

**BRIGALOW PARK NATURE RESERVE
PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service
March 2002**

This plan of management was adopted by the Minister for the Environment on 5th March 2002.

Cover photograph of Brigalow vegetation by Rachel Cawthorne.

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FOREWORD

Brigalow Park Nature Reserve is located in the north-western plains region of NSW, 22 kms by road south-west from Narrabri. It is the only conservation area in north-western NSW which protects remnant stands of Brigalow vegetation in eastern Australia. Brigalow is proposed for declaration as a Critical Habitat for endangered species, populations and ecological communities under the Threatened Species Conservation Act.

The nature reserve, which contains regenerating elements of the original vegetation, is surrounded on all but the north-east corner by lands wholly or substantially cleared for grazing and grain production.

In addition to Brigalow, Brigalow Park Nature Reserve contains both the plant Spiny Peppercreess and Black-striped Wallaby (*Macropus dorsalis*) which are listed under the Threatened Species Conservation Act.

Another block of land containing Brigalow, Spiny Peppercreess and Black-striped Wallabies, known as Claremont, and a small area to the north-east of Brigalow Park Nature Reserve have been acquired by the Service but not gazetted as nature reserve due to objections by the Department Mineral Resources. These lands are also covered by this plan of management.

This plan of management establishes the scheme of operations for Brigalow Park Nature Reserve. In accordance with the provisions of section 76 of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

Bob Debus
Minister for the Environment

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INTRODUCTION

The *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A plan of management is a legal document that outlines how the area will be managed in the years ahead.

The procedure for the adoption of a plan of management for a nature reserve is specified in the Act:

- * Where a plan of management has been prepared, the Director-General is required to refer the plan to the National Parks and Wildlife Advisory Council for its consideration and advice.
- * The Director-General is then required to submit the plan to the Minister, together with any comments or suggestions of the Advisory Council.
- * The Minister may adopt the plan without alteration or with such alterations as is considered fit, or may refer it back to the Director-General and Council for further consideration.

In accordance with section 72(4)(k) of the Act this plan of management covers not only Brigalow Park Nature Reserve but also a block of land known as Claremont and a small area adjoining the north-eastern boundary of the nature reserve. Both these areas of land have been acquired by the Service but are not yet dedicated as nature reserve under the National Parks and Wildlife Act. The plan will also apply to any other future additions to Brigalow Park Nature Reserve.

A plan of management for Brigalow Park Nature Reserve and the proposed Claremont additions was placed on public exhibition from January to April 1999. Eight representations were received during the period of exhibition which raised ten issues. All submissions received were considered by the National Parks and Wildlife Advisory Council. The submissions and comments of the Council were considered by the Minister in adopting this plan of management.

In accordance with the Act, once a plan has been adopted by the Minister no operations may be undertaken on the lands to which it refers except in accordance with the plan.

For additional information or enquiries about any aspect of the management of Brigalow Park Nature Reserve, contact the Service's Narrabri Area Office at 1/100 Maitland Street, Narrabri or by phone on (02) 6799 1740.

2. MANAGEMENT CONTEXT

2.1 NATURE RESERVES IN NEW SOUTH WALES

Nature reserves arose out of faunal reserves. Faunal reserves in New South Wales were first established under the *Fauna Protection Act 1948*. Under the *National Parks and Wildlife Act 1967*, faunal reserves were reclassified as nature reserves. The 1967 Act was later replaced by the *National Parks and Wildlife Act 1974*.

Under the National Parks and Wildlife Act, nature reserves are areas of special scientific interest containing wildlife or natural environments or natural phenomena.

The purposes of nature reserves are defined in the Act as:

- "(a) the care, propagation, preservation and conservation of wildlife;
- (b) the care, preservation and conservation of natural environments and natural phenomena;
- (c) the study of wildlife, natural environments and natural phenomena; and
- (d) the promotion of the appreciation and enjoyment of wildlife, natural environments and natural phenomena."

Nature reserves are valuable refuge areas, where natural processes, phenomena and wildlife can be studied. They differ from national parks which include as a major objective the provision of appropriate recreation opportunities.

2.2 BRIGALOW PARK NATURE RESERVE

2.2.1 Location And Regional Setting

Brigalow Park Nature Reserve (202 hectares) is located in the north-western plains region of NSW, 22 kms by road south-west from Narrabri. The nature reserve was dedicated in 1986. A block of land known as Claremont (also 202 hectares) was acquired in 1987 and a block to north-east (50 hectares) was acquired in 1997.

