Department for Environment and Heritage

Management Plan

Porter Scrub Conservation Park

2007

Government of South Australia

This plan of management was adopted on **29 June 2007** and was prepared pursuant to section 38 of the *National Parks and Wildlife Act 1972*.

Government of South Australia

Department for Environment and Heritage

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Cover photography: Messmate Stringybark open woodland (Courtesy of Carly Lovering, DEH)

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FOREWORD

Porter Scrub Conservation Park is located at Kenton Valley in the Central Mount Lofty Ranges, approximately 30 kilometres north-east of Adelaide. After purchase from the estate of the late J. J. Porter, the park was proclaimed on 20 October 2005 under the *National Parks and Wildlife Act 1972* to protect a significant area of remnant forest and woodland habitat.

Conserved within the 104 hectare park are areas of Candlebark Gum open forest, which is considered endangered in South Australia, and Pink Gum low woodland and River Red Gum woodland, both of which are considered vulnerable at a state level. The park also provides likely habitat for up to 23 species of conservation significance, including the nationally endangered Southern Brown Bandicoot, the nationally vulnerable Clover Glycine and the state endangered Spotted Quail-thrush.

The land comprising Porter Scrub Conservation Park is traditionally associated with the Peramangk people of the Mount Barker Area. Following colonial settlement, the park was used for grazing and timber extraction, while talc mining was a large operation until around 1970. The presence of old mine shafts and large tree stumps in the park today are testament to this era.

Despite the utilisation and exploration of the park's natural resources, Porter Scrub Conservation Park still represents an ecologically healthy system providing important habitat in a landscape that has undergone widespread clearance of native vegetation. It offers both locals and visitors alike the opportunity to observe a number of threatened species in a natural forest/woodland ecosystem. Management of Porter Scrub Conservation Park will therefore focus on the conservation of biodiversity while providing low-key recreational and educational opportunities.

The draft management plan for Porter Scrub Conservation Park was released for public exhibition in February 2007. At the close of comment period, seven submissions were received, raising issues that mainly concerned recreational pursuits within the park. All comments and concerns were considered by the Adelaide Region Consultative Committee and forwarded to the South Australian National Parks and Wildlife Council for advice before the plan was presented for adoption.

The plan of management for Porter Scrub Conservation Park is now formally adopted under the provisions of section 38 of the *National Parks and Wildlife Act 1972*.

HON GAIL GAGO MLC

MINISTER FOR ENVIRONMENT AND CONSERVATION

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ACKNOWLEDGEMENTS

The input received during the preparation of this plan from local landholders and community organisations such as Horse SA and the Adelaide Mountain Bike Club is gratefully acknowledged.

1 PARK LOCATION AND FEATURES

Porter Scrub Conservation Park was proclaimed on 20 October 2005 under the *National Parks and Wildlife Act 1972* to protect a significant area of remnant forest and woodland habitat in the Central Mount Lofty Ranges. The park was proclaimed without access under state mining legislation.

The 104 hectare park is located at Kenton Valley, in the Adelaide Hills Council area, around 30 kilometres north-east of Adelaide (Figure 1). It forms part of the Torrens Water Catchment Area and includes the upper reaches of Howard Creek which flows into the River Torrens about six kilometres to the north (Torrens Water Catchment Management Board, 2001).

Approximately 99 hectares of the park is land that was purchased from the estate of the late J. J. Porter with financial assistance from the National Reserve System Program of the Australian Government's Natural Heritage Trust and a contribution from the Nature Foundation SA Inc. The park also consists of a closed road reserve and 3.7 hectares of land that was previously an Adelaide Hills Council reserve. The land parcels of the park are identified as Allotment 12 of DP 61682, Section 257, and Allotment U1 of Road Plan 710, Hundred of Talunga, County of Adelaide.

