FLAGSTAFF MEMORIAL NATURE RESERVE PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Conservation (NSW)

June 2004

This plan of management was adopted by the Minister for the Environment on 30 June 2004. Acknowledgments
This plan was prepared by staff from the South West Slopes Region and Conservation Programs and Planning Division, Southern Directorate.
Cover photograph by Angela Lonergan.
The planning process leading to the development of this plan has involved the collection and use of a large amount of information, which for reasons of document size has not been included in this plan. For additional information or enquiries on any aspect of the plan, contact the Service's South West Slopes Regional Office at 7 Adelong Road, Tumut, NSW, 2720 or by phone on (02) 6947 7000.
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FOREWORD

Flagstaff Memorial Nature Reserve covers 18 hectares and is located on the south west slopes of New South Wales, approximately 16 kilometres north of Cootamundra on the road between Temora and Harden.

Flagstaff Memorial Nature Reserve was bequeathed to the National Parks and Wildlife Service in 1968 by Mr H. C. Davidson who had planned to set the reserve aside as an experimental study area. Prior to that it was part of a wildlife refuge covering Mr Davidson's property, which was called "Flagstaff".

Flagstaff Memorial Nature Reserve contains an endangered ecological community of white box, yellow box and Blakely's red gum woodland, which is listed under the *Threatened Species Conservation Act, 1995.* It also contains a number of birds listed as vulnerable under the Threatened Species Conservation Act.

The New South Wales *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 a reserve will be managed in the years ahead.

A draft plan of management for Flagstaff Memorial Nature Reserve was placed on public exhibition for three months from 3 October 2003 until 5 January 2004. The exhibition of the plan of management attracted 3 submissions that raised 3 issues. All submissions received were carefully considered before adopting this plan of management.

This plan of management provides for the protection of the endangered box woodland community and its associated fauna. Research into the reserve and its natural and cultural heritage will continue to be encouraged.

This plan of management establishes the scheme of operations for Flagstaff Memorial Nature Reserve. In accordance with section 73B of the *National Parks and Wildlife Act* 1974, this plan of management is hereby adopted.

BOB DEBUS Minister for the Environment

TABLE OF CONTENTS

1. MANAGEMENT CONTEXT	1
1.1 Legislative and Policy Framework	1
1.2 Management Purposes and Principles	1
Reserve Map	2
2. FLAGSTAFF MEMORIAL NATURE RESERVE	3
2.1 Location, Gazettal and Regional Setting	3
2.2 Landscape	3
2.3 Natural Heritage	4
2.3.1 Landform, Geology and Soils	4
2.3.2 Native Plants	4
2.3.4 Native Animals	4
2.4 Cultural Heritage	5
2.4.1 Aboriginal Heritage	5
2.4.2 Non-Aboriginal Heritage	5
3. Threats to Flagstaff Memorial Nature Reserve	6
3.1 Introduced Plants	6
3.2 Introduced Animals	6
3.3 Fire	7
3.4 Access and Use	7
4. References	8
5 MANAGEMENT ISSUES AND STRATEGIES	9

1. MANAGEMENT CONTEXT

1.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of nature reserves in NSW is in the context of a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the NPW Land Management Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS). Section 72AA of the NPW Act lists the matters to be considered in the preparation of a plan of management. The policies are a compilation of policies arising from the legislative background and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic heritage conservation, recreation, commercial use, research and communication.

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

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within Flagstaff Memorial Nature Reserve except in accordance with the plan. The plan will also apply to any future additions to the nature reserve. Where management strategies or works are proposed for the nature reserve or any additions that are not consistent with the plan, an amendment to the plan will be required.