The block known as Claremont and the north-east addition to Brigalow Park Nature Reserve have not been gazetted nature reserve because the NSW Department Mineral Resources considers they have high prospectivity. These lands will nevertheless be managed according to principles for management of nature reserves and it is intended to pursue the eventual gazettal of these lands. Claremont may be added to Brigalow Park Nature Reserve or may be dedicated as a separate reserve once this issue is resolved.

The nature reserve and proposed additions are small blocks of land containing regenerating elements of their original vegetation which were acquired by the Service

from neighbouring properties. The two major blocks are not contiguous and are surrounded on all sides by lands wholly or substantially cleared for grazing and grain production.

The land system in the west Narrabri area is generally flat with no prominent features such as hills or streams. Bundock Creek flows south-north to the west of Claremont and Nuable Creek flows similarly to the east of Brigalow Park Nature Reserve.

The extensive Pilliga East State Forest lies only a few kilometres to the south and Pilliga Nature Reserve lies further to the south of the state forest lands. These natural and only partly modified lands, however, protect different environments and habitats.

2.2.2 Importance of Brigalow Park Nature Reserve and Claremont

Brigalow Park Nature Reserve and Claremont are the only conservation areas in north-western NSW which contain significant remnant stands of the important brigalow (*Acacia harpophylla*) vegetation province of eastern Australia. This vegetation province is limited generally to an area bounded by the 762 and the 508 mm isohyets between 20 degrees and 29 degrees south latitude and previously extended in a belt for over 1100 kilometres from Narrabri in the south to Colinsville (Queensland) in the north. Its original distribution has been estimated at 12.3 million hectares but only one third remains because of clearing for wheat cropping and grazing.

The greatest area of brigalow occurs in Queensland and in that state a number of important conservation areas have been established, which protect extensive areas of the community. These include Southwood National Park (7 120 ha), Dipperu National Park (11 000 ha), Lonesome National Park (3 367 ha), the Kaka Mundi section of Carnarvon National Park (38 500 ha), Charleville National Park (6 359 ha), Mazeppa National Park (4 126 ha), Bendidee National Park (931 ha), Marengo National Park (895 ha), Snake Range National Park (1 209 ha), Palmgrove Fauna Reserve (25 616 ha) and Taunton Scientific Purposes Reserve (5 346).

Despite its once widespread occurrence, important remnant stands of brigalow are found in only three areas of New South Wales:

- south and west of Narrabri;
- north east of Moree; and
- north east of Bourke.

Other minor stands are found in disjunct localities on the western plains, for example north of Cobar, near Nyngan and Carinda and north of Roto. An isolated community also occurs in Willandra National Park.

A survey in the Narrabri/Moree area during 1982 found only 7 blocks which supported brigalow; these ranged in size from only 100 to 300 hectares in area. Two of these blocks have been acquired: Brigalow Park Nature Reserve and Claremont. The other five blocks are on private property.

Brigalow throughout its range demonstrates a number of important ecological relationships. J. E. Coaldrake (1970) describes this community and the eucalypt shrub woodlands, as "a zone of transition from the wetter coastal forests and woodlands to the arid Acacia shrublands dominated by Acacia and Chenopodiaceae. While climate determines this broad trend, the pattern within the region results from an intermingling of communities from both sources determined by soils and topography. There is no single climatic climax formation but many ecosystems, each with its own stable community. The commonest change is an oscillation in species composition of the lower layers within communities according to the vagaries of rainfall and fire."

In NSW the community grows primarily on flat or gently undulating land and on five different soil types. Four of these soil types are heavy clays:

- deeply gilgaied clays which occur in the Narrabri area and in parts of the Moree region;
- sedimentary clays in the Moree district;
- miscellaneous deep clays in the Moree district; and
- alluvial clays (claypans) that collect run-off following extremely heavy rainfall. This occurrence is restricted to small areas in the Bourke region.

The fifth type of soil is a light textured red sandy soil also found in the Bourke region.