The park terrain is undulating to hilly, flanking a central valley along Howard Creek. It includes areas of Messmate Stringybark (*Eucalyptus obliqua*) woodland and state endangered Candlebark Gum (*Eucalyptus dalrympleana* ssp. *dalrympleana* previously *Eucalyptus rubida* ssp. *rubida*) open forest, which is also sometimes referred to as Mountain Gum (DEH, 2005). Pink Gum (*Eucalyptus fasciculosa*) low woodland and River Red Gum (*Eucalyptus camaldulensis* var. *camaldulensis*) woodland are found in the park and are also of conservation significance, with both rated as vulnerable at a state level (DEH, 2005). The park also supports grassy woodlands of Messmate Stringybark and Manna Gum (*Eucalyptus viminalis*)/South Australian Blue Gum (*Eucalyptus leucoxylon*). These grassy woodland ecosystems are recognised as a conservation priority.

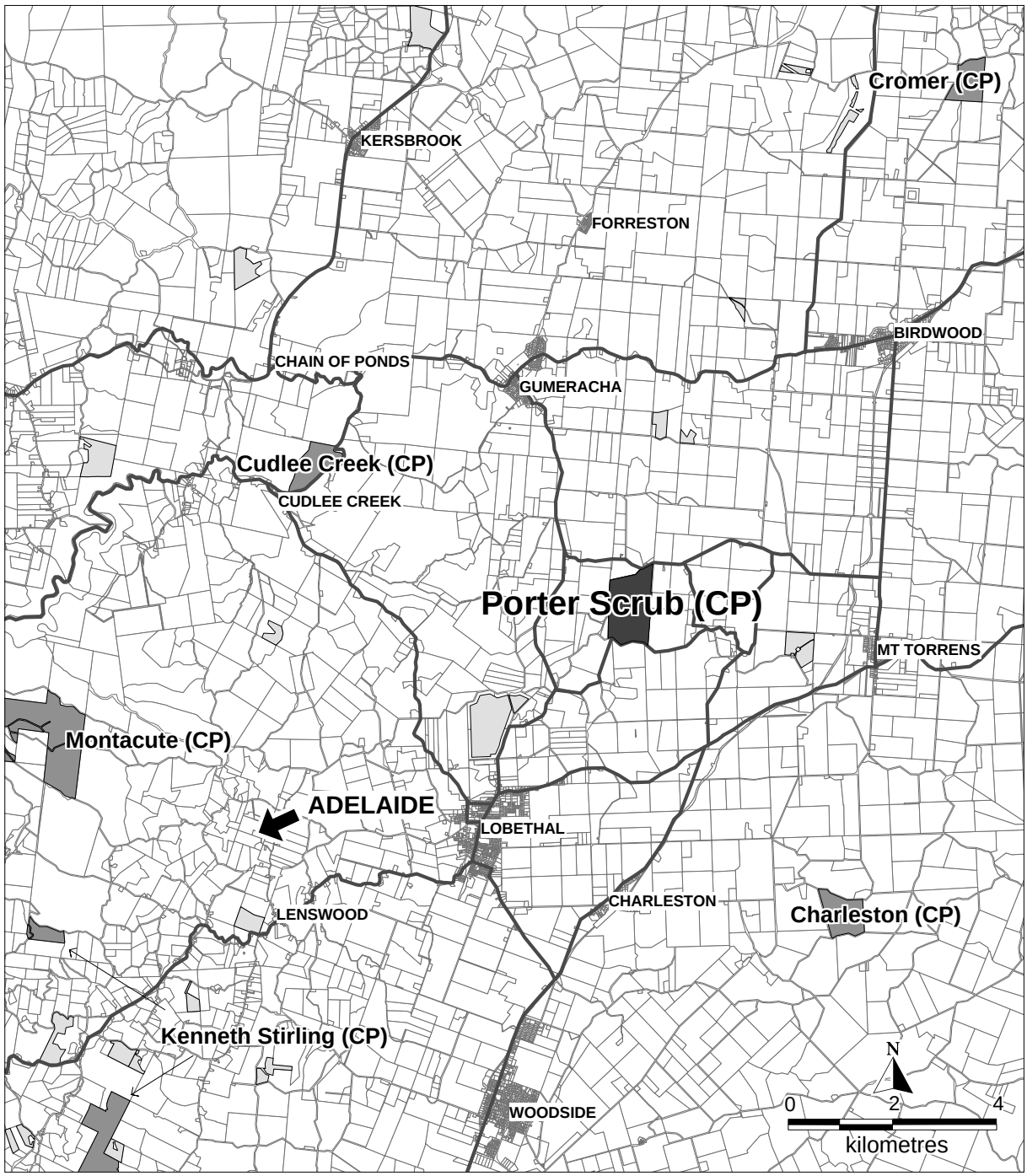
A vegetation management action plan has been prepared for the park. Using the objectives outlined in the action plan, a substantial amount of work has been undertaken to enhance the existing vegetation and control priority weed species, particularly Gorse (*Ulex europaeus*) and Blackberry (*Rubus* spp.), at key sites.