1.2 MANAGEMENT PURPOSES AND PRINCIPLES

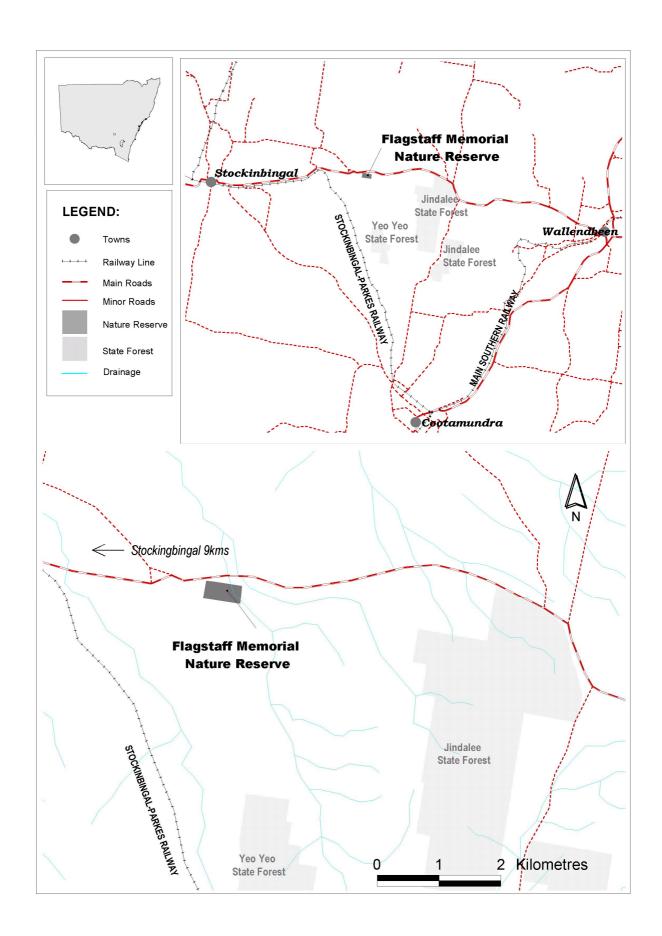
Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

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.

FLAGSTAFF MEMORIAL NATURE RESERVE MAP



2. FLAGSTAFF MEMORIAL NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Flagstaff Memorial Nature Reserve (herein referred to as 'the reserve') is located on the south west slopes of New South Wales, approximately 16 kilometres north of Cootamundra on the Temora to Harden Road, 9 kilometres east of Stockinbingal. The reserve is in the Local Government area of Cootamundra and lies within the jurisdiction of the Murrumbidgee Catchment Management Authority and the Gundagai Rural Lands Protection Board.

The 18 hectare reserve was originally gazetted as Flagstaff Wildlife Refuge No. 32 on the 19th January 1962. On the 4th August 1967 the land was proclaimed a 'Reserve for the Preservation of Fauna' in Government Gazette No. 85. The area was then bequeathed to the National Parks and Wildlife Service by Mr H. C. Davidson and dedicated on the 16th February 1968 (Government Gazette No. 20). Mr Davidson had planned to set the reserve aside as an experimental study area.

The reserve contains an endangered ecological community of white box, yellow box and Blakely's red gum woodland, which was prevalent in this area pre-European settlement. Having been fragmented by grazing and pastoral practices, the reserve provides a small protected area between local state forests and private land. Ulandra Nature Reserve, which is the nearest conservation area, is 32 kilometres south of Flagstaff Memorial Nature Reserve.

2.2 LANDSCAPE

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.

Flagstaff Memorial Nature reserve protects a small area of open box woodland, a vegetation community that is listed as being threatened under the *Threatened Species Conservation Act, 1995*. The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans. Agricultural activities including grazing, clearing and burning have resulted in the landscape as it is seen today.

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 HERITAGE

2.3.1 Landform, Geology and Soils

The reserve is approximately 340-370m above sea level with a predominantly eastern aspect, a part of the regions undulating terrain. A syncline, delineated by Congou Creek, divides the eastern portion of the reserve. There is no constant water supply within the reserve, however there are seasonal flows into Congou Creek.

Generally, the geology is described as middle Devonian (early Carboniferous) and Silurian (early to middle Devonian). The surrounding soils are fine to medium clay loams with some sandy podsols, with low nutrient levels and low fertility. There are no rock outcrops or significant geological features in the reserve.

2.3.2 Native Plants

Preliminary surveys have identified 45 plant species within the reserve. A regionally significant community of white box *Eucalyptus albens*, yellow box *E. melliodora* and Blakely's red gum *E. blakelyi* exists in the reserve. This vegetation is listed as an endangered ecological community under the *Threatened Species Conservation Act*, 1995. In addition, any remnant vegetation of this type on the south west slopes is of high conservation significance, given past clearing levels and disturbance through grazing and agricultural practices. The community of eucalypts, including grey box *Eucalyptus microcarpa*, are prolific flowerers, providing an important food resource and nesting site for an array of birds, mammals and insects.

Western silver wattle *Acacia decora*, and Cootamundra wattle *Acacia baileyana*, are significant species as they were originally restricted and confined to a small area around Cootamundra. *Acacia baileyana* has, however, been planted over large areas since European settlement as both an ornamental shrub and for use in windbreaks. Due to its ability to reinvade cleared land it is now, in some areas, considered an agricultural weed.