Brigalow commonly stands 10-12 metres tall and grows in a layered forest or woodland form. Isbell (1962) (2) defined several different brigalow communities on the basis of co-dominant or sub-dominant tree species. Three of these communities predominate in New South Wales. They are:

- Virtually monospecific brigalow with only occasional belah (*Casuarina pauper*) and wilga (*Geijera parviflora*). This community is found only in patches on the deeply gilgaied clay soils.
- Brigalow-belah where belah is often co-dominant, particularly on sedimentary clays and on miscellaneous deep clays. On deeply gilgaied clays belah is less common. This is the most widespread association of the eastern brigalow. Wilga is very common; budda (*Eremophila mitchellii*) and to a lesser extent lime bush or wild orange (*Eremocitrus glauca*) are a prominent understorey and the ground cover is saltbush (*Atriplex* spp.), bluebush (*Maireana* spp.) and grasses. In some areas, for example south of Milguy in the Moree region, poplar box (*Eucalyptus populnea*) enters the community, and in the Narrabri region, Pilliga box (*E. pilligaensis*) occurs in some stands.
- Brigalow-gidgee (*Acacia cambagei*), found in the light textured red soils to the north east of Bourke. Other species in this community are wilga, budda and ironwood (*Acacia excelsa*). Ground cover includes bluebush, saltbush and grasses.

The Narrabri remnants are at the southern limit of the main distribution of brigalow in NSW and Queensland and represent the first two of the three communities described above.

In 1994 the occurrence of spiny peppergrass (*Lepidium dubium*) (Smith 1994) was confirmed on both Brigalow Park Nature Reserve and Claremont. This species is listed on Schedule 2 of the Threatened Species Conservation Act 1995 of NSW as a vulnerable plant and grows in heavy grey cracking clays that are likely to be periodically inundated and which remain wet for a few months each year. Agricultural developments have greatly reduced the range of spiny peppergrass over the past decade.

The black-striped wallaby (*Macropus dorsalis*) occurs in the two areas in low numbers. Recent surveys indicate that 20-30 black-striped wallabies remain in Brigalow Park Nature Reserve and 10-15 wallabies are to be found in Claremont. The black-striped wallaby is listed on Schedule 1 of the Threatened Species Conservation Act as endangered. Although the wallaby is still common in Queensland, particularly in regenerating brigalow country, it is now rare and may be facing extinction in the Narrabri area. Its future in the southern most part of its distribution is therefore doubtful.

In addition to its presence in the brigalow community, the black-striped wallaby is also present in forested lands with dense understorey and in rainforest margins on the east coast of Australia north of about the Clarence River.

It is assumed that the small mammal population on the two areas would have been significant before the advent of European settlement, but trapping has revealed only one specimen of yellow-footed antechinus (*Antechinus flavipes*) and the common dunnart (*Sminthopsis murina*)

Brigalow Park Nature Reserve and Claremont have an importance much greater than their intrinsic value. They are important as one part of an extensive conservation system of small nature reserves scattered throughout Coaldrake's 'transition zone' between the wet east and the arid western parts of eastern Australia on the north-western slopes and plains region of NSW.

Approximately 620 000 hectares of brigalow once occurred in NSW but commercial development of these lands commenced in earnest during the 1930s following the successful control of prickly pear and the introduction of heavy machinery. The greatest perturbation to the natural systems of the brigalow belt, therefore, has been the wholesale clearing of huge areas of the region for agricultural purposes. Brigalow was once widespread and supported an extensive wildlife community, much of which has now disappeared.

As is common with most lands in north-western NSW, Brigalow Park Nature Reserve and Claremont have been cleared and are now regenerating from major disturbance.

3. OBJECTIVES OF MANAGEMENT

3.1 GENERAL OBJECTIVES FOR NATURE RESERVES

The following general objectives relate to the management of nature reserves in New South Wales:

- * the protection and preservation of scenic and natural features;
- * the maintenance of natural processes;
- * the conservation of wildlife;
- * the preservation of Aboriginal sites and historic features: and
- * the encouragement of scientific and educational enquiry into environmental features and processes.

3.2 SPECIFIC OBJECTIVES FOR BRIGALOW PARK NATURE RESERVE AND CLAREMONT

In addition to these general objectives the following specific objectives also apply to the management of the Brigalow Park Nature Reserve and Claremont:

- * the protection of the nature reserve as a representative sample of the 'transition zone' of vegetation on the north-western slopes and plains and its associated animal communities; and
- * the protection of threatened and/or isolated plant and animal species and communities, particularly brigalow, spiny peppercress and black-striped wallaby.