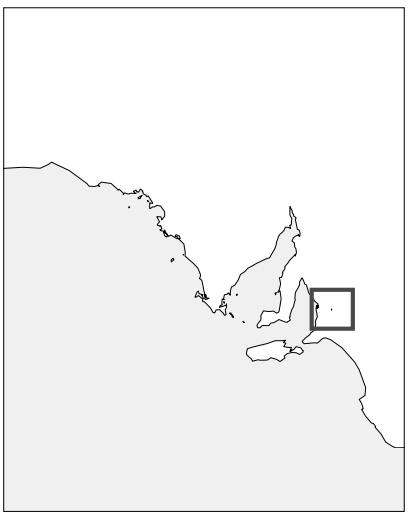
The park protects at least 12 plant species of conservation significance, including the nationally vulnerable Clover Glycine (*Glycine latrobeana*). There have been 11 bird species of conservation significance observed at Porter Scrub Conservation Park, including the Yellow-tailed Black-cockatoo (*Calyptorhynchus funereus*), which is rated as vulnerable in South Australia. The habitat conserved by the park is also suitable for a number of other threatened fauna species. These include the nationally endangered Southern Brown Bandicoot (*Isoodon obesulus obesulus*) and the Spotted Quail-thrush (*Cinclosoma punctatum punctatum*), which is endangered in South Australia and the Mount Lofty Ranges region.

The park gives visual amenity to a rural landscape, and provides recreational and educational opportunities for both local residents and visitors. It has no facilities apart from a network of service tracks, but for those with an interest in nature-based activities it offers the opportunity to observe threatened species inhabiting a key forest/woodland ecosystem. The park's previous land uses (mining and timber extraction) can still be seen today, with old mine shafts and large tree stumps evident within the park. An initial assessment has been made of the risk to the visiting public posed by the old mine workings, and public access to areas that contain old mine shafts will not be permitted given the risks involved.

Porter Scrub Conservation Park is a remnant habitat of significant size in the Adelaide Hills region where the native vegetation is highly fragmented; similar examples are relatively rare. There are patches of remnant native vegetation located nearby that, together with the park, collectively make up an important habitat resource. The park straddles two poorly represented Environmental Associations, of which the Hahndorf Environmental Association is a high priority for conservation (Laut et al., 1977). Preservation of the park's forest and woodland was an important contribution to protected areas in the Flinders Lofty Block bioregion (Environment Australia, 2000). Other National Parks and Wildlife Act reserves in the general vicinity of the park include Charleston, Cromer, Cuddlee Creek, Kenneth Stirling and Montacute Conservation Parks.

Land uses in the surrounding region include grazing, cropping, horticulture and rural living. Rural grazing properties and vineyards bound the park, while land occupied by the Kenton Valley Pistol and Shooting Club adjoins the park on the south-west.





