

Reserves of the Billiatt District

Management Plan 2011



Managed for the landscape scale protection of wilderness quality and mallee biodiversity values, in collaboration with neighbouring land managers and other partners.

Department of
Environment and
Natural Resources



Government
of South Australia

Minister's foreword



The Reserves of the Billiatt District protect an extensive area of pristine mallee heath of considerable ecological significance in an

otherwise fragmented agricultural landscape. The reserves and neighbouring heritage agreements create an important habitat corridor that connects with the vast Murray-Sunset National Park in Victoria.

The relatively undisturbed ecosystems found within the four reserves provide core habitat for a range of threatened and declining species. The refuge provided by the reserves is of critical importance for their long term survival.

This management plan acknowledges these values and commits to ensuring biodiversity and wilderness conservation remain the primary management focus into the future. To succeed in this goal, a landscape scale and collaborative partnerships focus will be fundamental.

In providing ideas and feedback at different stages of the planning process, the local community has made a valuable contribution to the future management of these reserves. I acknowledge and thank those people who were involved, and encourage the local community as a whole to continue taking an interest in these highly valuable natural areas.

I now formally adopt this management plan for the Reserves of the Billiatt District under the provisions of section 38 of the *National Parks and Wildlife Act 1972* and section 31 of the *Wilderness Protection Act 1992*.

A handwritten signature in black ink, appearing to read 'Paul Caica'.

The Hon Paul Caica MP
Minister for Sustainability,
Environment and Conservation





Directions for management

The Reserves of the Billiatt District protect some of the largest remnant stands of pristine mallee heath and shrubland in South Australia.

The reserves are valued for their wilderness quality, remoteness and contribution to biodiversity conservation.

The Management Plan for the Reserves of the Billiatt District sets directions for future management of the reserves and was prepared in consultation with technical experts and local community members. Through this process a shared vision has been identified and management strategies established. How these strategies are prioritised, implemented and delivered is coordinated by the Department of Environment and Natural Resources on an annual basis.

This management plan meets the requirements of section 38 of the *National Parks and Wildlife Act 1972* and section 31 of the *Wilderness Protection Act 1992*.

Park significance and purpose	1
Area profile	6
Management themes and priorities	7

Park significance and purpose

Conservation begins with understanding what we are protecting.

The Reserves of the Billiatt District conserve 66 876 hectares of remnant mallee vegetation in the Murraylands Region of South Australia, between the townships of Alawoona, Lameroo, Parilla and Pinnaroo (Figure 1). The primary value of these reserves is biodiversity and wilderness conservation.

The four reserves included in this plan are:

- Billiatt Wilderness Protection Area (59 125 hectares)
- Billiatt Conservation Park (801 hectares)
- Karte Conservation Park (3 589 hectares)
- Peebinga Conservation Park (3 361 hectares)

Although left largely uncleared, some attempts at farming the land within the reserves were made between the 1870s and 1930s. Ultimately proving unsuitable for conventional farming methods, the land was subsequently dedicated for conservation purposes.

Agriculture and pastoralism, including cereal cropping, irrigation, grazing and mining form the dominant land uses within the district. Numerous heritage agreements have been established on private land near the reserves under the *Native Vegetation Act 1991*. Although these areas are managed independently, their formal protection complements the conservation objectives of the reserves.