3.3 OVERALL STRATEGY

Emphasis will be placed in the management of Brigalow Park Nature Reserve and Claremont on:

- * preparing and implementing species recovery plans for the brigalow, spiny peppercress and black-striped wallaby communities;
- * the enhancement of the value of the Brigalow Park Nature Reserve and Claremont as wildlife conservation areas by promoting the concept of wildlife corridors through liaison with neighbours, local council and appropriate government organisations;

- * the rehabilitation and revegetation of degraded sites;
- * the protection of the nature reserve and proposed nature reserve from weeds, feral animals and wildlife; and
- * the provision of information to the local community, particularly neighbours of the nature reserve, of the importance and purpose of management programs relating to the protection of natural features and the control of fire, weeds and feral animals.

4. POLICIES AND FRAMEWORK FOR MANAGEMENT.

This chapter contains the framework for the management of Brigalow Park Nature Reserve and Claremont, together with relevant background information. Management strategies are summarised under the following section headings:

Nature Conservation; and
Use of the Area.

Claremont and the north-east addition to Brigalow Park Nature Reserve are lands that have not yet been formally gazetted. These lands will be managed according to nature conservation principles to protect the environmental integrity of the area. Management of these lands will be in accordance with that of Brigalow Park Nature Reserve. The Service requires prior notification of any proposal by the Department of Mineral Resources to access Service-managed areas and will consider each activity on a case by case basis in order to minimise impacts on these areas.

4.1 NATURE CONSERVATION

4.1.1 Native Plants and Animals

The summary of native vegetation that follows is primarily based on the references cited in the Selected References at the end of this plan of management and local surveys undertaken by the University of New England and Service staff.

Brigalow remnants near Narrabri are dense open forests up to 20 metres high of almost monospecific stands of brigalow and mixtures of brigalow and belah. The understorey is characteristically open and consists of occasional large shrubs such as wilga, warrior bush and budda bush. The ground cover is sparse, often bare and consists of creeping saltbush (*Atriplex semibaccata*), other small shrubs, native and introduced grasses.

In the Narrabri area brigalow occurs on deeply gilgaied clay soils which are amongst the finest examples of their type in NSW. Their peculiar depression and mound micro-relief is an important part of this striking natural environment. The areas of gilgaied clay soils, which are of an alluvial origin, are surrounded by a `sea' of red sandy soils which are derived from the underlying Pilliga sandstones. The Narrabri brigalow remnants represent the southern limit of the main occurrences of brigalow in NSW and Queensland.

The brigalow and associated communities have minimal representation within nature conservation reserves within NSW and are proposed for declaration as a Critical Habitat for endangered species, populations and ecological communities, under the *Threatened Species Conservation Act 1995*.

Old growth bimple box (*Eucalyptus populnea*) and Pilliga grey box (*Eucalyptus pilligaensis*) are also dispersed throughout both areas. These tree species are particularly important in providing shelter and nesting hollows for birds and arboreal mammals.

Brigalow Park Nature Reserve and Claremont have one plant species, the spiny peppergrass (*Lepidium dubium*) recorded by Smith (1994) which is listed as endangered on ROTAP (the Schedule of Rare Or Threatened Australian Plants) and on Schedule 2 of the NSW *Threatened Species Conservation Act 1995*. The species is located in both areas, with Claremont containing the largest single population in existence with around 5 000 individual plants.

Under the Threatened Species Conservation Act a recovery plan and/or threat abatement plan must be prepared for endangered and vulnerable flora and fauna. The purpose of a recovery plan is to promote the recovery of a threatened species, population or ecological community with the aim of returning the species, population or ecological community to a position of viability in nature. A threat abatement plan outlines the management of key threatening processes with a view to their abatement, amelioration or elimination. The Act provides that a recovery plan or threat abatement plan for spiny peppergrass must be prepared within ten years from December 1995.

Both the areas were substantially cleared by ringbarking and pulling of vegetation some decades ago, to improve the country for grazing purposes. Brigalow Park Nature Reserve and Claremont were cleared in the 1950s and the addition to the north-east of the nature reserve was cleared in the late 1980s. Brigalow regenerates vigorously from root stock and the ground surface of the two areas is heavily gilgaied. For these reasons follow-up clearing and development were deemed too costly and did not take place. The result is dense growth of even-aged stands which is expected to thin out and mature over the next 50 to 100 years. The two areas demonstrate an unnatural mosaic of a number of stands of different but even-aged regrowth. Old tree trunks and roots lie strewn on the ground.

