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## INCREASING THE NUMBERS OF WILDLIFE PREFERRED BY ABORIGINAL COMMUNITIES IN THE ANANGU PITJANTJATJARA LANDS, AUSTRALIA

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**KEY WORDS:** Red kangaroo, *Macropus rufus*, emu, *Dromaius novaehollandiae*, indigenous utilization, proactive management, fire management, feral animal control, Anangu Pitjantjatjara Lands, central Australia.

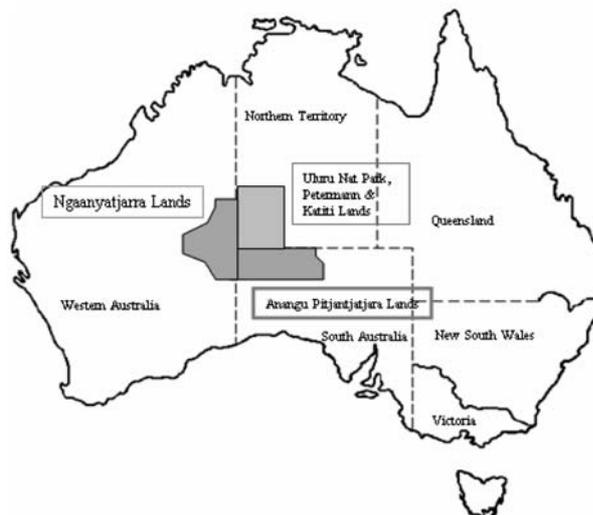
### ABSTRACT

*In the 107,000-km<sup>2</sup> Pitjantjatjara Lands of central Australia, Anangu, the Aboriginal people, are working with scientists and wildlife managers to restore traditional land management practices (such as patch burning and waterhole cleaning), to implement some others (such as controlling feral animals, and identifying refuge-areas) and to exchange information. The program known as "Kuka Kanyin" ("looking after game animals") is increasing native species that are preferred as bush tucker and are critical to rural subsistence livelihoods (such as the red kangaroo, *Macropus rufus*, and the emu, *Dromaius novaehollandiae*). It is also engaging Anangu in reintroduction programs for less common and locally extinct native species. It is motivating Anangu, maintaining culture and creating employment. It is a good example of scientists and Aboriginal people working together and highlights a new focus for programs to address community health and the educational challenges facing Aboriginal communities which need urgent support.*

### I. BACKGROUND

Anangu lands cross state and territory boundaries in central Australia (Figure 1) covering 350,000 km<sup>2</sup> in northern South Australia, the Northern Territory near and including Uluru Kata-Tjuta National

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**Figure 1:** Location of the Anangu Lands (in grey) in three Australian jurisdictions, including the Anangu Pitjantjatjara Lands (in dark grey).

**Figure 1 :** Localisation des Anangus Lands (territoires des aborigènes, en gris) à cheval sur trois juridictions australiennes, comprenant les Anangu Pitjantjatjara Lands (en gris foncé).

Park and Warburton in Western Australia. They are Aboriginal Land, that is land owned by Anangu and can also cover National Parks and Indigenous Protected Areas. (KNIGHT and YOUNG, 2003) Across the region, there are between 5,000 and 6,000 people who speak the related Aboriginal languages (Pitjantjatjara, Yankunytjatjara or Ngaanyatjarra English is a second, third or fourth language). In South Australia, the Anangu Pitjantjatjara Lands cover 10.7 million hectares, approximately 8% of the State, in its remote and arid north-western corner. The population of approximately 3,000 people is scattered across 33 communities and outstations.

For Anangu, traditionally, the intent of land management centred on the production of food. The two major activities that ensured food security were patch burning and rockhole cleaning (BERNDT and BERNDT, 1999). Surface water is very sparsely distributed and over the entire region there are only a handful of permanent springs. Most water points are rain fed rockholes that were in the past kept clean by Anangu according to *tjukurpa* (the law and culture). Rockholes in the Anangu Pitjantjatjara Lands are also a key water source for many native animals including important game species, such as *malu* the red kangaroo, *Macropus rufus*, and *kalaya* the emu, *Dromaius novaehollandiae*.

Patch burning was the principle tool in bush food production. Many vegetable foods *mai* used by Aboriginal people regenerate well following fire. *Kuka* (the game) is also increased by patch burning because it stimulates the regeneration of "sweet" grasses, and the short grass communities are preferred by kangaroos. Fire management was widely spread.

Traditional patch burning increased diversity in important animal and plant habitats, striking a balance between fire sensitive and fire dependent species. On the other hand hot wildfires destroy biodiversity, favoring monocultures of fire adapted species.

