A number of clans of the Bininj Kunwok language group are the traditional owners of the west Arnhem plateau. Bininj ownership of their land is recognized under the *Aboriginal Land Rights (Northern Territory) Act 1976*. Warddeken Land Management was established in August 2007 and operates from the Kabulwarnamyo outstation community, re-established in 2002. It represents over 10 years work by the traditional owners of the west Arnhem plateau in formalizing their cultural and natural resource management activities and re-connecting people with country.

The Bininj Kunwok clans that are part of Warddeken Land Management are Mok, Mirarr Gundjeihmi, Warrdjak/Worgorl, Danek, Ngalngbali (Succession to Nguluminji), Warrdjak, Yurlmanji, Maddalk, Bolmo, Badmardi, Wurnkomku, Barradi, Madjawarr, Marrirn, Wurrik, Mayirrkulidj, Durlmanjarr, Rol, Djordi/Djorrolom, Murruba, Buluwunwun, Bulumo, Karnbirr, Berderd/Mimbalawuy, Wurrbarn, Warridjnu, Bularldja, and Lambirra.

Warddeken Land Management operates across the remote and rugged western Arnhem Plateau. Most of the terrain is dominated by the heavily dissected sandstone, and access is mainly by foot or by helicopter. In the dry season a few rough tracks are accessible by 4WD, connecting up the handful of outstations that have been established since the mid 1980s. There are four other communities on the Plateau, three of which are permanently occupied and one which is currently unoccupied for cultural reasons. They are Malkowo, Manmoyih, Kamarrkawan and Kumarrrnbang.
Warddeken Indigenous Protected Area

In 2009 The Warddeken Indigenous Protected Area (IPA) was declared. It covers some 14,000 square kilometres of country. The Warddeken IPA is contiguous with the Djelk IPA, declared at the same time. They share a common 50 km border and a narrow 286 km overlap (representing customary integration of adjoining clans responsibilities for country). These two IPAs cover some of Australia’s most biodiverse regions and will exceed the area of both Kakadu and Nitmuluk National Parks.

For Aboriginal people it means—unlike joint-management arrangements for national parks—that they remain the primary managers of their country. Aboriginal people are able to develop their own partnerships and determine their own priorities and outcomes.

Landscape description

The Arnhem Land Plateau is recognised under the NT Parks and Conservation Masterplan as an international site of biodiversity significance and one of the highest priorities for conservation across the Northern Territory. The plateau is the home of 166 species of plants that occur nowhere else in world along with 20 species of vertebrate. (NRETA 2005: 118). The plateau is highly significant for numerous nationally and Territory-listed threatened species. It is also of great cultural significance locally and globally with experts stating that the extraordinarily rich and diverse body of rock art across the plateau is of World Heritage standard.

The Arnhem Land plateau covers the entire Arnhem Land Plateau Bioregion. The plateau covers some 32,000 sq km of country and is the home of an extraordinary high diversity of animal and plant communities and includes many relictual (an animal or plant known to have existed in the same form in previous geological ages) and endemic species of flora and fauna.

The dominant ecological community of the plateau is the Arnhem Land sandstone heath. This community is a complex of closely interdigitated (interlocked like the fingers of folded hands), intergrading plant formations including Eucalyptus, Corymbia or Callitris dominated forests, woodlands, open woodlands, shrublands and hummock grasslands united by the presence of a well developed scleroplyllous shrub component (IPA Tech Report). The relatively small areas of Myrtaceae (Allosyncarpia ternata) forest surviving in the upper basin are also highly valued by landowners for their association with ancestors.
The prevailing fire regime is leading to broad-scale loss of obligate seeders (woody plants which cannot re-sprout from their trunks and are dependent on seed for regeneration), which provide much of the ecological fabric of this ecosystem. To maintain the extent, diversity and intactness of this ecosystem, traditional owners have been active in reducing the frequency of extensive hot late season fires. The reoccupation of the Arnhem Land Plateau and the West Arnhem Fire Abatement Program, discussed below, is assisting with this major task.

Monsoonal rainforests throughout the basin are highly valued for yams and other food plants. However, the prevailing fire regime is also degrading and diminishing these rainforests, particularly those dominated by Myrtaceae. The monsoonal rainforest appears to be in retreat over a large portion of its range. It is not only late hot season fires that are degrading this ecosystem but also feral animals, particularly pigs, and weeds (IPA Tech Report).