Extensive regeneration of the understorey species has also occurred. Three distinct understorey communities occur throughout the two areas, in association with overstorey species. These understorey communities, include budda bush, chenopods and both native and introduced grasses.

In 1979 a study was undertaken on the association between the black-striped wallaby and the remnant brigalow scrubs in NSW. This survey found that the wallaby was reduced in numbers and that it appeared to be restricted mainly to brigalow scrub in the Narrabri and Moree to Boggabilla areas. It appears that the black-striped wallaby depends on, or prefers, the thick scrub cover offered by brigalow as part of its habitat requirements. Other studies have suggested that the wallaby is most abundant in regenerating brigalow communities. It is not known, however, what the habitat requirements, or preferences, of the wallaby were before land clearing and development.

Further studies by the University of New England have identified important aspects of the diet of black-striped wallabies. The greatest proportion of their diet in both summer and winter was grasses. Generally the brigalow community does not support a vigorous ground layer of grasses. Brigalow Park Nature Reserve, in particular is deficient in grass communities, although areas of Claremont that have been cleared are grassed and appear to be favoured by the black-striped wallaby.

Accordingly, the brigalow communities on the two areas provide only part of the habitat requirements for the wallaby and it is proposed to ensure that areas of open grassland continue to be available to the population of black-striped wallabies on the two areas. Maintaining grassland will also favour the spiny peppergrass, as the studies by Smith in 1994 indicated that this species also generally occurs in association with grasslands.

The *Native Vegetation Conservation Act 1997* requires identified regions, with committees made up of various interest groups and stakeholders, to develop Regional Vegetation Management Plans (RVMP). The Service will provide input into the development of Regional Vegetation Management Plans to seek adequate conservation of brigalow and grassland communities.

Black-striped wallaby populations, movement and feeding patterns are monitored by a program of regular spotlighting in the two areas. Information obtained from monitoring will be used to improve management of the two areas for the black-striped wallaby.

The black-striped wallaby is listed on Schedule 1 of the *Threatened Species Conservation Act 1995* as an endangered species. The Act provides that a recovery plan or threat abatement plan for the black-striped wallaby must be prepared within five years from December 1995.

The black-striped wallaby is the most significant mammal known to occur on the two areas. Other mammals include the eastern grey kangaroo (*Macropus giganteus*) and the red-necked wallaby (*Wallabia rufous*). A program of small mammal trapping has discovered only the common dunnart (*Sminthopsis murina*) and yellow-footed antechinus (*Antechinus flavipes*). It is understood that the region generally supported a rich assemblage of small mammals, but the absence of ground cover and the pressure from introduced predators may be an important limitation on the re-establishment of small mammal populations.

Only one species of possum, the brush tailed possum (*Trichosurus vulpecula*) has been recorded in the two areas and an unknown species of bat. The limited number of old growth eucalyptus species with hollows found in the two areas could explain the low diversity of arboreal mammals.

Surveys conducted in the two areas have recorded a number of other animal species. These include around sixty species of birds that are permanent residents of the area or are migratory. Most birds were identified on the fringe of the woodland and grassland or in the woodlands where there are different levels of overstorey with a greater diversity of understorey species.

No lists of other classes of animals have been compiled for the two areas.

4.1.2 Introduced Plants and Animals

An introduced species is defined as any plant or animal not native to Brigalow Park or Claremont. Introduced species within the two areas and on adjoining land are of concern because they have the potential to have detrimental effects on ecological values and can spread to and from neighbouring land. The *Noxious Weeds Act 1993* places an obligation upon public authorities to control noxious weeds on land that they occupy to the extent necessary to prevent such weeds spreading to adjoining lands.

A number of introduced plant species have been recorded in the two areas, including, prickly pear (*Opuntia stricta*), saffron thistle (*Carthamus tinctorious*), spear thistle (*Cirsium vulgare*) and the declared noxious weeds Bathurst burr (*Xanthium spinosum*), African box thorn (*Lycium ferocissimum*) and noogoora burr (*Xanthium strumarium*). The incidence of introduced plant species in the two areas is, however, not considered significant but their occurrence is being regularly controlled.

There are a number of introduced animals which have been recorded in the two areas, including hares (*Lepus capensis*), house mice (*Mus musculus*), goats (*Capra hircus*) foxes (*Vulpes vulpes*) and pigs (*Sus scrofa*).

A strategy for controlling introduced plants and animals has been prepared for all national parks and nature reserves within the Narrabri area. The strategy identifies which introduced plants and animals occur in Brigalow Park Nature Reserve and Claremont and programs for their control. Feral pigs and foxes have been targeted as the two main pest species in the two areas. Current methods of control include a helicopter shooting program and trapping program for feral pigs and baiting programs for foxes using 1080. These programs are undertaken with the co-operation of neighbours.

4.1.3 Fire Management

There has been no recorded history of fire in the two areas, although burning was thought to be a part of the technique of clearing brigalow. The even regrowth of brigalow would indicate that the majority of the two areas was cleared about 30 to 40 years ago.

Hot fires tend to kill brigalow roots thus preventing sucker regrowth, whilst light fires will reduce sucker numbers. The regrowth of many co-dominant species, for example Rhodes grass, is stimulated by burning and may further reduce the ability of brigalow suckers to grow. For the brigalow regeneration process to continue, it is intended to exclude fires from the two areas. Further research is required, however, to establish the role of fire in the maintenance of brigalow communities.

It is not a priority to prepare a fire management plan for the two areas, because of their relatively small size and the infrequency of wild fire. The Service is a member of the local Bushfire Management Committee pursuant to section 50 of the *Rural Fires Act*

1997. The Service will contribute to the preparation of a Shire-wide Operation Plan and Risk Management Plan and will manage the two areas in accordance with those plans.

An important objective of management for the two areas is to promote an awareness and understanding, particularly amongst neighbours of the two areas and visitors, of the importance of the brigalow community and of the management programs necessary to ensure its survival and recovery.

Management Strategies

- * All management activities within Brigalow Park Nature Reserve and Claremont will incorporate appropriate soil erosion and sedimentation control practices.
- * Native vegetation will be managed to:
 - conserve endangered or uncommon communities and species; and
 - maximise habitat values for native animal species, particularly black-striped wallabies.
- * The consent of landholders to Voluntary Conservation Agreements for areas of brigalow vegetation and grasslands on private property will be sought.
- * The Service will seek the adequate conservation of brigalow and grasslands through appropriate input into the development of Regional Vegetation Management Plans.
- * Monitoring points will be established to evaluate the survival and recovery of brigalow.
- * Monitoring of black-striped wallaby populations will continue.
- * Recovery plans for the black-striped wallaby and spiny pepper cress will be implemented when prepared.
- * The NPWS Narrabri Area Pest Strategy will be annually reviewed to evaluate the effectiveness of programs implemented for Brigalow Park Nature Reserve and Claremont.
- * The Service will cooperate with other agencies and landholders in implementing control programs for introduced plants and animals that are consistent with the policies and procedures adopted by the Service.
- * Introduced animals will be controlled where they have an unacceptable impact on native plant and animal species. Priority will be given to the control of feral pigs and foxes and noxious weeds of an invasive nature.
- * The management of fire will seek to ensure:
 - protection of human life and property adjacent to the two areas;
 - conservation of threatened and biogeographically significant plant and animal species and communities; and

- maintenance of plant and animal species and communities through the provision of fire regimes compatible with their conservation, with regard to the fact that fire events may have an adverse impact on brigalow.
- * Fire in the two areas will be managed in accordance with section 52 Fire Management Plans prepared under the Rural Fires Act.
- * Liaison will be maintained and co-operative strategies developed with bushfire brigades, local government and neighbours to ensure coordination in fire management in the two areas and on adjoining lands.
- * All areas disturbed by fire suppression operations will be rehabilitated as soon as possible after the fire event.
- * Records and maps will be maintained of all fires as they occur.

4.2. USE OF THE AREA

4.2.2 Research

The purpose of scientific study in the nature reserve and the proposed nature reserve is to improve the Service's understanding of their nature conservation values, particularly that of brigalow communities, the status and ecology of the spiny peppercross community and the population of blacked-striped wallabies. Research will also establish the requirements for the management of these particular species. Data from research studies and surveys will be utilised in the management of the areas generally.

The Service does not itself have the resources to undertake any long term research in the nature reserves. There are, however, a number of institutions in the region which may use the nature reserves for research purposes and staff of the University of New England, School of Biological Sciences have undertaken research in the area.

As part of the management of Brigalow Park Nature Reserve and Claremont, a prospectus will be prepared for the involvement of research organisations in research on the two areas.