LEGEND

(CP)	Conservation Park
	Porter Scrub Conservation Park
	State Reserve
	Heritage Agreement
	Land Parcel Boundary
	Road

Figure 1

Porter Scrub Conservation Park

Location

Map Produced from PAMS
Projection: MGA Zone 54 (GDA 94)
Date: 17 January, 2007

This map is indicative and only intended for the purposes of this management plan

2 LEGISLATIVE FRAMEWORK

2.1 National Parks and Wildlife Act 1972

Reserves are managed by the Director of National Parks and Wildlife subject to any direction by the Minister for Environment and Conservation or the Chief Executive of the Department for Environment and Heritage (DEH). When managing reserves, the Director is required under section 37 of the *National Parks and Wildlife Act 1972* to have regard to, and provide actions that are consistent with the following objectives of management stated in the Act:

- preservation and management of wildlife;
- preservation of historic sites, objects and structures of historic or scientific interest within reserves;
- preservation of features of geographical, natural or scenic interest;
- destruction of dangerous weeds and the eradication or control of noxious weeds and exotic plants;
- control of vermin and exotic animals;
- control and eradication of disease of animals and vegetation;
- prevention and suppression of bush fires and other hazards;
- encouragement of public use and enjoyment of reserves and education in, and a proper understanding and recognition of, their purpose and significance;
- generally, the promotion of the public interest; and
- preservation and protection of Aboriginal sites, features, objects and structures of spiritual or cultural significance within reserves.

Section 38 of the Act states that a management plan is required for each reserve. A management plan should set forth proposals in relation to the management and improvement of the reserve and the methods by which it is intended to accomplish the objectives of the Act in relation to that reserve.

DEH is responsible for preparing management plans and undertaking the prescribed community consultation process for the park. A standard management planning process is mandated to ensure that all statutory obligations are met. Help and guidance with plan preparation is sought and obtained from individuals, community groups or relevant advisory committees, although the Minister ultimately decides whether to adopt a management plan.

In accordance with the Act, the provisions of this management plan must be carried out and no actions undertaken unless they are in accordance with this plan. In order to achieve this, each year park managers, taking regional and district priorities into account, draw up work programs to implement strategies proposed in management plans. Implementation of these projects is determined by, and subject to, the availability of resources (eg staffing and funding).

2.2 Native Title Act 1993

Native Title describes the rights and interests Aboriginal and Torres Strait Islander People have in land and waters according to their traditional laws and customs. Commonwealth legislation, in the form of the *Native Title Act 1993* was enacted to:

- provide for the recognition and protection of native title;
- establish ways in which future dealings affecting native title may proceed and to set standards for those dealings;
- establish a mechanism for determining claims to native title; and
- provide for, or permit, the validation of past acts, and intermediate period acts, invalidated because of the existence of native title.

This management plan is released and will be adopted subject to any native title rights and interests that may continue to exist in relation to the land and/or waters. Before undertaking any acts that might affect native title, DEH will follow the relevant provisions of the *Native Title Act 1993*.

3 VISION

The vision for Porter Scrub Conservation Park is a reserve that protects a significant remnant forest and woodland ecosystem in the Central Mount Lofty Ranges.

4 ZONING

Section 39 of the *National Parks and Wildlife Act 1972* provides for the designation of zones in a reserve. Zoning aims to ensure that public use and management actions are compatible with the protection of reserve values. It constrains the use of land in zones to the conditions specified in an adopted management plan.

The "Conservation Park" category implies that the park will be managed primarily for the purpose of biodiversity conservation and public recreation will be restricted to activities deemed to be sustainable and compatible with the protection of natural and cultural values, and to areas that are considered safe.

The proposals outlined in this management plan are intended to establish a blueprint for the sustainable use of Porter Scrub Conservation Park. Given the size of the park and the management strategies proposed for the term of this first management plan, the majority of the park will be one management zone.

Mine Heritage Zone

The Mine Heritage Zone will be applied to the area(s) around the mine diggings in the central part of the park (Figure 2). The remnants of the area's mining history, including deep mine shafts, present a public risk that must be addressed with specific management effort. This would be confined to interpretation of the risks through warning signs. Public access to this area will not be permitted.