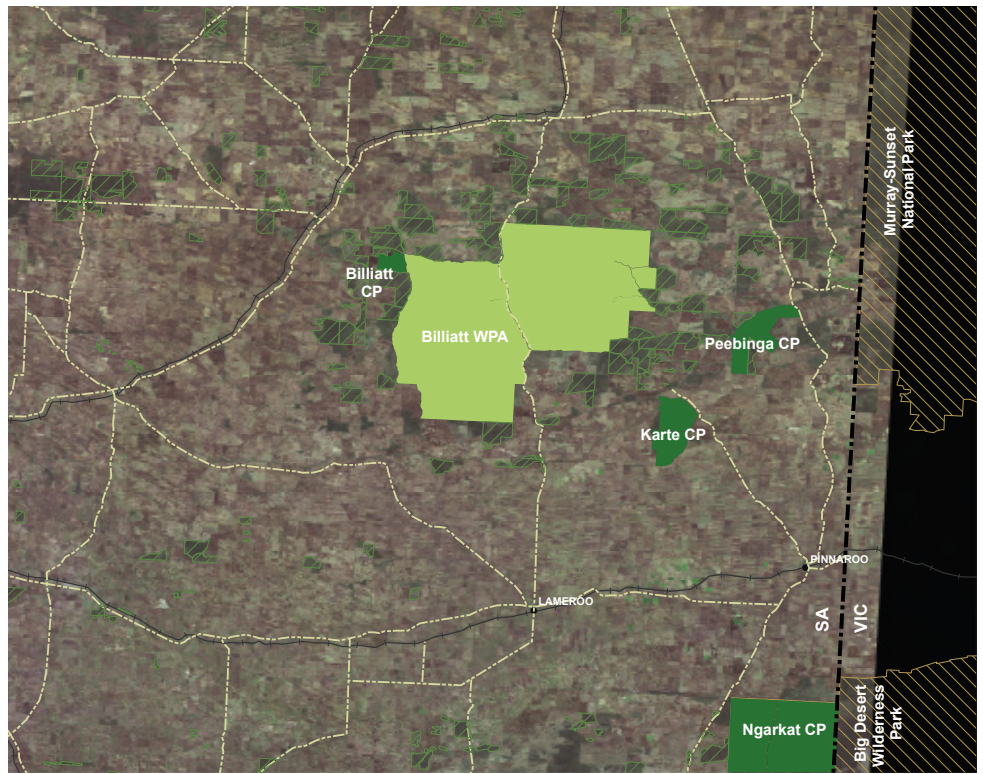
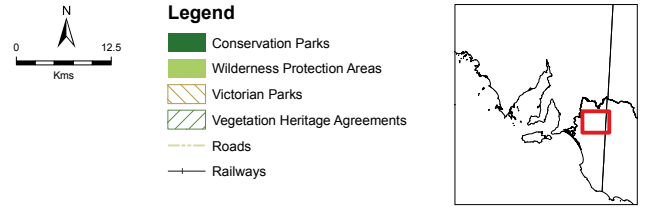


Figure 1: Location map.



Over 260 000 hectares of mallee vegetation are conserved in and around the reserves. Together with other high quality mallee remnants on public and private lands, the reserves support a number of state and nationally threatened species including Malleefowl (*Leipoa ocellata*), Mallee Emu-wren (*Stipiturus mallee*) and Western Whipbird (*Psophodes nigrogularis*).

The First Peoples of the River Murray and Mallee Region Native Title Claim is currently registered over Billiatt Conservation Park and is adjacent to the north and west boundaries of Billiatt Wilderness Protection Area. No registered Aboriginal heritage sites are recorded within the reserves.

The value of wilderness

Wilderness is defined as land which has not been seriously affected by modern technology or exotic plants, animals and organisms (DEH, 2008). These areas are a critically important resource for the long-term protection of biological diversity and self-sustaining ecosystems, particularly in the face of climate change.

As the climate changes, our natural systems are likely to become more susceptible to broad scale pressures such as increased bushfire intensity and frequency, and the spread of weeds and feral animals. Large, intact wilderness areas are critical in providing a buffer against these disturbances and ultimately reducing species extinction.

In 2005, the South Australian Wilderness Advisory Committee assessed the wilderness quality of the former Billiatt Conservation Park (Figure 2). The high National Wilderness Inventory values identified during the assessment prompted the Committee to recommend the reserve receive protection under the *Wilderness Protection Act 1992*. Billiatt Wilderness Protection Area was subsequently proclaimed by the Governor in 2008.