The removal of grazing in the reserve should assist with the recovery of flora species and community diversity that have otherwise been suppressed. In conjunction, controlling exotic plant species should increase this native reclamation.

2.3.3 Native Animals

The reserve's native woodland provides valuable habitat for a range of native species. Surveys to date have identified 6 mammals, 2 amphibians, 3 reptiles and 35 bird species within the reserve. The most significant recordings are superb parrot *Polytelis swainsonii*, swift parrot *Lathamus discolor*, and diamond firetail *Stagonopleura guttata*. These species are listed as vulnerable under the *Threatened Species Conservation Act 1995*. The potential for other woodland bird species using the area, such as the black-chinned honeyeater *Melithreptus gularis*, brown tree-creeper *Climacteris picumnus*, turquoise parrot *Neophema pulchella*, regent honeyeater *Xanthomyza phrygia*, hooded robin *Melandodryas cucullata*, speckled warbler *Chthonicola sagittata*, and grey-crowned babbler *Pomatostomus temporalis*, is high.

Following the removal of grazing and the encouragement of native regeneration it is possible that many other species, especially mammalian species, will adopt the area as

a refuge, home or part of a territory. Encouraging the community to support corridors and maintenance of paddock trees within the region should provide a means for species to immigrate from and to other isolated areas. Removal of pest species and improved management of the vegetation community should provide a more diverse range and interaction between fauna species.

2.4 CULTURAL HERITAGE

2.4.1 Aboriginal Heritage

Aboriginal communities have an association and connection to the land. The land and water biodiversity values within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of 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.

Due to the small size of the reserve, information regarding indigenous use of the area is limited. At the time of writing the plan, only one site is recorded within the reserve. There are no other sites recorded in the reserve or immediate vicinity. As the reserve is located within Wiradjuri Country there would have been associations with the broader landscape and resources within the region. The reserve comes under the jurisdiction of Young Local Aboriginal Land Council.

2.4.2 Non-Aboriginal Heritage

The land now referred to as Flagstaff Memorial Nature Reserve was notified as part of a Travelling Stock Route (TSR 1648) on 7 May 1879. Then in March 1922 was notified as a Travelling Stock and Camping Reserve (TS & CR 55214). On the 18 August 1950 Mr Hubert Davidson owner of the "Flagstaff" property adjoining this TS & CR, undertook an exchange of land with the Department of Lands as he was frustrated with the frequent presence of droving teams on the TS & CR located in front of his homestead. The "Flagstaff Wildlife Refuge, No. 32" of which the current nature reserve is a part, was gazetted under the *Fauna Protection Act 1948* on 19 January 1962. The owner of the property at that time, Mr Hubert. C. Davidson had planned to set the reserve aside as an experimental study area, however Mr Davidson passed away before his plan was initiated. The area was then bequeathed to the National Parks and Wildlife Service by Mr Hubert. C. Davidson and dedicated on the 16th February 1968 (Government Gazette No. 20) (Pearson 2003).

An old school house exists in the south eastern corner of the reserve. This school house was transported from behind the Police Station area in Cootamundra by Mr Don Davidson (the son of Mr Hubert Davidson) in November 1965. It was to be used for a staff hut for the Fauna Protection Staff Panel, as part of establishing a "simulated natural environment on grazing lands". The dwelling is currently located above the eastern side of the Congou Creek line and is in a severe state of disrepair. It presents a high level of risk to the public in its current state and would require significant financial commitment to restore. There is no known historical significance associated with the schoolroom and it is not currently used for any purpose (Pearson 2003).

3. THREATS TO FLAGSTAFF MEMORIAL NATURE RESERVE

3.1 Introduced Plants

An introduced plant species is defined in this plan as any plant species not endemic to the reserve. Introduced species within the reserve 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. The NPWS also has a priority to control environmental weeds (not necessarily declared noxious) which threaten natural habitats.

Weed species increase nitrogen levels and compete with natives for space and dominance. 24% of species identified in the reserve are exotic. Uncontrolled grazing in the reserve occurred for a number of years due to the poor quality of fences surrounding the reserve. A number of now disused sheep camps exist within the reserve. The weed species and diversity present in these camps indicates long term use of the reserve for grazing. One of the boundary fences has been recently replaced to exclude sheep from the reserve for the long term.