## II. ISSUES

### II.1. SUBSTANTIAL SOCIAL AND ECONOMIC DEVELOPMENT NEEDS

For tens of thousands of years before the arrival of European settlers, Anangu lead a nomadic hunting and gathering way of life moving across the lands to various sites where food and water supplies were likely to be available (CLARKE, 2003). A short stay was made in each locality, corresponding in length to these supplies. Today Anangu have more permanent homes in communities or outstations.

Across the Anangu Lands, incomes are very low by Australian standards and almost entirely made up of welfare payments in one form or another (AUSTRALIAN BUREAU OF STATISTICS, 2003). In spite of major investments in programs for the health and welfare of Indigenous peoples, conditions for Aboriginal communities remain amongst the worst in Australia. Life expectancies are 20 years lower than other Australians, incidence of diabetes and kidney failure is in epidemic proportions. Aboriginal children and youth have 7 times the rate of sudden infant death and 7 times the death rate from infectious diseases. In common with indigenous people in North America and New Zealand other socioeconomic indicators are of major concern. Aboriginal youth are 300 times more likely than non-Indigenous youngsters to be locked up in Australian prisons. There is a high incidence of substance abuse and domestic violence. The welfare of Aboriginal people is a topic of continuing national concern in Australia.

Break downs in traditional culture and lack of leadership are typically found in communities in which these statistics are worst. Communities that are making progress redressing the situation are often those which have accepted responsibility to do something about the situation themselves. They are more likely to be actively involved in land management and related production enterprises.

### II.2. LAND DEGRADATION

#### Fire

Traditionally nearly all the population of the region engaged at some time in burning work. Today relatively few Anangu retain the knowledge to carry out patch burning. The fine-grained mosaics of differently aged vegetation that were produced under the traditional fire regime increased diversity in habitats available to wildlife. The change in people's pattern of living has meant that today there are few areas of vegetation managed in this way.

Inadequate cool season burning coupled with above average rainfall in the early 2000's has caused large fuel build up. Large areas of country and the fauna they contain are vulnerable to wildfire. Wildfires in December 2000 burnt approximately 30,000 km<sup>2</sup> destroying prime *nganamara* mallee fowl, *Leipoa ocellata*, habitat. The heat and destruction generated by wildfires occurring in extreme summer weather conditions creates monocultures. And can sterilise the soil.

## Feral animals

Another major problem for sustainable land management is high numbers of feral herbivores including camels, donkeys, rabbits and horses. Aerial surveys conducted in August 2000 estimated that 4,000-7,000 horses, 1,000-4,000 donkeys and approximately 2,000-4,000 camels roam the South Australian Anangu Pitjantjatjara lands (LAST, 2000). Given the above average rainfall since the year 2000 survey, the numbers of large feral herbivores are likely to have increased by both migration and higher survival rates.

Feral herbivores including camels, donkeys and horses can rapidly drink all the water in small ephemeral rockholes that could otherwise support local native species through periods of drought. Numbers are now so high that even in short periods of drought some permanent waterholes are severely degraded. Dead and dying animals foul waterholes. Most of these sites have great cultural significance and are damaged by animals when they come in to drink or fall in and die. The threat to indigenous flora and fauna is quite clear. These large feral herbivores compete with fauna primarily for water but also damage vegetation. In times of drought, donkeys, horses, rabbits and camels eat and trample all the vegetation near the last remaining water points.

## Water

Rockholes were a crucial water source for Anangu in this semi-desert country. Cleaning rockholes allows them to properly hold water. If rockholes fill up with dirt they no longer meet the needs of animals.

Traditionally rockholes were cleaned by Anangu as they walked through country. While Anangu no longer depend on rockholes for drinking water, game and other native fauna of the region still do. Today rockhole cleaning is only done by those committed to maintaining *tjukurpa* and broader land management objectives.

## III. MANAGEMENT PRACTICES AND TASKS

### III.1. THE KUKA KANYINI PROGRAM

The challenges Anangu are facing are huge and there is an urgent need for effective action to improve conditions. A program of wildlife habitat improvement under the leadership of senior men and women (*tjilpi* and *myinmapampa*) could create the incentives necessary to engage community members in a model that reflects traditional obligations.

Senior men and women (*tjilpi* and *myinmapampa*) say most social and health problems are the result of a breakdown in the old ways and that *tjukurpa* (law and culture) is being lost. They say the land is the basis of the law. Relationships between and amongst Anangu determine how the land is managed and country is cared for.

A program known as *Kuka Kanyini* ("looking after game animals") is developing a Regional Wildlife Plan lead by Anangu (WILSON, 2003). The initiative aims to blend *tjukurpa* (Anangu customary knowledge) with *piranpa* (white-fella or non-Anangu knowledge) to improve wildlife habitat, enhance landscapes and harvest species on a sustainable basis. The outcome sought is

maintenance of culture and traditional ecological knowledge of wildlife and habitats.