Western Whipbird

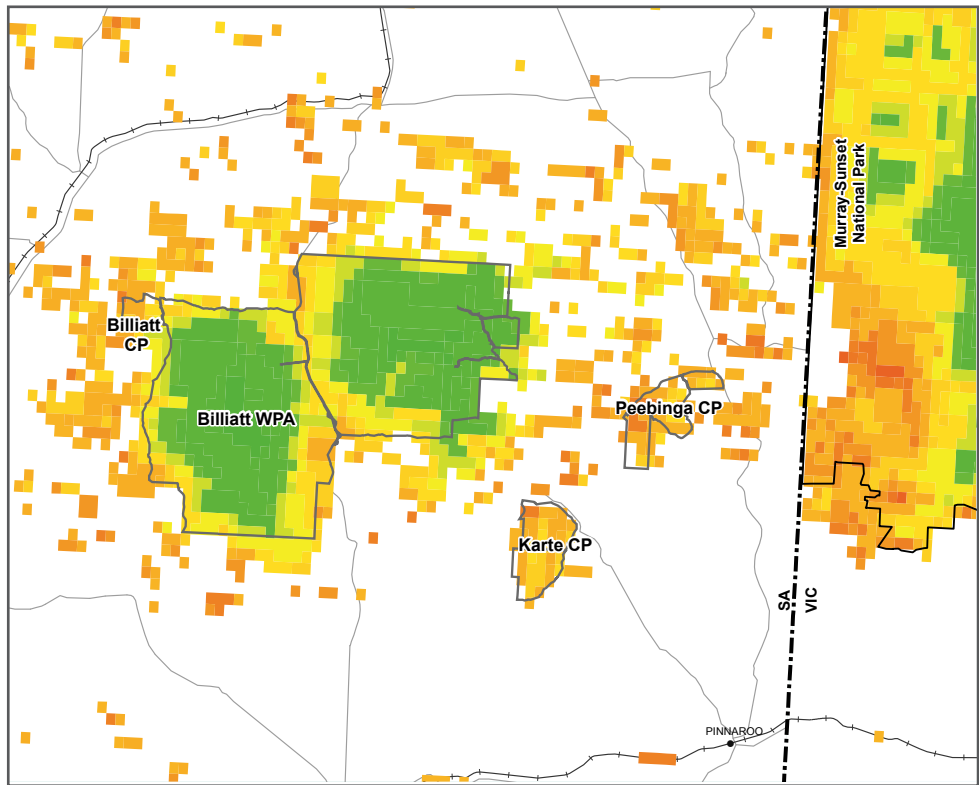


Figure 2: National wilderness inventory values.



The Code of Management for Wilderness Protection Areas and Zones South Australia (Wilderness Code of Management) provides clear guidelines for the protection, enhancement and management of wilderness areas (DEH, 2004). All management operations implemented within Billiatt Wilderness Protection Area must be consistent with this code.

Setting the management direction

The Reserves of the Billiatt District will continue to be managed for the landscape scale protection of wilderness quality and mallee biodiversity values, in collaboration with neighbouring land managers and other partners.





What are we protecting?

The Reserves of the Billiatt District conserve some of the largest remnant stands of pristine mallee heath and shrubland habitat in South Australia. The area is particularly significant as it supports:

- large areas of high quality wilderness
- core habitat for native wildlife, including species of conservation significance such as the nationally endangered Mallee Emu-wren (*Stipiturus mallee*) and nationally vulnerable Malleefowl (*Leipoa ocellata*) and Western Whip Bird (*Psophodes nigrogularis*)
- flora species of conservation significance, including the nationally endangered Inland Green-comb Spider Orchid (*Caladenia tensa*)
- several significant butterfly species including the nationally vulnerable Small Bronze Azure and state vulnerable Fiery Jewel (*Hypochrysops ignita*)

What are the challenges?