Conservation Zone

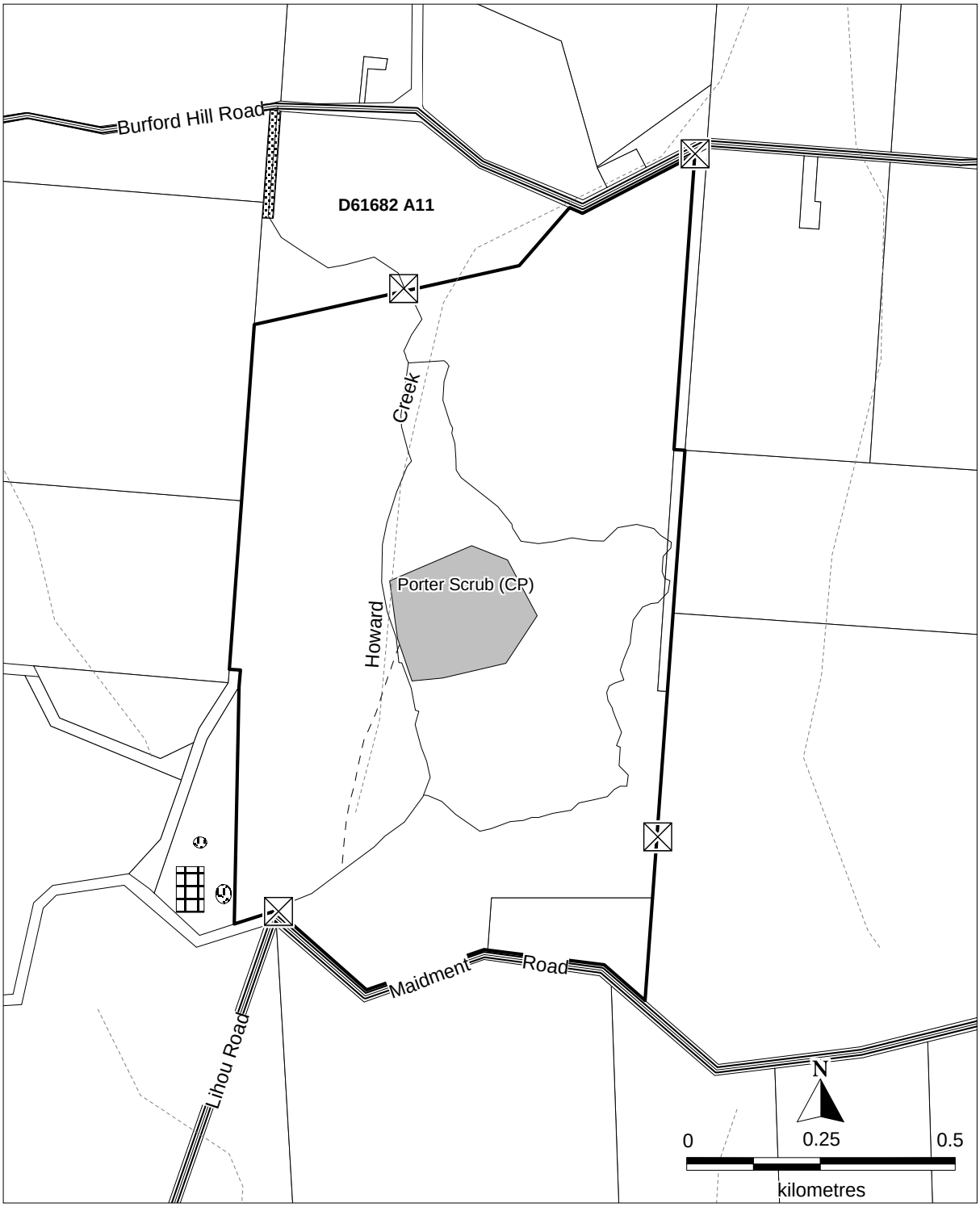
The Conservation Zone encompasses the remainder of the park and preserves significant natural environments and ecosystems containing threatened species that are of high conservation and biodiversity value. This zone will be managed primarily for the purpose of nature conservation. Public recreation will be restricted to passive activities that are compatible with the protection of conservation values, such as walking on approved tracks (see Section 8.1 Visitor Use and Access). Visible evidence of management and public use will be minimal.