Feral buffalo (Bubalus bubalis) also have a negative impact on the plateau. Buffalo are held in ambivalent regard by landowners. They are valued highly for subsistence hunting and also for the potential commercial value they hold. At the same time landowners recognise the negative impact that buffalo have on wetlands, springs and water quality. The National Brucellosis and Tuberculosis Eradication Campaign (BTEC) in the 1970s significantly reduced buffalo numbers in the low-lands of coastal west Arnhem Land. However, mustering was impossible and shootout difficult on the Plateau. Furthermore, migrating buffalo from the Gulin Gulin herd, near Bulam, (which was determined to be disease-free and not subject to destocking, and is now estimated to number 30,000 animals) have been identified as a major threat to biodiversity of the plateau.

Cane toads entered the bioregion in the 2001 Wet season from the east. Their presence and impact on native fauna caused great distress to traditional owners. Feral cats are also found on the plateau escarpment their population and impact on native species is not known. European bees have been in the Plateau east of the Gumardir River since the early 1990s their impact on the culturally important and highly valued sugar bag native bees (Trigona and Austroplebeia sp.) is also unknown.

Threatened species on the Plateau include: Bustard (Ardeotis australis), Emu (Dromaius novaehollandiae), Northern Quoll (Dasyurus hallucatus), Nabarlek (Petrogale concinna), Black Wallaroo (Macropus bernardus), Arnhem Land Rock-rat (Zyzomys maini), Arnhem Leafnosed-bat (Hipposideros inornata), Freshwater Sawfish (Pristis microdon), and Nawaran or the Oenpelli python (Morelia oenpelliensis).
Land Management Activity

>> Fire - West Arnhem Fire Abatement Project

The West Arnhem Land Fire Management Project (WALFA) is a partnership between Aboriginal Traditional Owners and Indigenous representative organisations, Darwin Liquefied Natural Gas (DLNG), and the Northern Territory Government. The partnership was formed to implement strategic fire management across 28,000 km² of Western Arnhem Land for the purposes of offsetting some of the greenhouse gas emissions from the Liquefied Natural Gas plant at Wickham Point in Darwin Harbour.

The project aims to reduce greenhouse gas emissions from this area by adopting effective fire management practices in what has been mostly unoccupied and unmanaged land. While the primary aim of the partnership for the non-indigenous partners is to offset greenhouse gas emissions, the primary aim of traditional owners has been to use the project to reconnect with country and undertake cultural and natural resource management in this region of unique biodiversity.

To achieve the greenhouse gas offsets traditional owners’ land management organisations (Warddeken, Jawoyn, Djelk, Adjumarllarl and Mimal Rangers) working closely with non-Indigenous partners, such as Bushfires NT, Tropical Savannas CRC implement strategic fire management from early in the dry season to reduce the size and extent of unmanaged wildfires and measure the greenhouse gas offsets.

This project does not generate income from carbon trading; it is a fee for service arrangement in which traditional owners are paid for fire management to produce greenhouse gas offsets. However, the process and accounting practices used to abate greenhouse emissions in this project will qualify for carbon trading when it comes on stream.

Regular early dry season burn-offs now occur and traditional owners have achieved the emission abatement targets set for 2005-2006 and 2006-2007. The WALFA Agreement created a long-term fee-for-service funding stream which enabled the employment of rangers in full-time positions. A core group of these rangers are now qualified to deliver aerial controlled burning (ACB) from helicopters and fixed-wing aircraft. The WALFA Project received the Innovative Solutions to Climate Change Award at the 2007 Australian Museum Eureka Prizes. It is important to note that the Community Development and Employment Program (CDEP) was instrumental in assisting this project get off the ground.

The WALFA project was a critical ‘two-way’ (valuing Indigenous ecological knowledge and science equally) research and management partnership as it led the way in demonstrating the potential alliances between private enterprise government, Indigenous and non-Indigenous scientists and land managers. It was also important in establishing a pilot model that clearly demonstrates the importance of people on country for fire management and Indigenous economic development across the tropical savannas of Northern Australia.

>> Weeds

The main weeds in the Warddeken IPA are the mission grasses (*Pennisetum polystachion* and *P. pedicellatum*) followed by small infestations of hyptis (*Hyptis*
Warddeken Land Management

Warddeken Land Management

Warddeken Rangers spray weeds in the late wet season before they set seed. A CyberTracker sequence is being used to collect information on what weeds are sprayed, where and when. This information will feed into the regional weeds strategy that was developed by the Warddeken, Djelk, Adjumarlarl and Mimal Rangers with the assistance of the PoC ecologist and NRETAS Weeds Branch.