4.2.2 Management Operations

Both areas have boundary fencing, which is essential to prevent stock entering the two areas and having a detrimental impact on their natural values. It is the neighbour's legal responsibility to maintain the boundary fence to prevent stock entering the two areas but the Service's fencing policy provides that, subject to funding and other priorities, assistance with materials can be given as a part of a fencing agreement with a neighbour.

Two small tanks are located on Claremont and one small tank is located on Brigalow Park Nature Reserve. These tanks are important for small macropods, other small mammals and for birds. Water is also freely available on neighbouring properties.

Management tracks have been constructed around the boundary of Brigalow Park Nature Reserve and around three sides of Claremont but have become overgrown and require maintenance. These trails not only provide a fire break, but also provide access for other management programs such as for pest control. These tracks are shown on the map, centre pages.

A concern of the Service and neighbours is the unauthorised use of the two areas for hunting. To reduce this occurrence no other management tracks, other than those existing, will be maintained and access will be restricted to approved research, educational and management purposes.

Management Strategies

- * A prospectus will be prepared as a guide to preferred research projects in Brigalow Park Nature Reserve and Claremont.
- * Priority will be given to research and inventory into:
 - the dynamics of the population of the black-striped wallaby on Brigalow Nature Reserve and Claremont;
 - sampling brigalow communities throughout the region to establish a comparison between brigalow protected on the two conservation areas and brigalow occurring on other lands;
 - monitoring the regeneration of brigalow and associated communities on the two conservation areas;
 - the management requirements of spiny peppercreep communities on both areas and nearby lands.
 - the animals of the two areas including reptiles, amphibians and invertebrates; and
 - establishing a fire management program beneficial to the survival and recovery of brigalow.
- * The boundary fences will be maintained by the adjoining landholder and replaced as required. Subject to Regional priorities and funding, and as a part of the Service's fencing policy, assistance with materials may be given as a part of a fencing agreement with a neighbour.
- * The three tanks on Brigalow Park Nature Reserve and Claremont will not be maintained so as to permit a slow transition to more natural conditions.
- * Access to Brigalow Park Nature Reserve and Claremont will be restricted to approved research, educational and management purposes. General public access and use will not be permitted.

5. PLAN IMPLEMENTATION

This plan of management is part of a system of management developed by the National Parks and Wildlife service. The system includes the National Parks and Wildlife Act, management policies, established conservation and recreation philosophies, and strategic planning at NPWS Corporate, Directorate, Regional and Area levels.

Implementation of this plan will be undertaken within the annual programs of the Service's Northern Plains Region. Priorities for actions have been listed below, but will be subject to regional strategic planning, the availability of necessary staff and funds and to any special requirements of the Director-General or Minister.

Regional programs are subject to ongoing review, within which, works and other activities carried out at Brigalow Park Nature Reserve and Claremont are evaluated in relation to the objectives laid out in this plan.

The environmental impact of all development proposals will continue to be assessed at all stages of the development and any necessary investigations undertaken in accordance with established environmental assessment procedures.

Section 81 of the Act requires that this plan shall be carried out and given effect to, and that no operations shall be undertaken in relation to the nature reserve unless they are in accordance with the plan. However, if after adequate investigation, operations not included in the plan are found to be justified, this plan may be amended in accordance with section 76(6) of the Act.

Action	Plan Reference
<hr/>	
High Priority	
Provide input into the development of Regional Vegetation Management Plans to seek the adequate conservation of brigalow and grasslands	4.1
Establish monitoring points, within the areas, to evaluate the survival and recovery of brigalow	4.1
Monitor black-striped wallaby populations	4.1
Prepare prospectus for encouraging scientific research on the two areas	4.2

Medium Priority

- Encourage research into fire and other management requirements for brigalow and spiny pepper cress, through obtaining funding for research organisations . 4.2
- Implement recovery plans for the black striped wallaby and spiny pepper cress when prepared 4.1
- Promote Voluntary Conservation Agreements for areas of brigalow and grassland vegetation on private property 4.1
- Conduct yearly aerial pig shooting and fox baiting programs in co-operation with neighbours 4.1
- Develop Section 52 fire management plans in association with the Narrabri Shire Council and neighbours 4.1

Low Priority

- Monitor boundary fencing condition and if possible negotiate boundary fencing agreements with neighbours. 4.2
- Sample brigalow communities throughout the region to establish comparisons between areas in reserves and those unprotected 4.2
- Monitor the presence of feral animals and weeds within the two areas and review District pest strategy as required 4.1

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