Objective

Zone Porter Scrub Conservation Park to ensure appropriate public use and safety, and the conservation of wildlife habitats and cultural features.

Strategy

- Zone the park as indicated in Figure 2 and manage the park in accordance with zoning guidelines.



LEGEND

- Porter Scrub Conservation Park
- Mine Heritage Zone
- Road Reserve
- Pistol Club
- Land Parcel Boundary
- Access Track
- Road
- Watercourse
- Access Track to be Closed and Rehabilitated
- Dam
- Gate
- **D61682 A11** Property used to access the park from Burford Hill Road

Figure 2

Porter Scrub Conservation Park

Features and Zoning

Map Produced from PAMS
Projection: MGA Zone 54 (GDA 94)
Date: 17 January, 2007

This map is indicative and only intended for the purposes of this management plan

5 MANAGING NATURAL HERITAGE

5.1 Geology, Soils and Landform

Porter Scrub Conservation Park occupies hill slopes on either side of a north-south trending valley formed by Howard Creek (Figure 2) and is underlain by rocks of the Kanmantoo Group. The folded and metamorphosed sediments of Kanmantoo Trough are the youngest of the Cambrian succession in the southern part of the Adelaide Geosyncline (Burtt, 2004). The Kanmantoo Group rocks have demonstrated a strong propensity for mineralisation and have been the target for a number of mines. Consequently, there are numerous shafts and old mine workings in the park, most of which derive from the extraction of talc.

A relatively thin mantle of leached, podsolic soil has developed on the hill slopes where shallow, leached A-horizon sands overlay sandy clay B-horizons with abundant stone (Moore, 2005). Along parts of the Howard Creek valley however, the soils appear to be moderately deep and in seasonally inundated areas, can become boggy in winter.

Currently, there is some evidence of fine material moving down slope where tracks have been located inappropriately. The riding of horses in the park has resulted in a narrow defile along tracks that could channel water run-off (see Section 8.1 Visitor Use and Access). Aside from human-related erosion, rabbits have disturbed the soil structure at a number of locations in the northern section of the park; these threats to soil stability will need to be managed. In addition, any drainage issues, such as drainage channels and potholes, must be addressed to prevent soil erosion.

Under the current low levels of public use, soil erosion is not yet a critical issue. Most of the service tracks appear relatively stable, but increased traffic and storm water run-off could accelerate erosion, especially along watercourses and on the steeper slopes. Soil characteristics need to be considered when making decisions concerning the suitability of recreational activities permitted in the park, with regards to the location and type of activity, and when re-locating or constructing new tracks. Where existing routes cross suspect soils or seasonally wet areas, impacts should be monitored so that early intervention is possible to mitigate negative effects.

To encourage regeneration and hence soil stabilisation, access may need to be restricted or re-routed in areas where erosion is already evident, or bare soil has been exposed or disturbed. Visitors should be made aware of potential problems and encouraged to remain on designated routes to avoid unnecessary damage. In addition, soil conservation needs to be considered when undertaking weed control operations that involve the removal of substantial areas of introduced plants that may be stabilising the soil (see Section 5.5 Introduced Plants and Animals).

Objective

Conserve the soils within the park.

Strategies

- Consider soil types and properties, including evidence of seasonal wetting or erosion potential, when reviewing access routes and when undertaking management activities. To maintain soil stability, ensure weed removal projects are staged and complemented by natural regeneration or revegetation.
- Monitor visitor activities to prevent further human-induced soil erosion; this may require relocating or closing access temporarily or permanently.
- Work cooperatively with the Adelaide and Mount Lofty Ranges Natural Resources Management Board with regard to regional soil conservation measures.
- Any soil stabilisation works associated with erosion caused by introduced animals should be integrated with measures to control these species.

5.2 Hydrology

Porter Scrub Conservation Park includes the headwaters of Howard Creek, an intermittent tributary of the River Torrens. The remainder of the Howard Creek catchment comprises small rural properties, most of which are used for grazing or horticulture. Two smaller streams flow out of the park onto adjoining land located to the east and small amounts of run-off probably enter the park from properties at higher elevations, but the contributory effects on water quality are currently unknown. The southern boundary of the park is the divide between the Torrens and Onkaparinga Catchments.

Rising saline groundwater is an issue of major concern in many areas of rural South Australia, but the likelihood of this affecting the park remains unclear. The extent and nature of local aquifers and longer-term trends in groundwater parameters, as well as the groundwater contribution to surface water and the effects on the park's ecosystems are not well understood. It is thought that groundwater levels and salinity in the upper Torrens Catchment area are stable, although relatively high, and that saline groundwater may be contributing to surface flows in some drainage lines (PIRSA, 2001; Moore, 2005). While it appears that salinity is not likely to be an immediate problem within the park, it would still be worthwhile monitoring trends in groundwater as an aid to future management decision-making.

It is important that on-park activities do not adversely impact on water quality and maintaining intact, high quality vegetative cover is considered to be the most appropriate way to ensure management outcomes. Park managers should maintain contact with the Adelaide and Mount Lofty Ranges Natural Resources Management Board, as well as relevant authorities including the Adelaide Hills Council, with regard to the broader catchment, groundwater and salinity management issues.

Objective

Conserve the park's natural hydrological systems such that they continue to support the native vegetation and fauna of the park.

Strategies

- Maintain the integrity of Howard Creek and associated drainage systems and undertake remedial works when and where necessary and feasible.
- Participate in local and regional catchment water management programs in support of on- and off-park hydrological management, groundwater salinity mitigation and water quality improvement.

5.3 Native Vegetation

Porter Scrub Conservation Park is a biologically significant refuge of moderate size in the Central Mount Lofty Ranges. The park is an area of natural remnant habitat in a district where most native vegetation has been cleared and what remains generally occurs in fragmented patches exposed to grazing and other agricultural impacts.

Although the park was logged in the past and exhibits a substantial amount of coppice re-growth, its value as natural habitat remains significant. The long-term aim of native vegetation management is to restore and maintain the integrity of the native vegetation communities in the park. To date, this has mainly involved attempts at controlling introduced plants at sites where plant species of conservation significance occur. The objective for this plan of management will be to focus on managing threats (eg introduced species) while encouraging natural regeneration, thereby reinforcing the area of high quality natural habitat. In areas where natural regeneration may not be a feasible option, revegetation with indigenous species of local provenance may be used as an alternative.

To give purpose and direction as well as continuity over time, an initial vegetation management action plan has been prepared (Brewer, 2004). With its detailed work prescriptions and long-term priorities, this plan will guide park managers and volunteers. This plan should be progressed (and revised as required) in a manner that protects and improves natural biodiversity and contributes to the creation of biological corridors and improved catchment water quality. To implement effective regional native vegetation management it is important that DEH maintains contact with the managers of nearby areas of native vegetation and encourages collaboration on biodiversity conservation programs.

Porter Scrub Conservation Park protects 12 native plant species of conservation significance (Table 1), including Clover Glycine (*Glycine latrobeana*), which is nationally vulnerable. To date, there have been 194 species of native plant recorded in the park.

Table 1: Plants of Conservation Significance in Porter Scrub Conservation Park

Scientific Name	Common Name	Conservation Status*		
		AUS	SA	SL
Glycine latrobeana	Clover Glycine	V	V	V
Luzula flaccida	Pale Wood-rush		V	T
Thelymitra flexuosa	Twisted Sun-orchid		R	R
Myriophyllum integrifolium	Tiny Milfoil		R	R
Crassula peduncularis	Purple Crassula		R	R
Eucalyptus dalrympleana ssp. *dalrympleana*	Candlebark Gum		R	R
Aphanes australiana	Australian Piert			R
Cheilanthes sieberi ssp. *sieberi*	Narrow Rock-fern			R
Hymenanthera dentata	Tree Violet			R
Caladenia prolata	Shy Caladenia			R
Acrotriche depressa	Native Currant			R
Lindsaea linearis	Screw Fern			U

***** See Appendix for Conservation Status Codes

There are six distinct vegetation associations identified in the park (Brewer, 2004). These are illustrated in Figure 3 and described below:

1. Candlebark Gum (*Eucalyptus dalrympleana* ssp. *dalrympleana*) tall woodland/open forest on fertile soils of valley flats over Blackwood (*Acacia melanoxylon*), Kangaroo Thorn (*Acacia paradoxa*), Variable Raspwort (*Haloragis heterophylla*), Maroon-hood (*Pterostylis pedunculata*), Weeping Rice-grass (*Microlaena stipoides* var. *stipoides*) and Kidney Weed (*Dichondra repens*).
2. Candlebark Gum/South Australian Blue Gum (*Eucalyptus leucoxylon* ssp. *leucoxylon*) tall woodland on fertile soils of valley flats over Native Cherry (*Exocarpos cupressiformis*), Kangaroo Thorn, Stinking Pennywort (*Hydrocotyle laxiflora*), Weeping Rice-grass, Nodding Greenhood (*Pterostylis nutans*), Maroon-hood and Kidney Weed.
3. Messmate Stringybark (*Eucalyptus obliqua*) woodland/tall woodland on sandy loams over sandstone over Large-leaf Bush Pea (*Pultenaea daphnoides*), Wire Rapier-sedge (*Lepidosperma semiteres*), Prickly Guinea-flower (*Hibbertia exutiacies*) and Tall Sundew (*Drosera auriculata*).
4. Messmate Stringybark/Pink Gum (*Eucalyptus fasciculosa*) woodland on shallow sandy loams over sandstone on northerly aspects and gentle sloping ridge tops over Yacca (*Xanthorrhoea semiplana* ssp. *semiplana*), Prickly Guinea-flower and Wire Rapier-sedge.
5. Pink Gum low woodland on lower slopes of northwesterly aspects experiencing a seasonally water saturated subsoil over Blackwood, Yacca, Heath Tea-tree (*Leptospermum myrsinoides*), Prickly Guinea-flower and Tiny Stylewort (*Levenhookia pusilla*).
6. River Red Gum (*Eucalyptus camaldulensis* var. *camaldulensis*) woodland over Kangaroo Thorn, Bulbine-lily (*Bulbine bulbosa*) and Weeping Rice-grass.

The large area of intact Messmate Stringybark woodland/tall woodland, which dominates the park, provides important habitat to fauna. The remainder of the park is comprised of smaller areas of remnant vegetation associations, some of which are of conservation significance. For example, Candlebark Gum open forest on heavy soils in upland valleys, is an endangered ecosystem distributed in patches within the park, which are relatively intact compared to other remnants in the region. Due to its specific habitat requirements, it is thought that this association was never widespread and because it occurs on more productive soils, it has been mostly cleared for agriculture or highly modified by introduced species. Pink Gum low woodland and River Red Gum woodland are also of conservation significance, with both rated as vulnerable at a state level (DEH, 2005). The protection of the grassy woodland ecosystem is another conservation priority for the park, as this ecosystem has also been largely cleared for agriculture.

LEGEND

- Candlebark Gum tall woodland/open forest
- Candlebark Gum/South Australian Blue Gum tall woodland
- