

IMBOTA NATURE RESERVE
PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Conservation (NSW)

May 2004

This plan of management was adopted by the Minister for the Environment on 26 May 2004.

Inquiries about this plan of management for Imbota Nature Reserve should be directed to the ranger at the Armidale Area Office, 85 Faulkner Street, Armidale, or by telephone on 02 6776 0000.

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FOREWORD

Imbota Nature Reserve is located on the eastern edge of the central New England Tablelands approximately 10 km south east of Armidale. The reserve, formerly the Eastwood State Forest, has an area of approximately 218ha and was dedicated in 1999.

Imbota Nature Reserve protects a small but significant remnant of Tablelands dry open forest close to Armidale in a landscape of predominantly cleared pastoral land. A total of 179 species of plants have been recorded in the reserve.

The ecosystems of the reserve support a range of vertebrate fauna. Surveys have identified 129 bird and 9 mammal species. The reserve is highly significant for declining woodland bird species. The reserve has a long history of use by the University of New England for teaching, research and extension purposes, particularly pertaining to woodland birds.

A draft plan of management for Imbota Nature Reserve was placed on public exhibition from 11 October 2002 until 3 February 2003. The exhibition of the draft plan attracted 13 submissions that raised 10 issues. All submissions received were carefully considered before adopting this plan.

The management of Imbota Nature Reserve will emphasise the protection of the natural biodiversity of the reserve, continuing research, and promotion of community understanding and appreciation of the conservation values of the reserve. A parking area for up to 10 cars will be provided adjacent to Long Swamp Road, and a parking area for up to 4 cars adjacent to Castledoyle Rd, with walking access provided for the public in the reserve.

This plan of management establishes the scheme of operations for Imbota Nature Reserve. In accordance with Section 76 of the *National Parks and Wildlife Act 1974*, the plan of management is hereby adopted.

BOB DEBUS
MINISTER FOR THE ENVIRONMENT

1. NATURE RESERVES IN NEW SOUTH WALES

1.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of nature reserves in New South Wales (NSW) is in the context of the legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS). The policies arise from the legislative background and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic site conservation, recreation, commercial use, research and communication.

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *NSW Environmental Planning and Assessment Act 1979* requires the assessment and mitigation of environmental impacts of any works proposed in this plan.

1.2 NATURE RESERVES IN NEW SOUTH WALES

Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act, nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

Nature reserves differ from national parks in that they do not have as a management principle to provide for visitor use.

2. IMBOTA NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Imbota Nature Reserve (referred to herein as ‘the reserve’) is located on the eastern edge of the central New England Tablelands approximately 10 km south east of Armidale. The location of the reserve, nearby Service estate and towns are shown in figure 1. The reserve is one of 12 small, isolated reserves in the south of the New England Tablelands bioregion (an area defined by a combination of repeated biological and geographic criteria, rather than geopolitical considerations). These reserves were gazetted to conserve remnants of previously widespread Tablelands vegetation communities as part of the Regional Forest Agreement (RFA) process.

The reserve, formerly the Eastwood State Forest, has an area of approximately 218ha and was dedicated in 1999. In accordance with NPWS policy and in consultation with the local Aboriginal community, the reserve was given the local Anaiwan Aboriginal name for magpie.

The reserve lies within Armidale Dumaresq Shire. Much of the surrounding land has been extensively cleared and is used for grazing and other rural activities.

This plan applies both to the land currently reserved as Imbota Nature Reserve and to any future additions to the reserve. Where management strategies or works are proposed for additions that are not consistent with the plan, an amendment to the plan will be required.

2.2 LANDSCAPE CONTEXT

Natural and cultural heritage and on-going use are strongly inter-related and together form the landscape of an area. Much of the Australian environment has been influenced by past Aboriginal and non-Aboriginal land use practices, and the activities of modern day Australians continue to influence bushland through recreational use, cultural practices, the presence of introduced plants and animals and in some cases air and water pollution.

The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans.

Both Aboriginal and non-Aboriginal people place cultural values on natural areas, including aesthetic, social, spiritual, recreational and other values. Cultural values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness natural and cultural heritage, non-human threats and on-going use are dealt with individually, but their inter-relationships are recognised.

2.3 NATURAL AND CULTURAL HERITAGE

Landform, Geology and Soils

The reserve encompasses a minor ridge with gentle south-west and north-east facing slopes ranging from 5-10%. Elevations range from approximately 980 to 1 050 metres above sea level. Poorly defined ephemeral drainage lines in the reserve flow into Powers Creek and Commissioners Waters. These flow into the Gara River which joins the upper Macleay River.

The reserve lies on a geological formation known as the Sandon beds, which are characterised by metasedimentary rock consisting predominantly of lithic greywacke, slate, chert, jasper, metabasalt, phyllite and schist. The Sandon beds are approximately 1000 km² in size. This reserve together with nearby Yina and more distant Booroolong Nature Reserves are the only reserves within the bioregion that lie on this geology.

Soils are characteristically skeletal, fragmented rocky soils (lithosols) and poorly defined sandy soils with low nutrient value (solods). The lithosols are generally associated with the slightly steeper upslope areas and drainage lines. The solods occur on flat and relatively dry areas and are generally powdery. The solods are easily eroded when disturbed.

Native Flora

The reserve protects a small but significant remnant of Tablelands dry open forest close to Armidale in a landscape of predominantly cleared pastoral land. The reserve contributes to the protection of dry open forest and associated biodiversity in the New England Tableland bioregion. Since European settlement, 60% of dry open forest in the bioregion has been cleared. Only 12% (47 300ha) of the area remaining is protected within conservation reserves within the bioregion. Nationally agreed criteria specify that for vegetation communities that have sustained a reduction in area of 50% or more since European settlement, 30% of the remaining area should be reserved within the conservation estate to minimise loss of biodiversity (Commonwealth of Australia, 1995 & 1997).

A total of 179 species of plants have been recorded in the reserve (Hunter 2003). The most common species is broad-leaved stringybark (*Eucalyptus caliginosa*). Eight of the ten most common species were herbs, five of which were grasses. Across the reserve, the understorey, in terms of grasses, is characterised by snow grass (*Poa sieberiana*), meadow rice grass (*Microlaena stipoides*), hedgehog grass (*Echinopogon caespitosus*) and kangaroo grass (*Themeda triandra*). The overstorey is characterised by the dominance of broad-leaved stringybark (*Eucalyptus caliginosa*), with a subordinate mix of ribbon gum (*E. viminalis*), Blakely's red gum (*E. blakelyi*), and yellow box (*E. melliodora*). Three shrub species of dominance within the reserve are peach heath (*Lissanthe stringosa*), common cassinia (*Cassinia quinquefaria*) and saloop (*Einadia hastata*).

Only one plant species found on the reserve to date is listed as a rare or threatened plant by Briggs & Leigh (1996). No plants were found that are currently listed on the TSC or EPB&C Acts. A total of eight regionally significant species were found, most of which are regionally rare. They are:

Species	Conservation Status
<i>Austrodanthonia penicillata</i>	Regionally Rare
<i>Cassinia</i> sp B.	Regionally Rare
<i>Echinopogon nutans</i>	Regionally Rare
<i>Eragrostis molybdea</i>	Regionally Rare
<i>Nertera granadensis</i>	Regionally Rare
<i>Ozothamnus adnatus</i>	3RC-# (Copeland & Hunter 1999)
<i>Vittadinia muelleri</i>	Regionally Rare
<i>Wahlenbergia luteola</i>	Regionally Rare

Geographic range >100km, rare, size of reserved population not known

Two of the four communities within the reserve are of conservation concern:

Floristic Assemblage	Conservation Status
Broad-leaved Stringybark Grassy Woodlands (A)	Poor in general but of lesser concern in this region.
Broad-leaved Stringybark Grassy Woodlands (B)	Poor in general but of lesser concern in this region.
Manna Gum Woodlands	Endangered. 0.04% left on the Guyra 1:100000 Map Sheet
Red Gum – Yellow Box Grassy Woodlands	Endangered. 0.003% left on the Guyra 1:100000 Map Sheet

The reserve was grazed at various intensities under former tenures, and has experienced a very low fire frequency. Grazing, as well as a low fire frequency, may have had an adverse effect on the diversity of the herb and shrub layer.

Native Fauna

The forest and woodland ecosystems of the reserve support a range of vertebrate fauna. Surveys have identified 129 bird and 9 mammal species (NPWS, 1999 and H. Ford, pers. comm). Herpetofauna and invertebrates have not been actively searched for within the reserve.

The reserve is highly significant for declining woodland bird species. Of the 20 declining woodland bird species identified throughout NSW (Reid, 1999), 12 have been recorded in the reserve. A number of these species exist in significant numbers within the reserve. Larger birds of prey also use the reserve as a breeding area.

Two endangered bird species, the regent honeyeater (*Xanthomyza phrygia*) and the swift parrot (*Lathamus discolor*), have been recorded in the reserve. The following vulnerable species have been recorded in the reserve: the square-tailed kite (*Lophoictinia isura*), glossy black-cockatoo (*Calyptorhynchus lathami*), speckled warbler (*Pyrrholaemus saggitata*), the brown tree creeper - eastern subspecies (*Climacteris picumnus victoriae*), the diamond firetail (*Stagonopleura guttata*) and the barking owl (*Ninox connivens*).

The reserve is large enough to support sustainable populations of small mammal species, and provide habitat for large macropods and arboreal mammals in conjunction with surrounding areas. The koala (*Phascolarctos cinereus*), listed as vulnerable under the *Threatened Species Conservation Act 1995*, has been recorded in the reserve. Many smaller mammal species are likely to have disappeared from the reserve area with the introduction of the fox and rabbit to the Tablelands in the late 1800s.

Because of the small size and isolation of the reserve, linking with other forest remnants is important to protect and enhance native vertebrate populations.

Cultural Heritage

Aboriginal History

Aboriginal communities have an association and connection to the land. The land and water biodiversity values within a whole landscape context are the centre of Aboriginal spirituality and contribute to Aboriginal peoples identity. Aboriginal communities associate natural resources with the use and enjoyment of valued foods and medicines, caring for the land, passing on cultural knowledge and strengthening social bonds. Aboriginal heritage and nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

Although little is known about past Aboriginal association with the reserve, there is substantial evidence of Aboriginal occupation in close proximity to the reserve. Six open camp sites are known within 5 km of the reserve, as well as evidence of Aboriginal occupation at Gara Gorge, 8 km to the east. It is possible that there may be unrecorded sites within the reserve.

Prior to European arrival, it is believed that the Tablelands provided resources for year-round occupation, with groups undertaking a series of short journeys, principally within the Tablelands, coupled with seasonal long journeys between the Tablelands and western slopes. Resource use in the Tablelands is believed to have focussed on woodlands, native grasslands and swamplands (Sullivan, undated).

The reserve falls within the area of the Armidale Local Aboriginal Land Council.

History Since European Occupation

John Oxley was the first European to visit the New England Tablelands in 1818, and European squatters began to occupy land in the late 1820s. From about 1832 the area was an outlying part of the Gostwyck run of the Dangar family (Ferry, 1999). Part of the land (about 40%) was reserved from sale for preservation and growth of timber in 1887 (Reserve No. 3443) and the remainder in 1901 (Reserve No. 32119). These reserves were amalgamated (as Reserve No. 39381) in 1905 (NSW Government Gazette 14 May 1887, 6 February 1901 & 19 August 1905).

Harvesting of hardwood commenced in the region in the 1920s. In general, harvesting was sporadic because of the unsuitability of the timber. Some logging has occurred in the reserve but no systematic logging has taken place since the 1930s due to the poor condition of the timber for logging purposes. Prior to dedication as a nature reserve, timber was removed for firewood and fencing purposes. Removal of standing or dead timber is no longer permitted within the reserve.

Grazing by domestic stock occurred over the reserve under previous tenures. Three dams and a loading ramp were constructed during this time. The loading ramp, which is on the western boundary, may be of local historic importance.

2.4 RESEARCH AND EDUCATION

The reserve is one of the most easily accessible remnant woodlands of the Tablelands. It has a long history of use by the University of New England (UNE) for teaching, research and extension purposes, particularly pertaining to woodland birds. This use is continuing, and will be maintained in the future. The value of the reserve for education activities for schools and other educational institutions as well as for community education purposes is also recognised.