Kuka Kanyini is about gathering traditional ecological knowledge and information so that it can be supported by western technology and scientific information. Western technologies such as aerial surveys (LAST, 2000) enable Aboriginal participants to share their information from a different perspective. Previously much of this knowledge was targeted by scientists, in the context of a single species, in one area, in a limited budget and timeframe.

Kuka Kanyini differs in that knowledge is managed by Aboriginal people and it reflects the fact that caring for country is proper management of knowledge that goes with the country. Knowledge in Kuka Kanyini is held by Aboriginal people and within the religious philosophy that governs the land, simply by asking the right questions, building relationships and encouraging participation on country, western scientists are retained in skills and become "apprentices".

### **Reintroducing animals (*Kuka Irititja*) from before**

Anangu lands are home to several threatened species including *waru* the black-flanked rock wallaby, *Petrogale lateris*, *nganamara* the mallee fowl, *mala* the rufous hare-wallaby, *Lagorchestes hirsutus*, *wayuta* the common brushtail possum, *Trichosurus vulpecula*, *malu* the red kangaroo and *kalaya* the emu. Kuka Kanyini is working with Anangu in order to develop reintroduction programs to increase the numbers of animals which are threatened or locally extinct.

Breeding animals for release and reintroduction is strongly supported by communities. Doing so has the profound effect of strengthening culture and correcting the loss of self esteem which follows the disappearance of totemic animals for which people are responsible (NEWSOME, 1980). On current trends without such remedial action species will continue to disappear. These operations also create work for people.

### **Feral herbivore control: predators and competitors**

In general Anangu are against killing of feral animals simply as an environmental measure. Any program that involves the slaughter of animals needs to be carried out in such a way that the animals are not wasted, and preferably killed in the abattoir rather than on the lands. Mustering, while attractive to Anangu, is however very difficult to do effectively, particularly in these remote areas where roads are poor and transport costs to markets sometimes exceed the market value of the animals.

Kuka Kanyini is helping to facilitate commercial partnerships to build the capacity to efficiently remove feral herbivores. The optimum approaches for feral control will vary between mustering, trap yards and shooting depending on available markets and the availability of local infrastructure and the terrain on which the feral animals are located. In addition vulnerable water points are being fenced to protect them from feral animals.

### **Fire: patch burning and controlling wildfire**

Kuka Kanyini is helping Anangu to reinstitute controlled burning to reduce the impacts of wildfire and increase spatial heterogeneity and diversity. This is

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being achieved through the use of smaller fires in the cooler weather, and burning after the rains before the vegetation dries out increases diversity in the landscape and reduces the opportunity for uncontrolled wildfire.

The development of a comprehensive fire management plan is underway. The aim is to prioritise sites where patch burning is most urgently needed to protect at risk areas of biological and cultural significance. Areas designated for intensive management such as parts of the Indigenous Protected Areas would be of high priority to reproduce the fine-grained burns of the past.

### **Water: maintaining traditional rockholes and managing bores**

Cleaning rockholes has a major impact on biodiversity and is a very efficient management technique. Kuka Kanyini is mapping the most important rockholes and bores.

A more even distribution of water enables wildlife to range more widely and to increase the potential use of the landscape. Underground water that becomes available through bores and western technology can also alter the mix of species, and this needs to be monitored.

### **Protecting refuge areas and estimating sustainable harvests**

Kuka Kanyini is assisting in the identification of refuge areas which support animals and plants to breed and survive in dry times (ROBINSON *et al.*, 2003).

Through the surveys of the resource base and harvesting rates, it can estimate the sustainable offtakes under a range of conditions. Similar practices can support the harvesting of bush plants for food, and wood for artefact production.

## **III.2. INTEGRATING WITH OTHER PROGRAMS**

Initial support for Kuka Kanyini has come from the Anangu Pitjantjatjara Yankunytjatjara Land Management, and the State and Australian Government Departments responsible for environment and heritage. See scoping study at [www.awt.com.au/kuka](http://www.awt.com.au/kuka). The Natural Heritage Trust ([www.nht.gov.au](http://www.nht.gov.au)) has invested significantly in implementation planning and resource management components. However, to give effect to the wider concepts, of supporting education, training, employment, and health services, Kuka Kanyini needs wider support. Coordination and information exchange across the region is also important. Land and its management are central to Anangu perceptions and motivations and are not constrained to state borders.

**Training** in wildlife and the attainment of higher land management skill levels **and education** in communities could come through adult training and school projects. Field trips and excursions and classroom wildlife education will help maintenance of traditional knowledge of wildlife and habitats. It should be supported through outdoor learning and collation of information on customary practice and law.

There are also opportunities for locally produced food to be sold in stores in the Anangu Pitjantjatjara region. *Kuka* and bush plant retailing can be integrated with other foods. This will mean less processed food will be consumed

and more exercise and physical activity will follow. Program support is needed **to develop** employment opportunities in resource utilisation **enterprises**, food production and processing and retailing in stores, and tourism joint ventures both in wildlife spotting and accommodation, which will enable Anangu to share their culture, lands and wildlife with others.

**Exchanging information** and experiences on wildlife management between Anangu in the program region and transferring information between interested parties will enhance the profile of program. Teams of special interest can be established across the Kuka Kanyini program area.

#### IV. CONCLUSION

Coordinating management activities throughout the Anangu Lands, and exchanging information is a key component of Kuka Kanyini and proactive wildlife management. These activities are not only enhancing biodiversity, but also creating employment, replacing processed food imports and supporting maintenance of culture. They are a new focus for programs to address health and the motivational challenges facing Aboriginal communities.

Land and wildlife are central to Aboriginal culture (WILSON *et al.*, 1992; ROSE, 1995), so Kuka Kanyini, which seeks to engage Aboriginal people in traditional land management practices, is more than just a wildlife management program. It is enabling Aboriginal people to control their own development with their lands resources.

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**REFERENCES**

- AUSTRALIAN BUREAU OF STATISTICS (2003). - Social conditions of aboriginal and Torres Strait Islander people, 2000. [Data file]. Available from the Australian Bureau of Statistics site, <http://www.abs.gov.au>.
- BERNDT R.M. & BERNDT C.H. (1999). - The world of the first Australians: Aboriginal traditional life, past and present. Aboriginal Studies Press, Canberra.
- CLARKE P. (2003). - Where the ancestors walked: Australia as an Aboriginal landscape. Allen and Unwin, Crows Nest (NSW).
- KNIGHT A. and YOUNG F. (2003). - Anangu Pitjantjatjara Yankunytjatjara land management. *In*: Proc. International Rangelands Congress, Duban.
- LAST P. (2000). - Aerial survey for large herbivores on the Anangu Pitjantjatjara Lands. National Parks & Wildlife South Australia, Adelaide.
- NEWSOME A.E. (1980). - The ecomythology of the red kangaroo in central Australia. *Mankind*, 12: 327-33.
- ROBINSON A.C., COPLEY P.B., CANTY C.D., BAKER L.M. & NESBITT B.J., eds (2003). - A biological survey of the Anangu and Pitjantjatjara lands South Australia, 1991-2001. Department of Environment and Heritage, South Australia.
- ROSE B. (1995). - Land management issues: attitudes and perceptions amongst Aboriginal people of central Australia. Central Land Council, Alice Springs.
- WILSON G.R. (2003). - Kuka Kanyini: looking after game animals. Anangu Pitjantjatjara Regional Wildlife Management, Australian Wildlife Services, Canberra. See [www.awt.com.au/kuka](http://www.awt.com.au/kuka)
- WILSON G.R., MCNEE A. & PLATTS P. (1992). - Wild animal resources: their use by Aboriginal communities. Bureau of Rural Resources, Canberra.

## ACCROÎTRE LES EFFECTIFS DE LA FAUNE SAUVAGE PRÉFÉRÉE PAR LES COMMUNAUTÉS ABORIGÈNES DES ANANGU PITJANTJATJARA LANDS D'AUSTRALIE

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**MOTS-CLÉS:** Kangourou roux, *Macropus rufus*, émeu d'Australie, *Dromaius novaehollandiae*, utilisation par les indigènes, gestion prévisionnelle, aménagement par le feu, contrôle des animaux domestiques redevenus sauvages, Anangu Pitjantjatjara Lands, centre de l'Australie.

**RÉSUMÉ**

*Le peuple aborigène des Anangu travaille avec les scientifiques et les gestionnaires de la faune sauvage dans les 107 000 km<sup>2</sup> des Pitjantjara Lands au centre de l'Australie à la restauration de mesures traditionnelles de gestion (telles que les feux pratiqués par taches et l'entretien des points d'eau), à la mise en place d'autres mesures (telles que le contrôle des animaux domestiques redevenus sauvages et l'identification des zones-refuges) et à l'échange d'informations. Le programme intitulé "Kuka Kanyini" ("prendre soin des animaux-gibiers") consiste à augmenter les espèces autochtones qui sont préférées en tant que viande de brousse et sont critiques pour les moyens de subsistance ruraux (telles que le kangourou roux, *Macropus rufus*, et l'émeu d'Australie, *Dromaius novaehollandiae*).*

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diae). Il fait aussi participer les Anangus aux programmes de réintroduction d'espèces autochtones moins communes et localement éteintes. Il motive les Anangus grâce à la sauvegarde de leur culture et à la création d'emplois. C'est un bon exemple de travail en commun des scientifiques et du peuple aborigène. Il est centré sur des programmes visant la santé des communautés et confrontés aux défis de l'éducation vis-à-vis de communautés qui ont un besoin urgent d'aide.