considered vulnerable (Wesfarmers 2000, p. 16).

The report by Barber and Rumley (2002) will contribute to the water allocation planning process. The water allocation plan (WAP) objectives are to provide for water for the lower Ord and environment; to determine remaining water for diversion for consumptive uses; to document decisions for how much water should be assigned for Stage 1 and Stage 2 developments; and to ensure that existing commitments and longer term demands for hydro-power generations can be accommodated and that a reservoir strategy can be developed (WRC 1999, p. 1).

A detailed social impact assessment was completed in March 2004 by the KLC on the effect of the ORIA on the Miriwoong people. This report has come after years of complaints about the impacts of Ord Stage 1. This report draws upon years of recommendations that have not been acted on. Further information on this report can be provided by the KLC.



Irrigation area, Kununurra, 2002. Photo by OBP

An interim draft WAP was released in 1999. EPA review of this draft concluded that the allocation for environmental flows was not adequate to protect the natural values of the area, and a scientific panel was appointed to advise and release a report in 2000 on interim ecological water requirements to be used in its revision of the Draft Interim Allocation Plan for the Ord River. The Waters and Rivers Commission has also commissioned other studies including the environmental flows initiative (EFI) study to consider the aquatic macroinvertebrate fauna of the Ord River.

The Waters and Rivers Commission is using the information from this report, along with information from the cultural values report, to produce a revised Draft Interim Water Allocation Plan that is more comprehensive and considers the ecological, cultural and social values of the Ord River (WWF, p. 126). The final water allocation plan must include traditional owners in considering the protection of the natural and cultural values of the area. This report has not yet been released.

Pesticides and water quality

The use of heavy-duty pesticides such as DDT (2,4,5-T) in the early stages of the development of the ORIA had effects on native flora and fauna and on domesticated species. The 1978 Joint State and Commonwealth ORIA Review points out that (Commonwealth of Australia 1979, p.113):

...in the past pesticide residues have been found in many bird and animals species in the area and appear to have been the reason for the temporary disappearance of the freshwater shrimp in the Ord River delta

Pesticide residue level in cattle grazed on irrigated pasture was for some time above that tolerated for the sale of cattle for export...examinations of the estuarine mud indicates that relatively high levels of residues still persist and are expected to decline only slowly.

Invasive species such as aquatic and terrestrial weeds are also highlighted as a problem, as well as the potential for insect-borne and bird viruses with the creation of more-permanent water bodies.

In more recent years, biological methods of controlling pests have been researched and introduced by certain farmers in the ORIA. The Department of Agriculture continues research into this. There is also the aim of integrated pest management (IPM) to reduce use of chemicals and instead use a combination of cultural, genetic, biocontrol and chemical methods. IPM is primarily used in the growing of cotton and work is needed to look at the relationships between different crops in terms of IPM (Kununurra Community 2000, p. 34)

The Ord Land and Water Management Plan (Kununurra Community 2000) is an excellent example of community initiative in attempting to address some of the issues in the ORIA. The plan 'started when some locals wanted to address the problems of rising groundwater in the irrigation area' (p. 1). The plan looks at the following issues: groundwater, irrigation efficiency, pest and pesticide management, chemical handling and storage, surface water quality, fish stock management, recreational river use, riparian areas, Dunham river, water allocation, surplus ORIA Stage 1 water, flood management, pest and feral animals, fire, weeds, off-property clearing, bush corridors, national parks and conservation reserves, native plants and animals, land-use planning, waste-water treatment plant, town rubbish tip and town drainage.

...the extent, and even the nature, of some of these problems can not yet be clearly defined, but the trends are convincing that without action land and/or water quality will be reduced in the future...the challenges is to continue to measure the impacts of our use of land and water in ways that enable new and improved management strategies to be developed into the future...

The OLW plan whilst comprehensive in detailing land-use issues and practices failed to include local Miriwoong people. This is an issue that is clearly recognised by OLW and under the SP5 capacity-building project there has been a determined effort to develop a relationship and dialogue between Miriwoong people and the OLW Coordinator. The KLC was supportive of the recent initiative of translating sections of the plan into Miriwoong and Kriol for airing on the radio.

OLW has also been an active party in meeting with and discussing Miriwoong people's concerns regarding water quality and other NRM issues associated with Lake Argyle and the lower Ord. The OLW coordinator is a member of the Aboriginal Steering Committee. Details of the issues raised in the meetings are discussed below.

It should also be noted that, as a consequence of the large number of fish deaths within the Dunham River and the Ord River in 1997, a water-quality monitoring program was established in 1998. The intent of the program was to 'monitor levels of chemicals and nutrients present in the water of the supply channels, drains and river' (WRC 2003). The North West Monitoring Program 1 (NWOM1) is jointly operated by the Ord Irrigation Cooperative (OIC) and the Waters and Rivers Commission.

Meetings with Miriwoong people

At most meetings with Miriwoong people somebody will raise an issue about the impact of the development of the ORIA. Concern for pesticides in the water is a prevalent issue. Community meetings have been held, and meetings with the Waters and Rivers Commission and Ord Land and Water. The first meeting to discuss these issues was held in June 2002 and the most recent on 29 July 2003, at which the following issues and actions were discussed.

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Issues

- Chemicals in the water
- Chemicals in the land and soil; does the DDT remain in the soil?
- Do the chemicals affect bush tucker?
- Do the chemicals affect the fish?
- The effect of aerial spray over the area, including the DDT that was used for cotton
- People are getting sick from the spray. People remember when they used to spray all through this area. They used to spray and it would smell. I still remember that smell and it makes me feel sick.
- Mercury in barramundi (article in the *Kimberley Echo*)
- Sampling fish for poisons
- Sampling other animals for poisons. Aboriginal people should be involved in this
- Spillway creek access
- Impact from Kingston Rest on the Dunham River
- Cumbungi on river, and water vines affecting access for fishing
- Is there any waste from aquaculture farms at Kingston Rest?
-

Actions

- Collect key issues and prioritise them so that they can be discussed and some resolutions reached
- Some sampling of fish and bush tucker with Miriwoong people involved along the river, including fish at Goose Hill
- Ongoing testing of water and fish.
- Public information, including brochures that provides information about
 - chemical spraying and spray drift
 - what chemicals are used, how they are disposed of and how dangerous they are
 - areas that are not good for swimming
- Check and test the dumpsites – drums that are buried at the foreshore of the Ord River near the campground. These chemicals that were dumped at these sites must be disposed of properly.
- Organise farm visits for traditional owners as soon as possible. Work out suitable farms with advice from Dick Pasfield, the coordinator of Ord Land and Water
- Need to get Water Corporation and Ord Irrigation Cooperative to the next meeting.

It was noted that there are two different issues in relation to chemical spraying: the spraying that was carried out in the 1960s and 1970s, and current practices.

As one Miriwoong lady stated:

Aerial spray used to go across the Reserve. They used to spray in large circles all around here. I still remember the smell from the spray. Even when I smell fly spray or anything like that it makes me feel sick.

A strong working relationship has developed with the KLC, WRC and OLW to work on progressing these issues. The KLC continues to liaise with the Department of Environment (WRC) about sampling of fish and animals and Miriwoong involvement in sampling. These issues have now been included as part of ongoing water-quality sampling and monitoring work currently under way in the ORIA.