Challenges to the future management of the reserves include:

- loss and fragmentation of mallee habitat across the region, which reduces the capacity for reserve species to recover from catastrophic events
- climate change and drought
- predation and total grazing pressure caused by introduced species
- inappropriate fire regimes, including large bushfires
- illegal activities that impact on native species
- changing land-use in surrounding areas, which may conflict with reserve conservation values
- maintaining and establishing partnership arrangements

The key management issues and strategies identified for these reserves have been grouped into five broad themes:

1. Conserving mallee biodiversity at a landscape scale
2. Managing predation and total grazing pressure
3. Managing the impacts of fire
4. Managing reserve access for tourism and resource use
5. Compliance and law enforcement



Mallee Emu-wren

© Graeme Chapman

Management themes and priorities

This section of the plan discusses the important issues within each theme and sets out objectives and strategies for management

Theme 1: Conserving mallee biodiversity at a landscape scale

Remnant mallee vegetation within the broader Billiatt District creates an important corridor which connects to the vast Murray-Sunset National Park in Victoria. These extensive tracts of mallee support a diverse range of native flora and fauna species, including many of conservation significance.

The area is particularly significant in providing core habitat for a suite of threatened and declining mallee birds. This includes refuge and/or breeding habitat for five nationally threatened species; Malleefowl (*Leipoa ocellata*), Mallee Emu-wren (*Stipiturus mallee*), Red-lored Whistler (*Pachycephala rufogularis*), Regent Parrot (*Polytelis anthopeplus monarchoides*) and Western Whipbird (*Psophodes nigrogularis*). Declining species known to occur within the reserves include Black-shouldered Kite (*Elanus axillans*) and Tawny Crowned Honey-eater (*Glypiphila melanops*).

Habitat loss and fragmentation caused by historical land clearance in the district has changed the distribution and abundance of mallee vegetation associations and the species that they support. At present many mallee bird species continue to decline, either because viable populations are no longer supported by the altered structure and function of the landscape, or because the threatening processes that caused the declines continue to operate.

Threats to biodiversity values within the reserves and broader landscape include inappropriate fire regimes, selective clearing, altered grazing regimes, introduced predators, climate change and drought (Cale and Mladovan, 2008). These combined factors have the potential to reduce species resilience, ultimately limiting recovery potential.

A holistic approach to biodiversity management is required to assist species and ecosystems within the reserves and surrounding landscape to survive, evolve and adapt. Management of entire ecological communities and broad habitat areas across multiple land tenures will assist in achieving threat abatement at appropriate scales, managing species as meta-populations and managing and restoring habitat connectivity and ecological processes. An adaptive management approach will be crucial to the success of any management programs implemented.

Sound scientific evidence is required to inform management decisions. Increased understanding of the distribution and abundance of declining species, and the potential impact of threatening processes on the long-term survival of these species is critical to identifying effective conservation strategies. The precise nature of the interaction of particular threatening processes on individual species is only partially understood, and the interactions between threats are complex.

Establishing partnerships to improve research capacity in these areas will be a future focus. Partnerships that promote conservation of remnant mallee on private and public lands will also be critical to restoring landscape connectivity within the broader district.

The Department is a key partner in regional and tri-state biodiversity management initiatives including the Murray Mallee Partnership and Habitat 141. Alignment of conservation and management strategies across state jurisdictions will be promoted through these existing networks. Establishing consistency in management approach across the vegetation corridor between the reserves and Murray-Sunset National Park in Victoria is a particular priority for threatened species management.

Objectives and strategies

Enhance mallee biodiversity values at a landscape scale, with a focus on improving the long-term survival prospects of threatened and declining species

- Continue to implement threatened species recovery plans
- Encourage partnerships for further research and survey work into the ecological requirements and distributions of threatened and declining species and the effects of relevant threatening processes
- Liaise with adjoining landowners, land management groups and local government to seek opportunities for protection of remnant mallee in the broader Billiatt District
- Work with adjoining landowners, industry and local government to ensure land use adjacent to the reserves does not significantly impact on wilderness values
- Align mallee conservation strategies between the Reserves of the Billiatt District and Murray-Sunset National Park, and seek support to implement landscape scale biodiversity conservation programs through existing partnerships



Theme 2: Managing predation and total grazing pressure

The mallee vegetation within the Reserves of the Billiatt District has been largely protected from the impacts of pastoral grazing activities that have occurred elsewhere in the region. However, feral herbivores such as goats (*Capra hircus*) and rabbits (*Oryctolagus cuniculus*) contribute to grazing pressure across the landscape. Feral deer are also an emerging issue in the district.

Inappropriate grazing regimes have the potential to alter vegetation species composition and abundance, with secondary impacts such as soil erosion contributing to localised habitat degradation. Within the context of existing habitat loss and fragmentation, uncontrolled grazing pressure potentially poses a significant threat to the recovery of threatened and declining mallee species.

An assessment of threats to mallee birds has identified introduced grazers as a moderate risk to significant bird species within the intact habitat of Billiatt Wilderness Protection Area and Billiatt Conservation Park, but a high risk within the broader agricultural landscape of the district (Cale & Mladovan, 2008). This broader area includes the smaller Karte and Peebinga Conservation Parks.

Feral predators such as cats (*Felis catus*) and foxes (*Vulpes vulpes*) are known to persist within the reserves, however their distribution, abundance and impacts on biodiversity are not comprehensively understood. Wild dogs (*Canis familiaris*) have also been observed in the district. There are no artificial water points within the conservation parks, and only one disused bore in Billiatt Wilderness Protection Area. This lack of artificial water is likely to limit feral animal distribution, with large tracts of waterless country potentially supporting smaller pest numbers.

Critical to the success of a landscape scale pest management program will be the establishment of partnerships. Land management groups in the district have established rabbit and fox control programs; coordination with these activities should occur where possible. Goat control programs have been implemented within the reserves in the past. Aerial and ground control programs may continue to occur in the future in an attempt to reduce grazing impacts.



Identification and mapping of significant biodiversity assets will assist in prioritising the delivery of all threat abatement programs to maximise biodiversity conservation outcomes. Further monitoring is required to gain an accurate insight into pest density and distribution. Monitoring programs will be essential in informing an adaptive management approach.

As irrigation development on surrounding properties continues to increase, potential exists for Western Grey Kangaroo (*Macropus fuliginous*) and Emu (*Dromaius novaehollandiae*) grazing to become a significant management issue. Although control of native species on reserves is permitted under the *National Parks and Wildlife Act 1972*, this option is not likely to be required during the life of this plan. The situation will be monitored and regulation of destruction permits issued on neighbouring properties will continue to occur.

An adaptive management approach to predation and total grazing pressure will ensure that scientifically sound management actions are implemented, then reviewed and improved as more information becomes available. Future monitoring and control programs will aim to deliver measurable outcomes for high priority biodiversity assets.

Objectives and strategies

Reduce the impact of predation and total grazing pressure on high priority biodiversity assets and neighbouring properties through adaptive management

- Design an adaptive total grazing pressure and predation management work program that addresses specific ecological requirements, conservation outcomes and monitoring needs. This will include:
 - Implementing best practice pest management techniques, including aerial and ground control
 - Monitoring the impact of total grazing pressure on reserve vegetation and neighbouring landholders
 - Planning and implementation at a landscape scale in collaboration with relevant partners

Theme 3: Managing the impacts of fire

Fire is an important natural process within mallee ecosystems, having shaped the landscape for thousands of years. Native flora and fauna species have evolved with fire, many depending on it for survival. Despite this close connection, inappropriate fire regimes present a significant threat to biodiversity. This issue, along with the significant threat bushfire poses to life and property, makes fire management a priority in this area.

Detailed knowledge of fire history within the Billiatt District prior to 1945 is limited. Frequent fires occurred during the late 19th and early 20th century as a result of pastoral activities, and traditional Aboriginal patch burning is suspected to have occurred prior to European settlement (DEH, 2009). A large bushfire occurred in 1988.

Fires in the area are generally ignited naturally by lightning strikes during dry storms from September to May. Although fire frequency is low in this area, the potential for a single fire event to burn extensive areas of vegetation is of concern. It is predicted that the size, frequency and intensity of bushfires will escalate as climate change increases the likelihood of extreme fire weather conditions and fire season duration (DEH 2009).