Feral Animals

Feral animals present throughout the Warddeken IPA include: buffalo, cattle, pigs, cats and cane toads. The Warddeken Rangers are actively culling buffalo, cattle and pigs in certain areas where traditional owners want and allow it. More systematic culling of pigs and buffalo occurs as these animals are considered significant threats to natural and cultural resources, especially freshwater points (see Ens et al 2010). Buffalo and cattle are also often culled for food. Although pigs are consumed in other areas of Arnhem Land, they are not generally shot for food in this area. A feral cat eradication program is being discussed. Cane toads are present throughout the IPA in relatively low numbers however there is no active cane toad eradication program in the area, primarily due to the scale of the problem and relatively low and dispersed abundance of toads.

Ecological Research

Warddeken are conducting a number of ecological research projects in conjunction with various external experts from Government and universities in a two-way approach. For over a decade Warddeken have been working with the NT Government Bushfires and Biodiversity Unit on vegetation and faunal assemblages and species of the Arnhem Plateau and their responses to fire (Russell-Smith et al. 2009; Whitehead et al. 2008; Yibarbuk et al. 2001). Specific research has also been conducted on endemic and threatened species of the Warddeken IPA which include cycads, *Allosyncarpia ternata* (anbinnik), *Callitris intratropica* (anlarrk) and the sandstone heath communities as well as the endangered Golden backed tree rat (*Mesembriomys macrurus*).

Research on feral animals began in 2002 with buffalo and pig surveys of the Gumadir River catchment (Griffiths and Pardon 2002). Since then, the Manwurrk Rangers have also been working with the PoC ecologist, Emilie Ens, to gain a broader understanding of the impacts of feral buffalo and pigs on freshwater points within the IPA (Ens et al. 2010). Baseline information on the flora and macroalgae associated with freshwater points and frogs is also being collected (Ens et al. 2009). The Rangers and Emilie Ens are currently developing a field guide to the frogs of the Arnhem Plateau. The frog research story appeared in the NAILSMA publication *Kantri Laif* (Issue 6 2010 pp. 18–19, see <http://www.nailsma.org.au/nailsma/publications/downloads/Kantri_laif_6_small_res.pdf>), written by two Manwurrk rangers Kyrin Bulliwna and Seraine Namundja.

From a landscape perspective, Manwurrk Rangers and Emilie Ens have also been working on a rapid aerial assessment of wetland condition using CyberTracker technology and Fugawi mapping software. This assessment will allow the Rangers to
prioritise areas for feral animal control and aid in the detection of areas that need more active land management such as replanting or erosion control.

Recently the Manwurrk Rangers and Emilie Ens have also initiated ant surveys of outstations within the Warddeken IPA. Recently fire ants were found at Manmoyih outstation which lies in the Warddeken IPA. They were eradicated however the Rangers want to monitor the ant species present in the area to facilitate early detection of invasive ‘bad’ ants if they arrive. Ants are very important to the rock country people, especially the green ant.

Cultural Research

Warddeken has been a leader in Indigenous cultural research. Senior traditional owners were visionary in adopting a ‘two-way’ approach to cultural and natural resource management. Warddeken along with traditional owners have been active in a number of research projects that have supported land management and the return of people to country.

Governance

Meeting at Kabulwarnamyo following extensive consultations, traditional owners discussed which governance structure would be best suited to deliver environmental services and create jobs for people on country. The decision was to establish a company—Warddeken Land Management Company Limited. Its key roles are:

- Assisting land owners with the management of land, natural and cultural resources;
- Protecting cultural sites and information and developing programs to strengthen and transmit culture;
- Employment and training of rangers and land and cultural resource managers;
- Assisting land owners to return to their country;
- Attracting funds for management programs and livelihood;
- Establishing a trust to receive and manage donations for management work;
- Brokering partnerships with scientists and organisations to develop management based on ‘two-way’ knowledge systems;
- Brokering partnerships to deliver funding, resource management training skills development and volunteer programs;
- Assisting landowners to develop economic development activities that support them being on their country;
- Representing and advocating for Aboriginal people to improve services, infrastructure and quality of life; and
- Ensuring that the access permit system managed by the Northern Land Council is working properly for their country.
Importantly Warddeken Land Management Limited will be run by land owners from the proposed IPA lands, but it is not a traditional owner group that represents and makes decisions for country. That right remains with land owning groups under the Aboriginal Land Rights (Northern Territory) Act 1976. It is also not an outstation resource centre organisation like the neighbouring Demed Association and the Bawinanga Aboriginal Corporation. It is uniquely established to be the primary support organisation for cultural and natural resource management within the proposed IPA.

Warddeken aim to establish a financial management system so that funds can be quarantined to pay for land management within the IPA. It will work with landowners to plan land management projects, budgets and assist in undertaking the work. Warddeken will not spend funds on vehicles or houses or other items for private use but will only undertake land management work for the benefit of all landowners on the plateau.

References