*Salinity in the ORIA,
Packsaddle Plains,
Kununurra. Photo courtesy
OBP*

‘Ribbons of blue’ pilot project – Halls Creek

An East Kimberley ‘Ribbons of blue’ strategy was developed by the research coordinator with the State coordinator of the Waterwatch Program and local Waters and Rivers Commission staff. From this strategy, a Halls Creek ‘Ribbons of blue’ pilot project was developed and implemented, with funding from the Waters and Rivers Commission.

The need for a culturally appropriate program was highlighted at meetings and discussions with traditional owners conducted under the SP5 scoping study.

Aboriginal people have their own way of looking after and managing country, involving traditional cultural obligations and responsibilities. There is also minimal institutional support provided to Aboriginal people from the East Kimberley to learn more about NRM and to be involved in decision-making processes about the region’s resources.

The Halls Creek pilot project aimed to:

...reinforce cultural connections the Aboriginal community have with their environment, increase awareness of waterway values, pressures and management, enhance understanding of social and environmental impacts on the health of waterways and facilitate capacity building within Aboriginal groups and communities.

This pilot project will aim to use core Ribbons of Blue objectives and with the assistance of the local school and community members such as language specialists adapt the project through, for example language, art and music, to make it culturally appropriate and relevant to the local community’. (Nelson et al. 2003)

Objectives of the project

The pilot project met the following objectives:

- environmental education for children and adults in the Halls Creek area
- raising awareness on water quality and water ecosystems in the upper section of the Ord River catchment

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- strengthening the capacity of Aboriginal people in maintaining and protecting their waterways
- production of educational materials designed by children and adults using Aboriginal languages (Kija and Jaru)
- networking of community-based organisations, educational institutions, community groups, local government and government agencies within the upper section of the Ord River catchment to deliver and develop culturally appropriate environmental education
- production of a report of the pilot project evaluating its outcomes and detailing recommendations for further development of a 'Ribbons of blue' project for the East Kimberley and/or Kimberley region.

There was also a need for government agencies to develop their skills in working, engaging and collaborating with Aboriginal people. In the Ord River catchment area there are at least eight different language groups and the area is culturally diverse. There is no single, clear-cut way of working with people, and these processes should be developed from a bottom-up approach. This approach should be collaborative, inclusive and, most of all, participatory.

Ms Michele Martin, a language worker from the KLRC, was selected as coordinator for the Halls Creek pilot project. Planning sessions took place in September and October 2003 with the Halls Creek District High School and the Research Coordinator and Field Officer.

The Halls Creek District High School has been very supportive of the project. Field activities were delayed in 2003 due to the commitment of teaching staff and lack of water in the Halls Creek area. It was agreed that the activities would be best carried out after the wet season in 2004.

Successful excursions were carried out on 5–6 May 2004 at Caroline Pool on the Elvire River and in the Elvire River at Old Halls Creek.



Jane Rapkins and Michelle Martin planning the Halls Creek 'Ribbons of blue' project

Results

The following results were recorded by Jane Rapkins and Michelle Martin.

On 5 May three groups undertook visual site assessments at Caroline Pool, then tested the chemical and physical properties of the water. Aquatic macroinvertebrates (small animals without backbones) were netted and identified. All of these properties provide a good picture of how healthy the waterway is.

On Thursday 6 May it was the turn of Year 7 and 8 students to test the waters at Elvire River. One group monitored the waterbody below the concrete dam, and the other group looked at the bigger area of water held back by the dam wall.

The results are tabulated below, with some interpretations of what they mean.

They show that the three groups all agreed that Caroline Pool was in good health. The main concerns (lowest scores) related to litter, land use, human use and animal life.

At Old Halls Creek, the ‘Bream whatever’ group assessed the site upstream of the dam wall. This site had more water, more vegetation and less litter than the site below the dam and this is reflected in the difference of scores. The section of the Elvire River above the dam was given an excellent rating, and the action recommended is maintenance of this site. Below the dam, there was a lot of litter, including cans and nappies, and the rating of the site by the ‘Blue group’ was medium.

VISUAL SITE ASSESSMENT

Categories scored 0–5, with 5 being healthy and in a close to natural state and 0 being highly disturbed or impacted.

RESULTS:	Caroline Pool			Old town		
Category	Glory girls	Boyz	Michelle’s group	Blue group (below dam)	Bream whatever (above dam)	Average
Vegetation	4	4	3	3	4	3.6
Water	5	4	4	3	5	4.2
Smell	4	5	5	5	5	4.8
Banks	3	3	4	3	5	3.6
Animal life	3	3	3	3	5	3.4
Litter	3	2	3	0	3	2.2
Pipes/drains	5	5	5	5	5	5.0
Land use	2	3	3	3	3	2.8
Human use	3	3	3	3	2	2.8
Feel	4	3.5	3	0	3	2.7
TOTAL	36	35.5	36	28	40	35.1

Score	0–9	10–19	20–29	30–39	40–50
Rating	Very bad	Bad	Medium	Good	Excellent
Action	Get involved and help improve the condition of the waterbody or start an action project.		Further investigation is required and may include a water-monitoring program.	Ensure the maintenance of this site for its long-term sustainability.	

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The water quality results were close to expected, with none of the results likely to be limiting to animals living in the water. It would be interesting to conduct these tests at different times of the year as the results will likely change throughout the season.

WATER QUALITY: PHYSICAL & CHEMICAL TESTS

RESULTS:	Caroline Pool			Old Town		
Parameter	Glory girls	Boyz	Michelle's group	Blue group (below dam)	Bream whatever (above dam)	Average
Time	11.10	11.15	11.15	11.15	10.45	11.00
Temperature (°C)	23	28.5	27	28	25	26.3
Turbidity (NTU)	<10	<20	<10	<20	<10	<14
pH	8.6	8.4	8.7	7.7	8.5	8.4
Conductivity (µS/cm)	490	520	490	500	490	498

The success of the pilot project will see this work continue in Halls Creek and extend into Warmun and Kununurra in line with the East Kimberley Strategy. The Australian Government's Natural Heritage Trust will fund this work.



Halls Creek school students testing for macroinvertebrates, Old Halls Creek. Photo by Jane Rapkins



Halls Creek students testing the water at Caroline Pool. Photo by Jane Rapkins.

National Action Plan for Salinity and Water Quality

The Ord River is a priority region under the National Action Plan (NAP) for Salinity and Water Quality. Funding for the Ord region would be through the NHT process and the Interim Rangelands Coordinating Group. The NAP allows for approximately \$60 million of funding from the Australian Government to Western Australia over a six-year period. The Ord region is not one of the five priority areas in WA. The majority of the funding will be directed in the south-west, where salinity is now an enormous problem.

The research coordinator and field officer met with the senior policy and program manager of the NHT/NAP in Kununurra in 2003 together with Ord Land and Water and stressed the importance of involving Miriwoong people in any initiatives for funding in the Kununurra region.

It is understood that the Ord Irrigation Cooperative and the Waters and Rivers Commission have submitted a funding application for pre-planning work from the NAP. Miriwoong people should be involved in this process and, where possible, in any on-ground research activities in the future.



Peter Brown, Ruth Ward, Marjorie Brown, Shannon Ward on Pumpkin Island, Lake Argyle, 2003. Traditional owners want rangers on the Lake and surrounding land.

Communication activities to date

The Miriwoong rangers completed a report from their first-term training in 'Introduction to Landcare'. This is now available as an A3 report and has been distributed to local agencies in Kununurra and community groups including the Shire of Wyndham–East Kimberley, Ord Land and Water and the Waters and Rivers Commission.

Under the capacity-building program, an application for funding was submitted under the NHT Envirofund to produce a video on Aboriginal management and planning for country, as requested by the Aboriginal Steering Committee established under SP5. This application was successful and it was planned to produce this video during 2004.