Understanding the ecological tolerances of native flora and fauna to fire regimes is essential to ensure their long-term conservation. Effective management will consider the impacts of fire regimes on the habitats and the species they contain and how robust these habitats and species are to variation in fire regimes.

Large bushfires in the Billiatt District may be particularly detrimental to the long-term survival of threatened and declining mallee bird species such as the Mallee-Emu Wren (*Stipiturus mallee*) and Western Whipbird (*Psophodes nigrogularis*). Successive fire events within core habitat areas are suspected to have reduced the population of these species to critically low levels. Active management of fire is essential to ensure the continued survival of these species.

The *Billiatt District Fire Management Plan 2009-2019* (DEH, 2009) provides clear strategies for managing fire across the landscape. The plan outlines specific management zones for the protection of infrastructure and conservation values. Prevention of fire in mallee ecosystems is not desirable or achievable; however the risk to life, natural, cultural and built assets can be reduced.

Continued partnerships with stakeholders such as the Country Fire Service and neighbouring land managers will be crucial to the success of future fire management programs. The establishment of partnerships with interstate agencies is also a priority, to ensure a broader landscape approach to fire management is achieved across the mallee.

Fire management activities within Billiatt Wilderness Protection Area require compliance with guidelines specified in the Wilderness Code of Management. Where possible, the code requires the use of fire suppression methods that will have the least long-term impact on wilderness quality (minimum impact suppression). The South Australian Wilderness Advisory Committee has endorsed the fire management plan for this area.

Objectives and strategies

Manage fire to ensure the protection of life, natural, cultural and built assets, and improve our understanding of the role of fire in mallee ecosystems

- Continue implementation of strategies outlined in the *Billiatt District Fire Management Plan 2009-2019*, including
 - **Response:** Establishment of control lines, back-burning and aerial suppression
 - **Risk Modification:** Prescribed burning for fuel reduction, landscape protection and/or ecological management
 - **Readiness:** Access track maintenance, installation of access signage and adequate staff and equipment availability
 - **Research and Information:** Monitoring, including species response to fire, influence of prescribed burning on significant species and efficacy of prescribed works in mitigating the effects of bushfire
- Establishing across state partnerships to achieve landscape scale fire management objectives

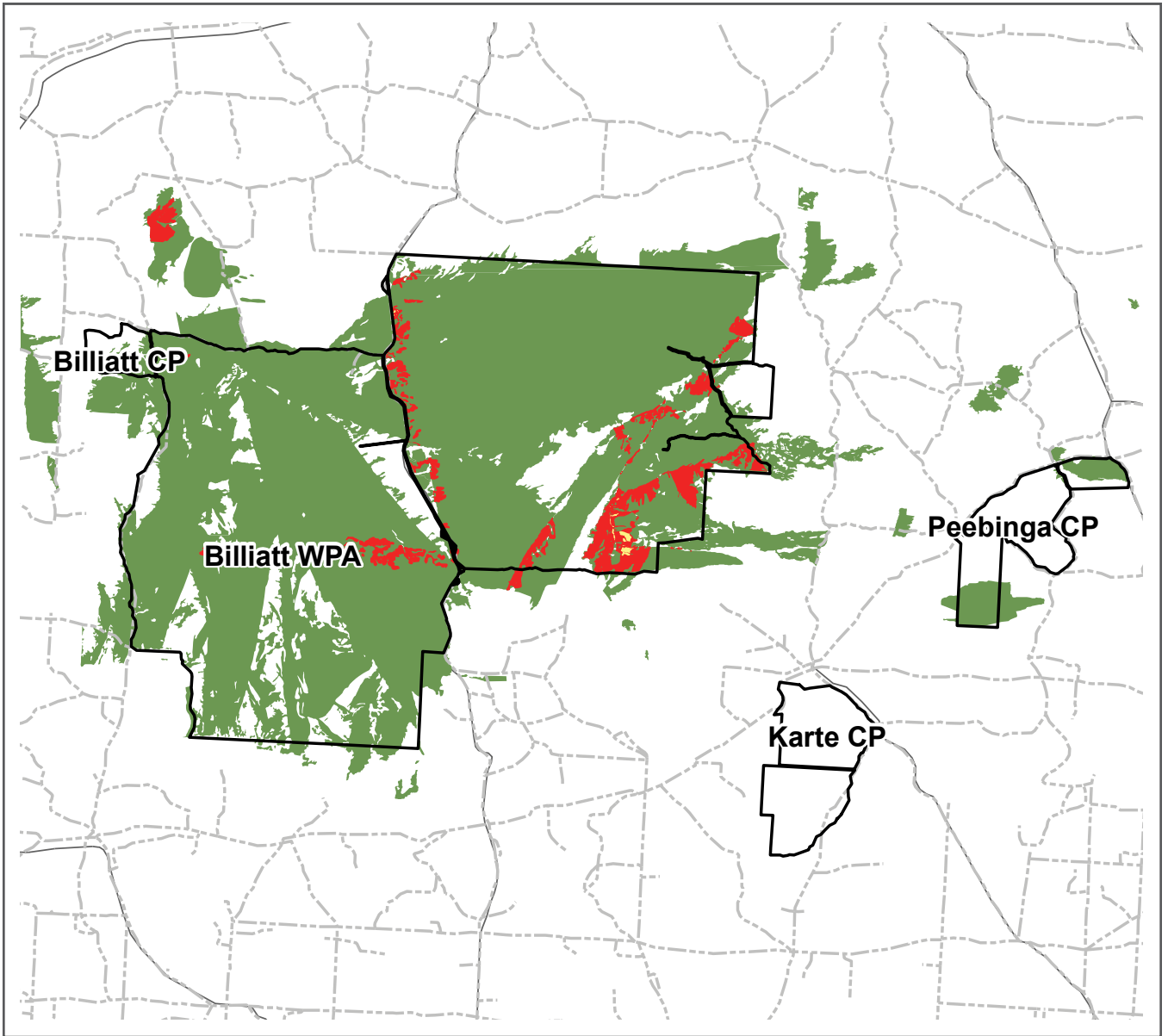
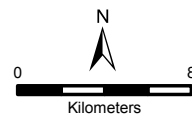








Figure 3: Fire frequency within the Reserves of the Billiatt District.



Legend

-  Billiatt District Reserves
-  Roads
-  Land Burnt Once
-  Land Burnt Twice
-  Land Burnt Three Times
-  Roads

Theme 4: Managing reserve access for tourism and resource use

This section provides for the management of recreational visitor access within the conservation parks encompassed within this plan, and for regulation of exploration and mining access within the jointly proclaimed Billiatt Conservation Park. It also provides the visitor management strategy for Billiatt Wilderness Protection Area as required by the Wilderness Code of Management.

Visitation to the Reserves of the Billiatt District has traditionally been limited. A small number of self-reliant travellers visit the reserves each year to undertake activities such as bushwalking and bird watching. Several licensed commercial tour operators are also known to conduct specialised tours on an irregular basis.

Visitor access is readily available from the reserve road boundaries. However there are only limited internal vehicle tracks. Only Karte Conservation Park provides dedicated visitor facilities, including the Bicentenary Youth Walk trail which is accessed via a small camping area near the main entrance of the park. Toilet facilities are available at the camping area and are jointly maintained by the Friends of Southern Mallee Parks and the Department.





Public use and enjoyment of wilderness areas is encouraged where this is compatible with maximising wilderness quality. Although public access to Billiatt Wilderness Protection Area will continue, active promotion of the reserve as a tourism destination will not occur to ensure future protection of wilderness quality and conservation values. All four reserves are intended for self-reliant visitors and the current level of low-impact use does not warrant further development of facilities to manage visitor use.