The NPWS South West Slopes Region Pest Management Strategy identifies priority pest species and programs for action through set criteria. By following this same process the prioritisation of Reserve pest species programs may be established and directly linked into the regional strategies (refer to the South West Slopes Region Pest Management Strategy). This strategic approach will consider such issues as (yet not limited by) the control of weeds in endangered ecological communities, significant remnant vegetation associations, threatened/endangered species habitat and areas of community/neighbour concern.

Introduced plant species recorded in the reserve include St. John's wort (*Hypericum perforatum*), Paterson's curse (*Echium plantagineum*), Vipers bugloss (*Echium vulgare*), spear thistle (*Cirsium vulgare*), saffron thistle (*Carthamus lanatus*), skeleton weed (*Chondrilla juncea*), oats, clover, cicads and phalaris.

3.2 Introduced Animals

An introduced animal species is defined in this plan as any animal species not native to the reserve. Introduced animals may impact upon native fauna populations through predation or competition for food or shelter. Introduced animals in the reserve include rabbits and foxes. Both species are managed in accordance with the actions listed in the regional pest management strategy. Rabbits have presented a problem in the past, however, removal of harbour both within and surrounding the reserve, combined with baiting, trapping and shooting programs has reduced rabbit populations to a low level. Foxes may inhabit the reserve periodically, as they do throughout the south west slopes. Again, cooperative baiting programs between landholders, Rural Lands Protection Boards and the Service will be undertaken if populations in and around the reserve increase, and affect native plant and animal populations.

3.3 Fire

Fire is a natural feature of many environments. Many species are tolerant of fire, while others may not survive low or high fire frequencies. Inappropriate fire regimes can lead to loss of particular plant and animal species and communities. Fire can also damage or destroy cultural heritage, recreation and can threaten visitors and neighbouring land.

The reserves fire history is unknown. Given the location of the reserve, vegetation types and its small size, fire in the reserve is most likely to be from larger fires burning from surrounding agricultural land. There is potential for fire to start on the reserve due to natural causes such as lightning strikes, as well as ignition from cigarette butts from motorists on the adjacent road and arson, but this potential is considered low.

There are a number of assets adjacent to the reserve, including neighbouring properties (homesteads, sheds, orchards and grazing land). Currently, the old school house is considered an asset for protection, until such time approval under policy and legislation has been granted to remove the building.

The NPWS uses a zoning system for bushfire management in NPWS reserves. NPWS zones are compatible with the system adopted by the Bushfire Coordinating Committee for use in District Bushfire Management Committee (DBFMC) bushfire risk management plans.

NPWS has assessed the reserve for fire management planning purposes and has zoned the reserve as a Heritage Management Zone (HAMZ). The primary fire management objectives within this zone are to protect the threatened species associated with the community of white box *Eucalyptus albens*, yellow box, *E. melliodora* and Blakely's red gum *E. blakelyi* within the reserve. In addition, protects culturally significant Aboriginal and non-Aboriginal sites. The reserve has been designated as a HAMZ, because it is not adjacent to built assets which would be exposed to a high level of bushfire risk, does not have a history of bushfire ignitions or known areas of high bushfire behaviour potential. The HAMZ does not require intensive management and focuses on those actions appropriate to conserve biodiversity and cultural heritage. The use of planned fire in the reserve may be carried out for research, ecological purposes or for hazard reduction.

NPWS maintains cooperative arrangements with surrounding landowners and RFS brigades and is actively involved in the Riverina Bush Fire Management Committee. Cooperative arrangements include approaches to fuel management, support for neighbours fire management efforts and information sharing.

3.4 Use/Access

Access to the reserve is limited. The reserve is located immediately adjacent to the Stockinbingal to Wallandbeen road. No formalised internal roads exist in the reserve. A park identification sign is located on the reserve's north-western boundary and is clearly visible from the main road.

Knowledge of previous use of the reserve is limited. Given its small size, location, lack of scenic values and facilities, it is thought that little to no use has occurred by the public in the past. Use is not likely to increase in the future.