Aboriginal Management and Planning for Country Steering Committee

Under the OBP, steering committees were to be established for each subprogram. The formation of the Aboriginal Steering Committee took more time than originally anticipated. Interestingly, it is one of only two working steering committees of the OBP. The local steering committee for the pesticides project is the other.

The concept of a committee feeds directly into issues surrounding *representation* and who can talk for country. To have a committee that is truly representative, one would include all the appropriate traditional owner groups within each group. For example, there are approximately 12–15 different groups to be represented within Miriwoong alone. If this were to be done for each group then the committee would be very large.



Judy Butters, OBP Aboriginal board member at an Aboriginal Steering Committee information session in May 2003

The formation process of this committee demonstrated clearly that people cannot talk for somebody else's country and do not want to appear to be doing so in the eyes of the wider community. It is understood that while issues on country may be different there are core principles that Aboriginal people across the catchment are all working to achieve.

The committee currently comprises about 25 people, but this can vary from meeting to meeting. Committee meetings are held in different towns in the catchment and the committee has agreed that the more people that want to come and listen the better!

At the most recent steering committee meeting on the 17–18 November 2003 it was recommended that the committee maintain itself over the next two years and continue to be a strong voice for Aboriginal people in the Ord River catchment through the post-OBP project.

The following describes the process of establishing the steering committee.

Meetings for Steering Committee representation

The first meeting of the Steering Committee was held on 17 September 2002. The meeting discussed and agreed upon the following.

Agenda of meeting

- What is the steering committee for?

Aboriginal Management and Planning for Country

- Who will be on the steering committee?
- How often will the steering committee meet?
- Who will be the chairperson?
- What will be the rules of the steering committee?

What is the purpose of the Aboriginal Steering Committee?

OBP chief executive officer Brian Prince explained the Ord–Bonaparte Program (OBP) and said that the role of the steering committee was to support projects and provide feedback to Kylie Pursche and Judy Butters on project progress. He went on to say that the program intended for Aboriginal people to have a say in NRM and to provide knowledge and assistance to look after country.



Brian Prince (OBP CEO), Reg Birch, Margaret Birch, Rosie Stretch, Milton, Felicity Smith at Warmun 2002

Who will be on the steering committee?

The steering committee was called the ‘OBP Aboriginal Management and Planning for Country Steering Committee’. The following were among the many different alternatives for participation discussed:

- getting a male and female representative from every community
- getting representation from every language group
- getting representation from different places along the Ord River
- getting an old person and young person perspective.

It was decided that representation from each and every community would result in an unworkable number of people involved in the steering committee. It was also decided that people should be involved only if they are enthusiastic and willing to attend all of the meetings.

For practicality, Judy Butters, Aboriginal board member, suggested that the Ord River catchment be divided into three sections – upper, central and lower – and that we have a number of representatives from each section. This was generally agreed upon, with six to eight representatives from each section seen as a workable number. The effort would be made to have equal numbers of male and female representatives and also to get representation from each of the major language groups.

It was agreed to hold meetings in each of the three areas – upper, central and lower Ord – to determine who the representatives would be. Flyers would be distributed in each area to advertise the meeting purpose and dates. Judy Butters will be present at all of the meetings, including at the

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election of representatives. Subsequent meetings would be held at various locations across the catchment.

Towns	UPPER	CENTRAL	LOWER
	Halls Creek Warmun	Kununurra	Wyndham
Languages	Jaru Kija	Miriwoong Gajirrawoong Woolah	Miriwoong Dulbung Gajirrawoong
Boundaries	Lissadell to Halls Creek	Lissadell to Kununurra	Wyndham

Government and non-government organisations were to be invited to steering committee meetings on an as-needs basis. Certain government departments such as the:

- Water and Rivers Commission,
- Agriculture Western Australia,
- CALM
- Department of Minerals and Petroleum Resources
- Fisheries

are to be formally invited to make a presentation to the steering committee answering the following questions:

- How is the department addressing concerns of Aboriginal people as outlined in the strategic plan (to be developed by the steering committee)?
- What methods does it employ for consultation with Aboriginal people?
- Does the department involve Aboriginal people in decision-making?
- How are Aboriginal people participating in what the department does?

Other organisations which could be involved in or support the program were identified as ATSIC, ADM, the ILC, the DIA, Department of Land Administration (DOLA), and Indigenous Business Australia (IBA).

Communication from other subprograms was discussed, and the need for updates to be provided to the steering committee of progress and integration in other subprograms.

Other issues raised

During discussions there were several issues raised that were not part of the formation of the steering committee but provide an indication of some matters of concern to Aboriginal people in the catchment. These included the following:

- Paul Butter from Purnululu told the meeting that *...issues to do with joint management of the national park had not yet been resolved*. He sees it as the community’s responsibility to look after the Ord River but it needs help from the government to monitor the site, help eradicate feral animals, train rangers etc. Paul would also like to be able to hunt and burn on his country and have these rights written into the Purnululu management plan. He sees a park council as the only thing to join the gap between government and the community. He now has access to country and is interested in being involved in OBP so that he can manage the fragile country better.

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- Polly from Bedford raised the issue that...*the funding for the schools was very important, but that funding was not given unless the method of teaching was in a Gardiya way. She sees a need for old people to teach in an Aboriginal way in the bush. To do this people need access to the country – they need to be there.*
- Reg Birch agreed saying that...*there had been a huge displacement of culture and that the state government had chosen not to be involved by not supporting on-the-ground culture.*
- Judy Butters said ...*the departments are not helping and therefore we need to support enterprise otherwise we will starve and die. Judy also made the comment that the people who carry out fishing enterprises are leaving dead fish and turtles on the banks at Bow River junction.*



Felicity Smith, Shirley Drill, Queenie Malgil, Paul Butters, Rammel Peters

Judy Butters suggested that it would be a role of the steering committee to get together a plan outlining the NRM issues in the region that are of greatest concern to Aboriginal people; i.e. a 'wish list'. From there, investigations can be made through government and non-government agencies as to how these issues are being dealt with. Aboriginal people can then decide which areas need to be researched further and make those recommendations to agencies for funding.

Community meetings

Central – Kununurra

About 30 Miriwoong Gajirrawoong people attended the KLC annual general meeting in 2002. On 31 October, the research coordinator held a meeting with Miriwoong Gajirrawoong people to discuss representation on the steering committee.

Outcome. The people at this meeting were not comfortable to make a decision about representation as not all Miriwoong people were present. It was agreed that another meeting would be held in Kununurra to discuss representation. It was agreed, however, that representatives should have both old and younger people on the committee and both male and female.

On 12 November, a meeting was held at Waringarri Aboriginal Corporation to discuss representation on the steering committee.

Respecting and sharing traditional knowledge

Outcome. At the meeting it was agreed to elect interim representatives for the steering committee but people would like to have a larger workshop to elect representatives with all Miriwoong people present. Seven community people were elected as interim representatives.

Upper – Warmun

A meeting was held at Warmun Council on 13 November.

Outcome. At this meeting it was agreed that approximately eight people would be representatives on the committee.

It was also agreed at this meeting that the next steering committee meeting to be held in Kununurra would be for Aboriginal representatives only, so that people would have time to talk about what they want from the steering committee as this will be the first time that they are all together.

People also discussed the attendance of the ILC and were very keen to talk to the ILC about the purchase of the E.G. Green Stations. People were happy for them to come for a short time only, but for the main focus of the meeting to be for all Aboriginal people to talk about what they want from the steering committee and to get a good understanding of what it is designed to do.

It was also agreed that Purnululu Aboriginal Corporation and Bow River may like to represent themselves separately.

Upper – Halls Creek

Kija people from Halls Creek were represented in the Warmun meeting. Smaller meetings were held with Jaru people who decided on eight people for the committee.

Jaru people wanted the next steering committee meeting to be an opportunity for:

- Aboriginal people to get together to talk about the steering committee
- discussion about who else should be on the committee
- what government representation should be on the committee
- the role and responsibilities of committee members.

Lower – Wyndham

Meetings and discussions with Joorook, Ngarni and Balangarra representatives have culminated in the representation of people from this area. As none of the projects are currently working with people from this area people feel that the work is not relevant to them. It was hoped that with the continuation of the OBP work this would change.

Aboriginal Management and Planning for Country Steering Committee meeting, Wednesday 20 November, Kununurra 2002

The steering committee meeting was held on Wednesday 20 November in Kununurra. This was the first full meeting of representatives. The meeting discussed concerns that people have about country.

Aboriginal concerns and issues

- Ownership and use of country with other people or interest groups
- Access to country
- Government is not talking or engaging with traditional owners about country and what people want to do about it

Aboriginal Management and Planning for Country

- Too many crocodiles in upper Ord – eating fish stocks
- People in government have never worked with Aboriginal people before
- Fish kills – Bow River junction and other parts of Ord River
- Aboriginal people want their say in land management and planning
- Government departments need to improve how and where they involve Aboriginal people in their projects, policy and resource application
- Government needs to provide more funding to help
- Aboriginal people to be involved in caring for country
- Making government think differently when dealing with Aboriginal people
- Traditional owners for country not getting direct benefit from country
- Funds are needed to get Aboriginal community rangers skilled and trained-up to help manage and look after country; e.g. Lamboo wants rangers
- Traditional owners want to assist in managing impacts to country; e.g. tourism, mining, pastoral, agriculture, fisheries, shire
- Problems with pollution to river and waterways
- The need for policy change that benefits Aboriginal people
- Should be more cross-cultural programs.



Tom Birch, KLC Chair, talking at the Steering Committee meeting, November 2002

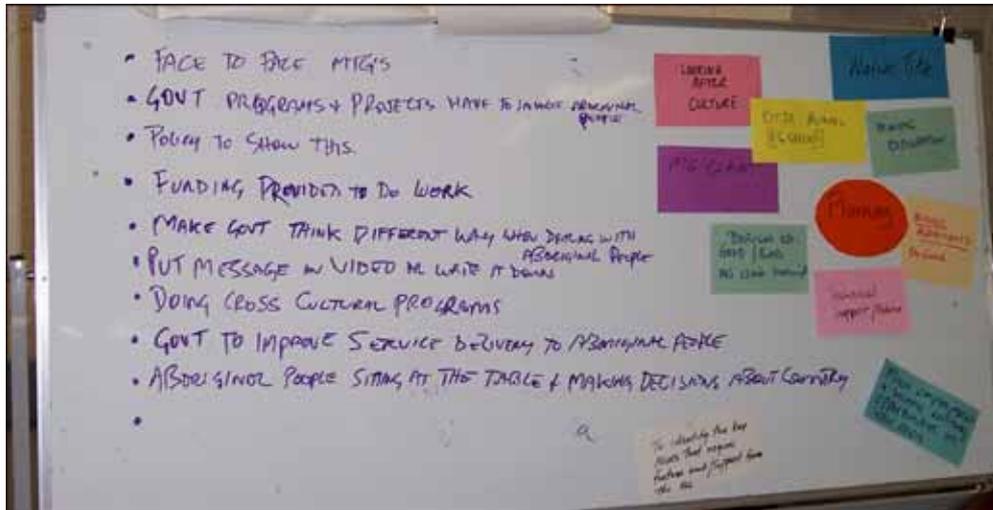


Bruce Wungundin, Stan Brumby, Mona Ramsay, Chocolate Thomas, Gordon Barney, Shirley Purdie, November 2002.

Issues and outcomes from the Steering Committee, November 2002

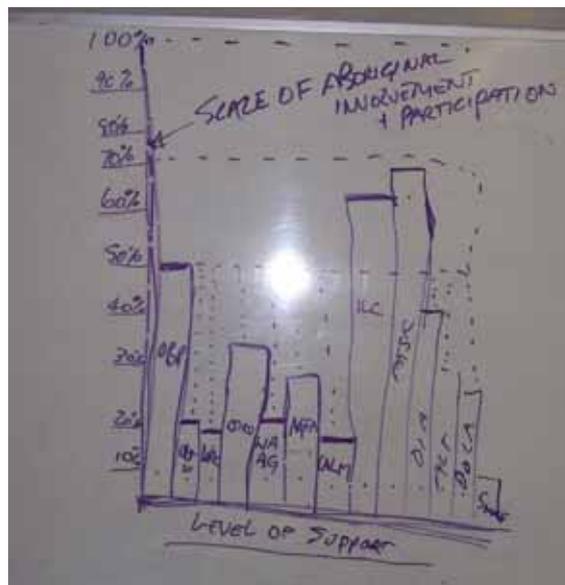
Actions agreed for the next meeting

- Next steering committee meeting should be for two days.
- First day Steering Committee meeting with Aboriginal people only.
- Second day workshop with government agencies, other subprogram researchers and industry/ interest group representative from other subprogram steering committees. This should be held in mid to late February 2003. The coordinator will send out a letter of invitation to agreed government agencies with the list of questions that were developed at the steering committee meeting in Warmun and ask them to present around these issues. Agencies to be invited to present include AgWA, CALM, Waters and Rivers Commission, Indigenous Land Corporation, Fisheries, Department of Indigenous Affairs and ATSIC. The coordinator will also invite researchers and key industry people from other OBP steering committees. Location will be determined in February, dependent upon weather.
- Meeting to be held in Kununurra, so government agencies can come.
- Judy Butters, Aboriginal board representative, talked about presenting issues for the particular programs. This will be discussed on day 1 of the next meeting.



Issues and outcomes from the Steering Committee, November 2002.

This is a photo of a diagram used in the discussions. The graph talks about the percentage scale of Aboriginal involvement and participation in government agencies. The graph is **not** accurate but aims to show that Aboriginal participation has a long way to improve.



Other issues

- People agreed to there being a second person on the OBP board. It should be a male for even representation.
- Participation (sitting) fees
- Everybody also agreed that they would like to make a video to show OBP board members and other agencies/organisations that they support the Aboriginal program and talk about aspirations for country.

Information workshop, Kununurra, 12 May 2003

An information workshop was held with the Aboriginal Steering Committee at Waringarri Resource Centre on 13 May 2003 as an outcome of the previous meeting. This workshop involved traditional owners from Halls Creek (Kija and Jaru), Warmun (Kija), Bow River (Kija), Violet Valley (Kija), Molly Springs (Miriwoong), Kununurra (Miriwoong) and Lake Argyle (Miriwoong).



Glennis Newry, Blanche Flying Fox, Nancy Dilyai, Pamela Simon, Marjorie Brown, Josie Ward and Alan Padgett (Indigenous Land Corporation) at the information workshop in May 2003



Stan Brumby from Halls Creek and Jeff Janama from Kununurra, Jenny Bellamy from CSIRO in the background



Pamela Simon tells people about concerns she has for tourists going into places when they have not been welcomed to country

This workshop was a general information session for Aboriginal people to learn more about what local State land management agencies do, and for other community groups, agencies and non-government organisations to hear first-hand about some of the issues that Aboriginal people are concerned about.