2.5 VISITOR USE

There are currently no visitor facilities within the reserve. Visitor facilities exist within Oxley Wild Rivers National Park at Gara Gorge, 8 km by road from the reserve, and Dangars Falls, 25 km by road from the reserve. Reserve identification and regulatory signs are located at the Long Swamp Road and Castledoyle Road entrances.

Recreational activities not consistent with the study of nature and natural environments are generally considered inappropriate uses of a nature reserve. Activities such as horseriding, motorcycle riding, mountain biking, cycling, four wheel driving, army reserve and cadet exercises, orienteering, walking of dogs and hunting have occurred within the reserve area under previous tenures. These activities are inconsistent with the purposes of a nature reserve under the NPW Act. Many of these activities have decreased with the installation of regulatory signage and liaison with relevant user groups. The reserve currently receives low levels of use for appropriate passive recreation such as nature study, walking and birdwatching.

2.6 THREATS TO RESERVE VALUES

Introduced Plants

Blackberry (*Rubus fruticosus*), sweet briar (*Rosa rubiginosa*), pyracantha (*Pyracantha* spp), privet (*Ligustrum* spp) and serrated tussock (*Nasella trichotoma*) have been found within the reserve. These species can competitively exclude native plant species and provide habitat for feral animals. Annual control programs have decreased the distribution and occurrence of blackberry and serrated tussock. Sweet briar, privet and Pyracantha are known from small isolated occurrences. A survey of other weeds in the reserve has not been undertaken. The small size of the reserve, inappropriate public use and proximity to other areas with introduced plants allows weed species the opportunity for ongoing and recurrent invasion.

Introduced Animals

Foxes (*Vulpes vulpes*), rabbits (*Oryctolagus cuniculus*), common starlings (*Sturnus vulgaris*), hares (*Lepus capensis*) and feral cats (*Felis catus*) are found in the reserve in small numbers. These species can prey on native fauna and competitively exclude native wildlife. They are also present in surrounding lands.

Fire

Fire is a natural feature of the environment of the reserve and is essential to the survival of some plant communities. Frequent or regular fire, however, can cause loss of particular plant and animal species and communities. The effects of fire on the biota of the reserve remain unclear. Fire could also damage fences and threaten neighbouring land. Fires are unlikely to occur within the reserve due to natural causes, but may spread from neighbouring land or be deliberately lit within the reserve.

State Forests records indicate there was one small fire within the reserve in 1969, and it is likely that there have been no fires within the reserve since that time. An inappropriate burning regime or wildfire may contribute to a significant loss of biodiversity within the reserve. The UNE is currently undertaking research into vegetation response to different fire intensities within the reserve. A number of small research burns have been undertaken within the reserve as part of this research.

Isolation and fragmentation

Clearing of vegetation within the bioregion has not only resulted in loss of biodiversity but also fragmentation of habitat. Long term conservation of biodiversity both within the bioregion and locally within the reserve depends upon protection, enhancement and connection of remaining habitat across the landscape, involving public and private land remnants.

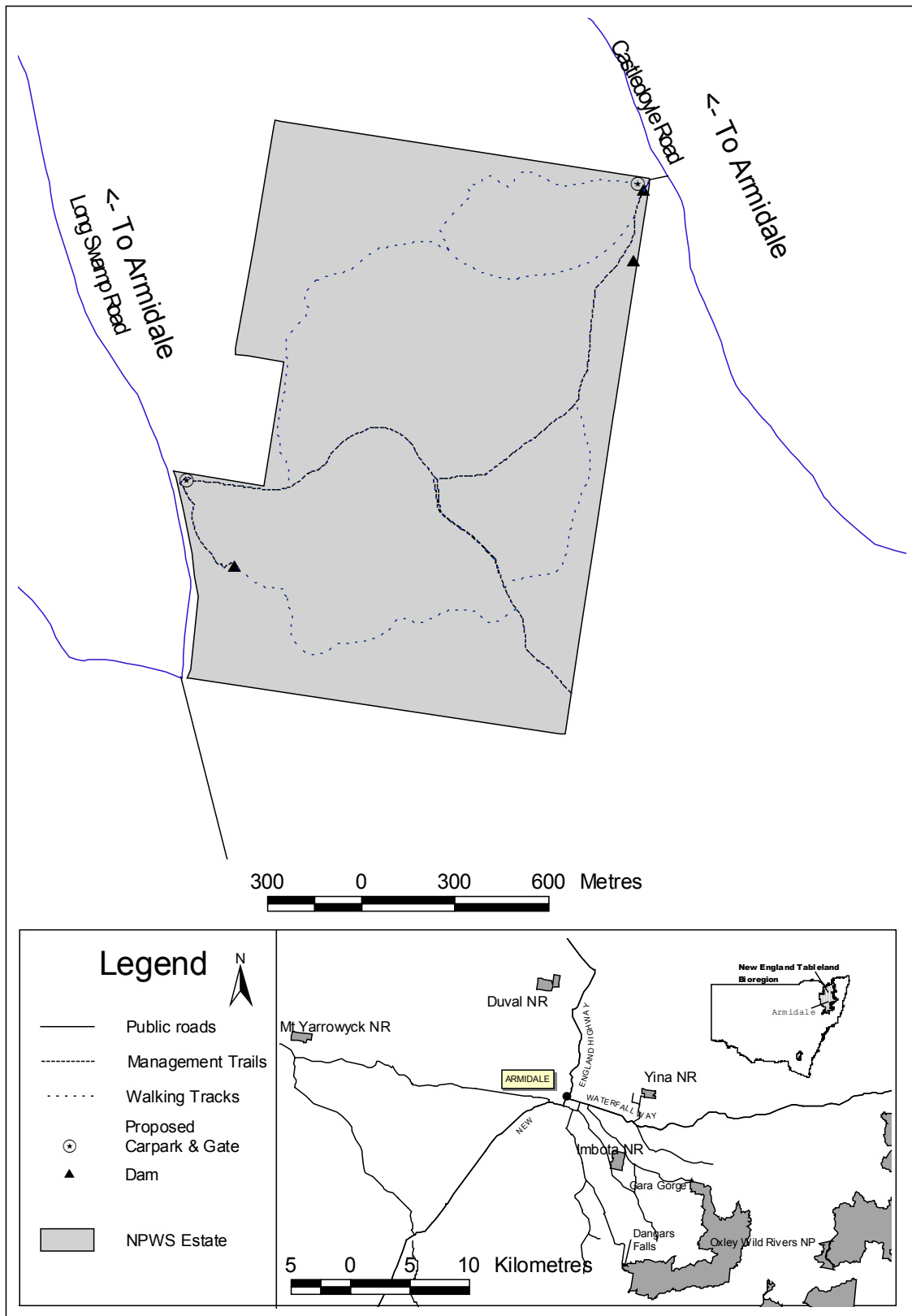


Figure 1: Imbota Nature Reserve: Management infrastructure and regional context

3. MANAGEMENT ISSUES AND STRATEGIES

Current situation	Desired outcomes	Strategies	Priority
Soil conservation			
<p>Soil erosion is a problem on roads and trails and at reserve entrances. Minor erosion gullies exist along some ephemeral watercourses, in particular along the north west boundary.</p> <p>The dam nearest Castledolye Road is surplus to management needs, is badly eroded and has safety concerns because of the proximity to the proposed car park.</p>	<ul style="list-style-type: none"> • Soil erosion is minimised. • Disturbed areas are rehabilitated. 	<ul style="list-style-type: none"> • Roads required for management purposes will be maintained to appropriate standards. Other roads and trails will be maintained as walking trails or closed and rehabilitated (see figure 1). • Undertake all ground disturbance works in a manner that minimises erosion. • Drain the small dam nearest Castledolye Road, remove wall, restore contours and undertake stabilisation and rehabilitation works. 	<p>High</p> <p>High</p> <p>Medium</p>
Native plant and animal conservation			
<p>Considerable information exists on the avifauna of the reserve. There is a lack of information on herpetofauna and small mammals, particularly relating to rare or threatened species.</p> <p>Unauthorised firewood gathering and unrestricted vehicle access have degraded significant areas of the reserve's vegetation.</p> <p>The reserve is one of the few conserved areas on the New England Tablelands that provide resources and habitat for woodland fauna species in a landscape of substantially cleared grazing land.</p>	<ul style="list-style-type: none"> • All native plant and animal species and communities are conserved and enhanced where possible. • Biodiversity is maintained, and vulnerable or endangered species are conserved in the reserve. 	<ul style="list-style-type: none"> • Liaise with UNE to access and document past research on plants and animals in the reserve. • Assess past research and include results in Atlas of NSW Wildlife. • Undertake survey of flora and fauna, particularly for rare or threatened flora and fauna. • Rationalise management trails and prohibit public vehicle access into the reserve (see management operations and public use below). • Work with relevant neighbours, Landcare groups, local citizens wildlife corridors groups, vegetation management committees and others to encourage conservation of remnant native vegetation in the vicinity of the reserve and to identify potential wildlife/ habitat corridors to link to other remnant native vegetation areas. 	<p>High</p> <p>High</p> <p>Moderate</p> <p>High</p> <p>High</p>

Current situation	Desired outcomes	Strategies	Priority
Cultural heritage			
<p>There are a number of Aboriginal occupation sites nearby but none have been recorded on the reserve. No cultural heritage assessment has been undertaken within the reserve. There is also a loading ramp near the Long Swamp Road entrance that is badly deteriorated and unsafe.</p>	<ul style="list-style-type: none"> Cultural heritage sites within the reserve are identified, recorded and managed in accordance with their significance. 	<ul style="list-style-type: none"> Precede all ground disturbance work with a check for cultural features. Consult and involve the local Aboriginal community, relevant Elders, individuals and the Armidale Local Aboriginal Land Council in all aspects of management of identified Aboriginal sites, places and values. Encourage research into the cultural heritage of the reserve. Sites identified will be recorded on the NPWS sites register. Assess the significance of the loading ramp and manage risk associated with public access. Record but do not maintain the loading ramp. 	<p>High</p> <p>High</p> <p>Medium</p> <p>Low</p>
Introduced species			
<p>Various weed and feral animal species occur within the reserve.</p> <p>At least 5 weed species have been identified, but are not widespread. These include blackberry, serrated tussock, privet, sweet briar and Pyracantha.</p> <p>Foxes, rabbits and hares occur in the reserve. Feral cats may also occur.</p>	<ul style="list-style-type: none"> Introduced species are controlled and where possible eradicated. 	<ul style="list-style-type: none"> Control programs will be implemented in accordance with the Regional Pest Management Strategy and individual pest management control plans. Control and where possible eradicate introduced plants and animals from the reserve. Continue to undertake integrated weed species control programs in liaison with New England Noxious Plants County Council. Undertake regular integrated feral animal control with Armidale Rural Lands Protection Board, Landcare groups, neighbours and others using appropriate control measures such as baiting and trapping. Develop and implement a program to monitor the distribution of introduced species in the reserve. 	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>

Current situation	Desired outcomes	Strategies	Priority
<p>Fire management</p> <p>Past history suggests the reserve poses a low fire risk to persons and property adjacent to the reserve.</p> <p>The local Rural Fire Service brigade is Castledoyle.</p> <p>The effects of fire on the biota of the reserve remain unclear. Research to determine vegetative responses to differing fire regimes is currently being undertaken by the UNE.</p> <p>Three dams are present on the reserve and provide water for fire fighting. The dam near Castledoyle Road is badly eroded and has safety concerns because of the proximity to the proposed car park.</p>	<ul style="list-style-type: none"> • Persons and property are protected from bushfire. • Identified cultural heritage features are protected from damage by fire. • Unrestricted fires leaving or entering the reserve are suppressed. • Fire regimes are appropriate for conservation of plant and animal species and communities. • All of the reserve is not burnt in any single wildfire event • Dams provide accessible resources for fire fighting. 	<ul style="list-style-type: none"> • Prepare and implement fire management strategies for the reserve. • Participate in district Bush Fire Management Committees. Maintain coordination and cooperation with Castledoyle Rural Fire Service brigade, Armidale Fire Brigade and neighbours with regard to fuel management and fire suppression. • Encourage further research into appropriate burning regimes for the reserve. • Use prescribed fire to achieve fire regimes appropriate for maintenance of habitat when identified in the proposed fire management plan. • Prohibit camping, open fires and restrict public vehicle access (see public use below) to remove potential ignition sources for unscheduled fires. • Retain two dams (see Soil conservation above). Repair dam walls, excavate silt and maintain access to dams to provide resources for fire fighting. 	<p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>High</p> <p>Medium</p>

Current situation	Desired outcomes	Strategies	Priority
Public Use			
<p>Public access is available from Long Swamp Road and Castledoyle Road. No facilities exist within the reserve. At present there is unrestricted vehicle access into the reserve. Other inappropriate uses have occurred in the past and continue to occur.</p>	<ul style="list-style-type: none"> • The local community is aware of the values of the reserve and of management programs. 	<ul style="list-style-type: none"> • Provide a parking area for up to 10 cars adjacent to Long Swamp Road, and a parking area for up to 4 cars adjacent to Castledoyle Rd. 	High
<p>Public use of the reserve must be carefully managed, as it is a relatively small and significant area of remnant vegetation.</p>	<ul style="list-style-type: none"> • Walking access is provided for the public in the reserve. 	<ul style="list-style-type: none"> • Install a locked gate and barrier fence at each carpark to restrict public vehicular access beyond the carparks. 	High
<p>Isolated rubbish dumping has occurred within the reserve, potentially introducing pest and weed species.</p>	<ul style="list-style-type: none"> • Visitor use is nature based and ecologically sustainable. 	<ul style="list-style-type: none"> • Install minimal impact, interpretive and regulatory signage at the carparks. 	Medium
	<ul style="list-style-type: none"> • Rubbish is removed and illegal dumping of rubbish ceases. 	<ul style="list-style-type: none"> • Encourage activities that include appreciation and enjoyment of wildlife, natural environments and natural phenomena such as bushwalking, bird watching and nature study. 	High
		<ul style="list-style-type: none"> • Allow walking along management trails and designated walking trails. 	Medium
		<ul style="list-style-type: none"> • Prohibit activities that are not consistent with the appreciation of wildlife, natural environments and natural phenomena; including all forms of driving, camping, horse riding, trail and motor bike riding, cycling, army reserve and cadet exercises, orienteering, walking of dogs and hunting. 	Medium
		<ul style="list-style-type: none"> • Promote community understanding and appreciation of the conservation values of the reserve through contact with neighbours, community organisations and media releases, <i>field</i> activities and installation of interpretive signage as necessary. 	High
		<ul style="list-style-type: none"> • Monitor levels and impacts of visitor use. 	High
		<ul style="list-style-type: none"> • Enforce NPWS policy prohibiting domestic animals within the reserve, with the exception of assistance animals under the <i>Disability Discrimination Act 1992</i>. 	Medium

Current situation	Desired outcomes	Strategies	Priority
Research			
The UNE has current research programs within the reserve on woodland birds and vegetation response to differing fire regimes. These and other research programs have occurred in the reserve for over 20 years.	<ul style="list-style-type: none"> Research enhances management of the reserve and has minimal environmental impact. 	<ul style="list-style-type: none"> Prepare a prospectus of research projects to encourage and guide research by tertiary education providers in the reserve. Liaise with the UNE and other tertiary education providers about priorities for research in the reserve. Develop protocols for access to the reserve and sharing of research information. Continue to encourage research within the reserve. 	<p>Medium</p> <p>Medium</p> <p>High</p>
Management operations			
<p>A network of management trails occur throughout the reserve. The trails have been assessed for their value for fire and other management purposes.</p> <p>The status of fencing along the reserve boundary has been fully assessed, and is considered adequate to exclude stock.</p>	<ul style="list-style-type: none"> Management facilities adequately serve management needs and have acceptable impact. Domestic stock does not enter the reserve. 	<ul style="list-style-type: none"> Retain the management and walking trails shown in figure 1. Close and rehabilitate all other trails. Restrict access to management trails to management, research and emergency purposes. Adhere to NPWS policy in regards to boundary fencing. Maintain boundary fences in conjunction with neighbours. 	<p>High</p> <p>High</p> <p>High</p> <p>Low</p>

Legend for priorities:

High priority strategies are those that are imperative to the achievement of management objectives and desired outcomes. They must be undertaken in the near future to avoid significant degradation of the natural, cultural or management resources of the reserve.

Medium priority strategies are those that are necessary to achieve management objectives and desired outcomes but will be implemented as resources become available because the time frame for their implementation is not urgent.

Low priority strategies are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

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