4. REFERENCES

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Personal communications

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Rehwinkel, Rainer. Grasslands Officer, NPWS

Briggs, John. Botantist, NPWS

Schultz, Martin. Fauna Conservation Officer, NPWS

5. MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies	Priority
Soil and water conservation			
There are no major problems related to soil erosion or issues of water quality within the reserve.	 Soil erosion and water quality is monitored and minimised. 	 Undertake all works in a manner that minimises erosion and water pollution. Monitor the reserve and take action when needed to control erosion. Liaise with local authorities and neighbours to maintain water quality in the reserve and surrounding catchment. 	Low
Native plant and animal conservation			
Several threatened or locally uncommon plant and animal species exist in the reserve. Limited knowledge of potential threats to species and communities within the reserve exists.	Native flora, fauna species and communities are protected.	Encourage surveys to improve information on the reserve focusing on threatened plant and animal species.	Med
Damaged fencing has recently been replaced with new stockproof fencing around some of the reserve, under a fencing agreement with a neighbouring landholder.	Structural diversity and habitat values are improved.	Monitor vegetation recovery, research methods and develop trial methods of increasing native vegetation dominance.	Med

Current Situation	Desired Outcomes	Strategies	Priority
Introduced species			
Rabbits and foxes are targeted in control programs as outlined in the SWS Regional Pest Management Strategy.	Minimised impact of introduced species on the reserve and neighbouring lands.	Control introduced plant and animal species using methods outlined in the regional pest management strategy. Undertake integrated pest animal control programs for foxes and rabbits in conjunction with RLPB and park neighbours.	Low
Weed species alter natural processes and compete with natives for space and dominance. 24% of species identified in the reserve are exotic.	Reduce the identified species of introduced plants within the life of this plan.	Undertake strategic pest management programs for introduced weeds in the reserve.	Med

Current Situation	Desired Outcomes	Strategies	Priority
Fire management			
Fire history and frequency within the reserve and immediate area is unknown. Fire scars are not visible or easily identified. Local RFS	 Persons and property are protected from 	Respond to fire events immediately they are reported to reduce the spread of fire.	High
and neighbours have no recollection of fire within recent years. Under the current NPWS policy, the Plan of Management guidelines is adequate for fire management issues of this reserve (Type 1 Plan).	bushfire. Natural and cultural features are protected from damage by fire.	Use appropriate bushfire suppression techniques to protect life, property, natural and cultural heritage.	High
The Rural Fire Service and neighbours will undertake the first response to fires within and around the reserve.	A cooperative approach is developed for fire management with neighbours and other fire authorities.	Participate in the Riverina Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades, Fire Control Officer and neighbours with regard to fuel management and fire suppression. Maintain contact with local brigades.	High
Fire is a natural feature of the environment of the area and is essential to the survival of some plant communities. However, frequent fire can cause loss of some plant and animal species and communities. Fire could also	Fire regimes require further investigation for conservation of plant and animal communities.	Encourage further research into the ecological effects of fire within the reserve. Especially for regeneration purposes for preserving the integrity of the native plant and animal community.	High
damage cultural features, fences and threaten neighbouring land.		Ascertain fire regime/thresholds for the reserve vegetation community as a guide for management.	Medium
		Undertake hazard reduction to comply with NPWS fire management policy and consider community thresholds. Alternative fuel modification methods should be considered.	Medium

Cultural features are conserved and managed in accordance with their significance.	Any cultural heritage sites found in the park will be recorded, conserved and protected in consultation with the Young Local Aboriginal Land Council.	Med
	Undertake further survey for the identification of Aboriginal sites.	Low
 Removal of schoolhouse under NPWS cultural heritage policies. 	Remove building in accordance with NPWS Cultural Heritage places, buildings, landscapes & movable heritage items on NPWS Estate Policy.	High
 Visitor use and activities are ecologically sustainable. 	Use of the reserve by the public will be limited to walking and low impact nature appreciation activities. Camping, horse riding and vehicle use by the public is not be permitted in the reserve.	Med
	are conserved and managed in accordance with their significance. > Removal of schoolhouse under NPWS cultural heritage policies. > Visitor use and activities are ecologically	are conserved and managed in accordance with their significance. > Undertake further survey for the identification of Aboriginal sites. > Removal of schoolhouse under NPWS cultural heritage policies. > Visitor use and activities are ecologically Aboriginal sites

Current Situation	Desired Outcomes	Strategies	Priority
Research			
Scientific study is needed to improve understanding of the reserve's natural and cultural heritage processes.	Research enhances the management information base and has minimal environmental impact.	Undertake and encourage research to improve knowledge and management of natural and cultural heritage.	Med
Management operations			
The reserve boundary is fenced to a stock-proof standard.	To have no domestic stock grazing within the reserve.	Enter into fencing agreements with relevant neighbours in accordance with NPWS boundary fencing Policy.	Med
No formalised management trails exist within the reserve.	Management does not exceed the current level of facilities and impact.	Management access will be restricted to the most suitable means of transport for the required task.	Low

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

Medium priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

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