Agencies and non-government organisations that attended included the Waters and Rivers Commission, AgWA, Ord Land and Water, the Indigenous Land Corporation, the Kimberley Development Commission, the Worldwide Fund for Nature, the Department of Indigenous Affairs, and Conservation and Land Management.

The general feedback from this workshop was that it was a milestone for the local community by bringing together both Aboriginal people from the Ord River catchment and government NRM agencies to listen to and learn from each other. It was acknowledged that the workshop should not be seen as one-off and that agencies want to continue to be involved with the steering committee.

Steering Committee meeting 17–18 November, Warmun 2003

This meeting talked primarily about the research projects and changes to the OBP. The meeting also discussed the proposal from LWA to continue reinvesting in the region after the finalisation of the OBP. In late 2003, LWA approached several organisations to see if there was sufficient local support and interest to continue the investment in R&D which had started under the OBP. A draft research proposal for 2004–2006 was developed with input from, in particular, the KLC, AgWA, the CRC for Tropical Savannas Management and the ILC. This post-OBP proposal came to be called ‘Integrated cultural and natural resource management options for pastoral land in the East Kimberley’. LWA was the major funder of the proposed research and, at its December 2003 meeting, the LWA Board approved the funds asked for. The November meeting of the Aboriginal Steering Committee was an opportunity for the KLC to discuss the draft proposal.

The following is a list of the key points and outcomes.

Kija and Jaru plants and animals

The research coordinator provided an update of the project and showed Glenn Wightman’s report. Photos taken by both Glenn Wightman and Kylie Pursche were on display, as were posters that had been prepared.

Outcomes from the May 12 Information Workshop

- ▶▶▶ **Water Quality:** concern about what comes off agricultural land
fish effects
what's happening in the water

And these issues arise because we are missing aboriginal knowledge and questions.

- *Requires WRC (who gets water/water quality)*
- *OBP*
- *OLW (community group)*
- *Water Corporation*

**To come together with
Traditional Owners**

These people are probably already talking, but need to get Aboriginal people on board.

Recommendation: Meeting to be held with all these organisations and Miriwoong people.

- ▶▶▶ **Problems from mining** – Industry and resources need to look at this. Leith is happy for people to approach him on concerns to do with this. We also need DIA to be involved in order to simplify things for the mob, so they don't have to talk to too many agencies.

- ▶▶▶ **Ranger training.** Aboriginal people want to see how others are working on controlling weeds/animals/ fisheries etc. through an education tour. Need to identify participants.

- ▶▶▶ ILC: East Kimberley has missed out in the past, but now put your hand up to say how he (AP) can help.
 - Identify a priority list
 - Sub regional overview of properties already exists but now new rules exists so this needs to be reviewed to ensure you don't miss opportunities in the future.
 - Enterprise. Helping develop new industry on land by capacity building, and development aid.
 - Land management – links back to ranger training.

These are linking issues of looking after country:

- *social*
- *cultural*
- *economic*

Should all be together

- ▶▶▶ **Weeds:** there is a real possibility for aboriginal training and development with the joint position with the Weed CRC, Dept. of Agriculture, ILC, and the KLC. Maybe Australian Government training packages have funds for increasing employment opportunity as well. It is possible, too, to develop strategic links with employment programs e.g. mining companies.

Respecting and sharing traditional knowledge

Outcomes

- People recognise that this is very important work and that it should be continued.
- LWA should be approached for funds to complete this work or to help finish the project report.
- People would like to see the following information products: CD-ROM, booklets, information pamphlets and video. It was agreed to approach Rio Tinto, Argyle Diamond Mine, WA Education Department, ATSIC/ATSISS, DIA, KLRC Halls Creek and other agencies and organisations that might be able to help.
- The committee supports the need for more work to be carried out by a linguist and biologist to finish this work.

Data management, cultural mapping and GIS

Cultural mapping database

- This to help ensure data are collected and stored properly and can be accessed by traditional owners.
- There would be protocols for access, and restrictions on who can use the information
- Transmitting information to younger traditional owners is very important.
- Greg Mules held a workshop in Warmun last December 2002. This workshop developed the idea with people. The meeting supported ongoing development of the project.
- The ground mapping work at Violet Valley is part of this project.
- This will be worked on in 2004 under the post-OBP proposal.

The research coordinator made a PowerPoint presentation on the cultural mapping database to the Aboriginal Steering Committee meeting. The audience included government agencies such as AgWA, Waters and Rivers Commission and Ord Land and Water. The conceptual framework and intentions of the database and GIS system were favourably received.

Key outcome

- People supported this work and said that it must continue as it is a priority for the ongoing collection and transmission of law and culture for our mob.

Capacity building and two-way learning

A summary and update of activities was provided including: the ranger work; the CRC Weeds Aboriginal Liaison Officer position; production of posters; the Halls Creek 'Ribbons of blue' pilot project; a funding submission to produce a video with committee members with NHT money.

Outcomes

- People felt very strongly about the need for capacity-building activities to be involved in NRM.
- They supported the ongoing development of Aboriginal rangers in the East Kimberley and want to be able to visit other Aboriginal rangers across Australia to see what they are doing and get ideas from them
- Aboriginal ranger positions should be full-time and paid.
- Government and non-government agencies need to develop this further, in consultation with Aboriginal groups in the East Kimberley.
- People support the CRC Weeds officer position at KLC Kununurra.
- They support the 'Ribbons of blue' program within schools and the Halls Creek pilot project.
- Water is a very important resource and people want to be involved in monitoring it.
- Committee members are excited about the video and would like this work to be carried out next year if funding is successful.

Post OBP Proposal

Kylie talked about the OBP mid-term review, reporting that the key outcome of this was that the OBP would be finishing in December. Nevertheless, LWA was very happy with the work of the Aboriginal program. This was good news for us, but unfortunately the work would not be continuing across the catchment. KLC had talked with LWA about the new proposal, which would work mainly on pastoral stations. LWA understood that the work of this committee was very important and that even though the majority of work will be focused on pastoral stations the steering committee should continue.

Discussion also focused on the lack of support of government NRM agencies to the OBP and its aims and objectives.

Outcome

- Steering committee members were disappointed that the OBP would not be continuing in its full form.



Kylie Pursche giving presentation about the cultural mapping database



Photo of most of the participants, Steering Committee meeting, November 2003

Respecting and sharing traditional knowledge

- Steering committee members were disappointed that government agencies couldn't support the work of the OBP, in particular SP5 as this work is very important to them and gives them a voice.
- It was recommended that a letter be written to LWA stating that the Aboriginal Steering Committee was concerned that government agencies are making decisions without their input.

East Kimberley regional Aboriginal natural resource strategy

A report including everyone's country and a summary of issues drafted by Kylie was distributed at the meeting and discussion took place raising some important issues. People were shown a report from South Australia where Aboriginal people have produced a report showing maps of country, what people want to do on country and listing key land-management issues are. Kylie modelled the layout of this report on that.

Outcome

- People support the work that has been completed but were concerned about putting on the map just where people said their country is. Their concern was that it might cause arguments between people if a map were produced showing specific areas. The report should have a map of the EK area, pictures of country (plants/animals), names of places and documentation of cultural and NRM issues from the area.

WWF – Ord Values Study

Tanya Vernes talked about the Ord Values Study undertaken by WWF. This was mainly a desktop study.

Outcome

- The Aboriginal Steering Committee would like to see this study. The report will be sent to the committee to consider.