Exploration and mining activities are permitted within Billiatt Conservation Park only. To minimise disturbance and long term or irreversible impacts to the conservation values of the reserve, specific conditions may be placed on exploration licences. Any exploration activities adjacent to the reserves covered in this plan may require a buffer zone to prevent adverse impacts such as weed spread and degradation to the wilderness quality and conservation values of the reserves.

Objectives and strategies

Minimise the impact of access for tourism, exploration, mining and other purposes on the wilderness quality and biodiversity values of the reserves

- Review vehicle and track access within the reserves, considering options for track rationalisation where this does not limit fire management objectives
- Monitor the level, type and impact of visitor use on the reserves
- Maintain existing visitor facilities and other infrastructure within the reserves
- Install appropriate signage at strategic locations to identify tracks available for public use and to promote the Minimum Impact Code
- Review and document conservation values within Billiatt Conservation Park which require protection from future exploration and mining activities

Theme 5: Compliance and law enforcement

To protect the values of the reserves it is necessary to secure compliance with the *Wilderness Protection Act 1992* and the *National Parks and Wildlife Act 1972* and associated regulations. Prohibited activities known to occur in the Reserves of the Billiatt District include but are not limited to Broombush (*Melaleuca ucinata*) cutting, drug crops and illegal taking of native wildlife (bird and reptile poaching). Off-road four wheel driving and trail bike riding is also known to occur within the reserves, both as a stand alone issue and as a consequence of other illegal activities.

Some of these illegal activities, such as the cutting of Broombush, have a long history in the region. Broombush cutting for domestic use as fencing material dates back to at least the 1930s, with the Murray Mallee being the most significant area in terms of supply of the Broombush resource in South Australia (Neagle, 1994). Regulation of the industry occurred in the 1970s, with permits now required for Broombush harvesting on private land.

These illegal activities have the potential to significantly impact on biodiversity and wilderness values. Broombush cutting and wildlife poaching are particularly destructive and have direct impacts on plant and animal populations, including some of conservation significance. Off-road driving and trail bike riding not only cause erosion and damage to native vegetation, but increase the spread of weeds and pest species by opening up previously undisturbed areas.

To address the potential impacts of illegal activities on biodiversity values, future management of the reserves will have a strong focus on monitoring and compliance activities. Action will be taken in conjunction with South Australia Police, relevant state delegates and Wardens under the *National Parks and Wildlife Act 1972* to detect and prosecute offenders. While it is necessary for regional staff to enforce the law, education and community awareness activities will also provide an important tool in reducing illegal activities.

Objectives and strategies

Reduce the extent of illegal activities in the reserves through a collaborative approach with the South Australia Police, industry, community and neighbouring land managers

- Monitor the reserves for illegal activities, investigate incidents and monitor their impacts
- Provide information for surrounding landowners and the general community with regard to illegal activities occurring in the reserves

References

Cale, P and Mladovan, L (2008) *Threatening Processes for Mallee Birds*. Report for the SAMDB Natural Resources Management Board, Department for Environment and Heritage, Berri, SA.

Department for Environment and Heritage (2004) *South Australian Code of Management for Wilderness Protection Areas and Zones*. Department for Environment and Heritage, Adelaide.

Department for Environment and Heritage (2008) *Wilderness in South Australia: Protecting Habitat, Preserving Landscapes*. Department for Environment and Heritage, Adelaide.

Department for Environment and Heritage (2009) *Billiatt District Fire Management Plan 2009-2019*. Department for Environment and Heritage, Adelaide.

Neagle, N (1994). *The Environmental Impact and Ecological Sustainability of Brush cutting in South Australia*. Native Vegetation Conservation Section, Department of Environment and Natural Resources, South Australia.

For further information please contact:

Department of Environment and Natural Resources Phone Information Line (08) 8204 1910, or see SA White Pages for your local Department of Environment and Natural Resources office. Online information available at: www.environment.sa.gov.au

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Published October 2011 | ISBN: 978-1-921800-30-6 | FIS: 91157