Patrick Mung Mung, Patrick, Chocolate Thomas, Steering Committee, November 2003

Other issues raised

- The Aboriginal Steering Committee should be a strong voice in arguing for our involvement in land management and planning. We should be shown respect, and help with making decisions.
- Getting people involved in Aboriginal ranger work is good but will need a commitment by government for it to happen.
- The Argyle Diamond Mine should assist with developing Kija aspirations in NRM as part of the new agreement concerning native title.

Aboriginal Management and Planning for Country

- We should try to get Aboriginal rangers started through CDEP and ask for support from government.
- Why do work at Carlton Hill when the owner of the place is very rich and can pay for this work himself? Aboriginal people are concerned about looking after country for the future.
- People support the posters developed by this program and want more information to be produced and distributed in the broader community; e.g. looking after country better, cleaning up rubbish, looking after water better, not to swim in bad water or farming channels.
- Young people need to be taught and trained for what we want to do in communities with rangers.
- People said that Aboriginal people need to support these programs as the Research Coordinator has worked hard to get them started.
- It needs to be recognised by all stakeholders in NRM in the EK that the Aboriginal Steering Committee plays an important role in the management and development of Aboriginal NRM. It wants this to be recognised in the current management structure set up by government.
- Why have a committee if government and stakeholders don't consult with us?
- Ensuring capacity-building is a priority for government and non-government agencies.
- How can we overcome the barriers currently facing Aboriginal people in NRM?
- Aboriginal people do not want to be treated as token in any of this work.
- Aboriginal people are concerned about the cane toad coming in from the Northern Territory and want to know if government has any action plans?

Public communication activities

Several external communication activities were carried out by SP5 to communicate the work of the program to the broader community. Some examples are given below.

NAIDOC day events, 1 July 2002



NAIDOC day stall where information about SP5 and the OBP was distributed on the KLC stall

Landcare conference

A SP5 poster and abstract was displayed as part of the National Landcare Conference in 2003.

Newspaper articles

Articles about Miriwoong ranger training were published in the local *Kimberley Echo*.

Ag Show, 26–27 July 2002



OBP information stall at the agriculture show including SP5 material

LWA

Audio CD, *Answers to environmental questions*, 2003. The CD was distributed to radio networks.

Outcomes and achievements of SP5

Summary

The issues of concern to Aboriginal people have been raised throughout this report. The work through SP5 has achieved a number of significant outcomes:

- building relationships with traditional owners from the Ord River catchment
- a better understanding of the cultural diversity and make-up of the catchment area
- a better understanding of the challenges to implementing field research activities in the East Kimberley
- development of models for two-way learning and capacity-building
- understanding institutional factors that can impede research and Aboriginal involvement in NRM
- establishing an understanding of the organisational framework in relation to NRM in the East Kimberley
- identification of key land-use issues and concerns from Kija, Jaru, Miriwoong and Gajirrawoong peoples
- formation of a strong Aboriginal Steering Committee for the Ord catchment, including people from Halls Creek, Warmun, Kununurra and Wyndham.

Priorities of Jaru, Kija and Miriwoong

Jaru

There are several native title claims registered in the Halls Creek area, including Lamboo, Koonjie/Elvire and Moola Bulla.

The following are priorities for Jaru people in the Halls Creek area:

- ethnobiological work – recording information for plants and animals
- publication of information products from the ethnobiological project including a book on plants and animals, posters for educational and community use and to sell to tourists
- interpretation and signage in the Halls Creek township acknowledging Aboriginal cultural values and knowledge
- water-quality issues in local swimming and fishing places
- environmental impacts from mining, including dumping of rubbish and water contamination
- development of ranger programs on pastoral properties and in the town area
- identification of key land-use and land-management issues
- development of a video talking about country and showing bush tucker and bush medicine
- recording of knowledge for future generations
- ‘Ribbons of blue’ pilot project to continue with NHT funding.

Kija

There are two native title claims in Kija country: Malarngowem and Purnululu.

Kija people have been actively trying to negotiate land tenure issues for over 20 years. In particular, in the Warmun area there was an application to the Indigenous Land Corporation in 1996 for the purchase of the six adjoining E.G. Green pastoral stations. As part of this application, a *Kija Community Liaison and Land-use Planning* report was carried out in 1998 by the Agency Working Group and also a *Land Acquisition and Access Strategy* 1998 and an *Acquisition Proposal for Six E.G. Green Properties in the East Kimberley* 1998 by the Kimberley Land Council.

Respecting and sharing traditional knowledge

These documents highlight the aspirations of Kija people and are still applicable today, even though the six stations have recently been sold (2002, 2003) and are now under different ownership. Information provided in these reports, together with consultations under SP5, supports the following priorities:

- purchase of six pastoral stations – Mabel Downs, Texas Downs, Lissadell, Alice Downs, Springvale
- development of cattle enterprises
- access to country to carry out ceremonial and lore practices
- access to country for hunting, gathering and fishing
- development of tourism enterprises particularly on Alice Downs adjoining Purnululu, Osmond Valley, Violet Valley, Lissadell, Texas Downs and Springvale
- ethnobiological work – recording information for plants and animals
- educational and community activities – taking young people onto country and teaching them about their country, bush tucker and bush medicine.

In the area closer to Halls Creek are the main stations of Bedford Downs and Moola Bulla. Kija people living in Halls Creek have expressed their desire to get country back, access country and establish living areas. Recently, a significant portion of land was excised from Moola Bulla for people who were removed in the stolen generation.

There are living areas at Bedford Downs, the main one being Dolly Hole. Traditional owners have expressed a desire to establish a living area closer to Elgee Cliffs. The Tablelands Track was once a popular track for 4WD enthusiasts but this has recently been stopped because of concerns at the state of the road and damage to the springs. Traditional owners have expressed concern that they would like to be able to use this road as it provides a shortcut for them when they have to go to funerals or visit country.

Miriwoong

There was a recent consent determination for native title for land in the Kununurra area and there is also the Miriwoong Gajirrawoong Native Title Claim No. 2.

Miriwoong people have aspirations similar to those of Kija and Jaru people, including:

- tenure resolution
- joint management of national parks, conservation reserves and other relevant vacant Crown land including land and islands of Lake Argyle, Lake Kununurra, Mirima National Park, lower Ord wetlands
- ranger training and employment programs
- CRC Weeds Aboriginal Liaison Officer position to progress
- development of joint ventures, particularly on and near Lake Argyle
- interpretation and signage on local waterholes to educate and inform tourists of Aboriginal cultural values
- interpretation and signage concerning Lake Argyle and key points on the Ord River
- protection of cultural heritage sites including rock-art sites
- promotion and maintenance of language and culture initiatives
- recording of traditional and ecological knowledge
- water-quality issues and pesticide use in the ORIA
- involvement in discussions and decision-making processes about the expansion of the ORIA
- habitat and wildlife protection.

Challenges and constraints

The challenges to the program can be summarised as follows:

- the large geographical area that constituted the OBP study area
- cultural complexity and diversity
- gender issues and cultural implications; men cannot talk about women's issues and women cannot discuss men's issues. There are also cultural considerations for field officers; some male field officers cannot talk to certain women, for example a mother-in-law.
- lack of support and integration with other research
- the locations of researchers – Perth, Hobart, Canberra, Townsville, Brisbane, Darwin.
- a shared understanding of integration
- time frame of OBP was initially 5 years
- competing demands
- uncertainty about future of OBP
- lack of capacity in communities
- whitefella ways of doing things
- lack of resources to agencies to implement employment and training initiatives
- remote location, easily ignored by southern-based government agencies.

Suggestions for overcoming difficulties

The following ways are suggested to help overcome the above-mentioned challenges and constraints:

- more investment of resources into the area on a catchment basis – seek new investors
- East Kimberley Aboriginal regional strategy document to be completed
- Aboriginal Steering Committee continues as a key reference group
- key researchers should be based in region, or spend fair periods of time in the area
- employment of both men and women as researchers, coordinators and field staff
- KLC needs financial support to build up its institutional capacity
- seek agreements with suitable universities, philanthropic organisations, Cooperative Research Centres
- link into Natural Heritage Trust processes.

Community engagement in native title and other business

In the East Kimberley area there is a range of large projects that consume the time of, particularly, the Kija and Miriwoong peoples. One of the biggest issues working on the ground and planning field research is the competing demands that are made of traditional owners from both within the KLC and also from external agencies.

The priority of the KLC and traditional owners is to progress native title claims and, in this context, meetings and work that must be carried out for this take priority. This also includes timetables that are set by the courts that cannot be changed.

Warmun

Since late 2001, Kija people have been involved in one of Australia's biggest negotiations concerning mining with the Argyle Diamond Mine. The signing of a memorandum of understanding between KLC and the mine and working towards traditional owners settling an agreement is a priority of traditional owners. The mine is the world's second-largest diamond mine and has been operating for over 20 years without a proper agreement in place with traditional owners.

Respecting and sharing traditional knowledge

The intensive schedule that has been established to reach an agreement occupies a great amount of time of the traditional owners from Warmun and also includes traditional owners from Halls Creek, Bow River station, Doon Doon, Kununurra and Glen Hill.

Argyle Diamond Mine planners schedule meetings up to three months in advance and include a variety of meetings; large negotiation meetings, individual community meetings and bush meetings. Traditional owners are also engaged in work-program clearances and *munthas* at the mine. *Munthas* (welcome) are given each week for new workers.

Apart from this, people are also involved in the community at Warmun with council meetings, painting and exhibitions with the art centre, activities with the school and the Catholic church and the drug and alcohol program, and women's centre activities. On top of this, there are meetings to do with the native title claim and also exploration and mining from other mining companies.

There are also other government agencies carrying out work there, including the TAFE, ATSIC and environmental health programs.

More importantly, community members are concerned about day-to-day issues of health, looking after children and older people, shopping and family matters. There are also deaths that occur and meetings are cancelled out of respect for family members.

Whilst to outsiders it may seem easy to drive down to Warmun or Halls Creek and talk about land issues it is not always straightforward. Even the most organised planner will come across unexpected and unforeseen circumstances.

Kununurra

Miriwoong Gajirrawoong people have been involved for over 10 years in a protracted native title claim process. Particularly over the last 18 months, this work has intensified and people have been engaged heavily in that process. This led to the determination of native title over certain parts of land around Kununurra in December 2003.

Miriwoong people are also involved in the State Government push for extension of the Ord River Irrigation Area in Ord Stage 2. As part of this, a global negotiations process has been established to negotiate outstanding claims (Miriwoong Gajirrawong Native Title Claim No. 2) and also Miriwoong involvement in Ord Stage 2. A major part of this has been the completion of an Aboriginal social impact assessment study carried out last year by the KLC. Kitty Kahn, who was employed to carry out this work, participated in the meetings about pesticides run by SP5. It is agreed that many of the NRM issues that Miriwoong people have raised through SP5 should feed into the global negotiation process.

Miriwoong people also have commitments in the community, including work with the Waringarri Resource Centre, the Mirima Language Centre and Waringarri Arts, and are also engaged in similar day-to-day activities as described above.

The Miriwoong community also consists of a number of outstations (living areas) and communities, and people are more spread out throughout these communities than in Warmun where there is a more-concentrated population in town.

Halls Creek

Halls Creek people have not been as involved in native title claim work over the past two years. Apart from the Tjurabalan determination south of Halls Creek, there are no large claims progressing in this area. There are several claims lodged but, due to inadequate funding to the Native Title Representative Body and subsequent prioritisation of claim work by the KLC, these have not progressed.

Halls Creek people are, nevertheless, involved in a number of town activities, including the Mardiwa Loop housing developments and issues, and work with KLRC, the school and Ngonjuwah. People are also involved with the Yarliyil Art Centre and other community activities.

Jaru people have been involved in activities to do with mining and work program clearances, particularly at the new Lamboo mine and other mining exploration to the west and south of Halls Creek.

Kija people from Halls Creek have been involved most recently in negotiations with Moolla Bulla station and about mining activities at both the Salay Mallay mine and ADM. They have also been involved in negotiating living areas on Bedford station.

With all these activities going on, it is a challenge to plan field research, but it is evident by the number of people who have been involved in SP5 that this area of work is important to them.

It is also the fact that many of these activities talk about country, talk about getting land back but are often constrained to just talking. This type of program and others in the KLC Land and Sea Unit enable people to be active in going onto country. This includes activities focused on recording knowledge, discussing their aspirations for when they get country back, how they might like to do it and how other people can help this happen.

Discussion

Future possibilities

The changes to the OBP have meant that the original aims and goals of SP5 will not be reached. The post-OBP project will work with only two Aboriginal stations and Aboriginal people with connections to non-Aboriginal-owned stations. There are opportunities for other funding agencies and research institutions to build upon the work that has been developed in the East Kimberley. The future for Aboriginal people lies in making decisions about how they want to see their country developed. The workload will increase as more Aboriginal people gain title to land or enter into comprehensive management agreements.

Certain components of the research that will continue in the post-OBP proposal include:

- Aboriginal Steering Committee for the Ord catchment
- cultural mapping database development
- cultural mapping field research
- action research on pastoral stations
- further exploration of institutional impediments in pastoral station management.

For other key areas that will not continue under the post-OBP proposal it is recommended that further funds are sought immediately. These funds could come from key NRM State agencies and research agencies such as the Waters and Rivers Commission, AgWA, DIA, ILC, CRC Savanna Management. This would ensure that momentum is not lost.

There are a number of government initiatives that are already in process that this work has relevance to. These include the following:

- Kununurra–Wyndham Area Development Strategy (KWADS) 2000 (WAPC 2000)
- WA State Sustainability Strategy and the development of regional sustainability strategies (Consultation Draft 2002)
- review of the *Regional Development Commissions Act 1993*
- Regional Policy Statement (draft – Dept of Local Government and Regional Development 2002)
- WA Natural Resource Management Council (replaced the State Salinity Council) established 2002
- natural resource management groups
- position statement on ‘Environmental protection and sustainability of the rangelands in Western Australia’
- National Action Plan for Salinity and Water Quality (NAPSWQ)
- draft Kimberley Region Management Plan (CALM)
- Roads 2020 Regional Development Strategy, Kimberley Region
- draft Agricultural and Rural Land Use Planning Policy (WAPC 1999)
- Indigenous Ownership and Joint Management of Conservation Lands in Western Australia (CALM)
- Equity and Diversity Plan for the Public Sector Workforce 2001–2005.

As stated in the KWADS (WAPC 2000, p. 18):

Aboriginal culture and heritage considerations are an important component of wider planning initiatives associated with economic development, settlement and the management of resources and environment.

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For Aboriginal people in planning, the following objectives should be balanced (WAPC 2000, p. 18):

- *Maintain and practice culture that Aboriginal people today and in future generations have the right to identify with and enjoy*
- *Enjoy their rights and interests in the form of ongoing use of traditional land for hunting, fishing, food gathering, crafts and medicines...*
- *To participate in the modern economy to improve their quality of life.*

The main industries in the East Kimberley are mining, tourism, pearling and fishing, irrigated agriculture and pastoralism (WRC 1999, p. 13; KDC 1997). Tourism has been promoted as a way for Aboriginal people to participate in economic development. It was a recommendation of the Royal Commission into Aboriginal Deaths in Custody as an avenue for 'self determination, self-management and economic self-sufficiency for Aboriginal people'.

Aquaculture is also a burgeoning industry, with enterprises already established including Lake Argyle barramundi and the Wyndham crocodile farm, and other activities such as red claw culture (WAPC 2000, p. 25). Bell Springs community is also developing an aquaculture-based industry and has been working on this with the Kimberley College of TAFE.

Further work in facilitating Aboriginal peoples' aspirations in how they want to manage and look after country will see the expansion of Indigenous-owned enterprise and joint ventures.

To paraphrase a report from the early 1970s (Beeton n.d. cited in Cowell and Pursche 2002), there needs to be a conscious recognition that the most significant issue facing the East Kimberley (OBP) region is, in the language of the time:

...[the] integration of the Aboriginal people into the developing economic system while allowing them at the same time to preserve a cultural identity and a positive say in their own future.

The majority of the work that the Northern and Central Land Councils carry out now relates to land management work and facilitating and supporting traditional owners on the ground with fulfilling their aspirations:

...long term future is with the management and development of Aboriginal land. ...Since the sunset clause came into effect in June 1997, no more claims have been lodged by the NLC and the organisation is shifting its focus to the management of land and seas and the development of appropriate multiple land use strategies...(NLC 2002, p. 31)

The NLC focuses its land and sea management activities under two categories. The first is integrated conservation and development that 'focuses on the conservation, management and utilisation of natural resources by Aboriginal people' (NLC 2002, p. 31). The Caring for Country Unit (CFCU) within the NLC has responsibility for this work. The CFCU delivers advice on education and training for Aboriginal land and sea managers. Key issues include control of weeds, fire and feral animals (NLC 2002, p. 31). The CFCU recognises the application of two knowledge systems: Western, science-based knowledge and traditional indigenous knowledge (NLC 2002, p. 31).

The second category that the NLC focuses on is 'doing business' which is 'largely the management and facilitation of commercial and mining proposals for Aboriginal land' (NLC 2002, p. 31). The NLC's role concerning commercial or business enterprise includes the following activities (NLC 2002, p. 36):

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- *Assist Aboriginal people to carry out commercial activities (including resource development, the provision of tourist facilities and agricultural activities);*
- *Negotiate land use agreements on behalf of Aboriginal people;*
- *Ensure that Aboriginal culture, traditions and law are respected and followed; that the relevant Aboriginal people make informed decisions; and*
- *Ensure that commercial and resource use agreements are fair.*

The future for Aboriginal people in the East Kimberley and Kimberley regions is on similar land-management programs. The Kimberley Land and Sea Management Unit (LSMU) is currently working on a variety of projects focused on conservation of traditional ecological knowledge, joint management of national parks including Purnululu and Mitchell Plateau, Indigenous Protected Area management, freshwater and saltwater species research and management and cultural heritage.

The LSMU currently works with the CRC for Tropical Savannas Management and the NAILSMA, WWF, NHT, CALM, the Waters and Rivers Commission and AgWA.

To support and assist on-ground initiatives and aspirations of Aboriginal people in the East Kimberley the work of the OBP should be built upon. It is imperative that State Government NRM agencies revise their resource commitments to Aboriginal employment and training and to how they currently support the facilitation of traditional owners in decision-making and planning initiatives.

In the recent Consultation Paper on Indigenous Ownership and Joint Management of Conservation Lands in Western Australia (July 2003) (CALM 2003), Judy Edwards states in the foreword that:

The state Government recognises that existing laws and management arrangements are continuing to erode Aboriginal aspirations to care for traditional country, particularly that country which comprises our national parks and conservation reserves.

The consultation paper discusses a number of State objectives, including the establishment of a comprehensive, adequate and representative system of conservation lands (p. 11). This system is obligatory under IUCN (World Conservation Union) 1994 definitions of protected areas and 'it is also desirable to meet IUCN best practice guidelines in relation to the involvement of Indigenous people in protected area management' (Harmon 1994, p. 11).

The paper also states (Harmon, 1994, p. 13) that:

...there are no opportunities under the Native Title Act 1993 for Traditional owners to obtain native title to those lands and secure any interests or rights, including the practice of traditional customs. The government therefore considers that it is imperative to amend State legislation to enable Aboriginal people to secure rights and interests in conservation lands and guarantee their future involvement in the joint management of those lands with CALM, according to the objectives outlined....in this paper.

With the proposed excision of conservation lands under the 2015 review of pastoral leases, it is imperative that traditional owners are included in any discussions about the establishment and management of these areas. Joint management and models established at Uluru National Park, Kakadu National Park and at Nitmiluk in the Northern Territory provide examples of how

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Aboriginal ownership and involvement in management of protected areas can benefit both Aboriginal people and the wider community.

Whilst some traditional owners at Uluru and Kakadu state that they have issues with some of the working relationships regarding day-to-day management and policy decisions from government parties, the management system in place there is far ahead of any government initiatives in the East Kimberley region.

CALM also states in this discussion paper that it has reviewed its funding and staffing allocations and that it is implementing three key strategies for training of Indigenous people (CALM 2003, p. 23). Strategy one is relevant to remote locations and claims that trainees will be co-located with skilled mentors for the duration of their training. This is taking place at Ngauwudu Management Area (Mitchell Plateau). Under this strategy, training will take place for a period of up to three years to enable appointment to a range of occupations including National Park ranger, field officer, wildlife officer, park maintenance officer, Aboriginal heritage officer (CALM 2003, p 23).

CALM has set an Indigenous people employment target of 10–15% of its full-time equivalent workforce (CALM 2003, p 26). It also states in the paper that it will apply an affirmative action program to achieve a target of 50 Aboriginal employees/trainees by December 2004 with a target of 100 additional employees within 10 years (p. 26). This new direction set out by CALM should be applauded, as long as the initiatives are implemented.

Conclusion

Aboriginal people in the East Kimberley know how they want to develop their future and, in most cases, how they would like this to be carried out. Institutional impediments such as power imbalances, lack of resources, lack of recognition for traditional ownership and traditional management systems of knowledge and the lack of a whole-of-government approach to funding for natural resource management makes progress very difficult for people living in communities and outstations.

For sustainable development to be achieved in the region and for the cultural integrity of the area to be recognised, celebrated and promoted, State and Australian Government agencies must commit adequate resources to involve Aboriginal people in natural resource management and to assist them in meeting their aspirations. They must also listen, take the time to meet the people that they make decisions about, and learn from them.

In the period that SP5 was running, at least 10 senior traditional owners died. The vast amount of knowledge about country that went with them cannot be recovered. And not only this but their personal and often challenging life stories were a valuable national resource that cannot be replaced.

The future of the region lies in the balance between environmental, social, cultural and economic outcomes. Investment in research and development, particularly that which recognises Aboriginal knowledge and best practice principles of action and participatory research, will benefit all the people of the Kimberley region in providing a better planned, and a better appreciation for the environment. Biodiversity conservation, maintenance and promotion of cultural diversity, economic opportunities and social cohesion are imperatives for a successful future.

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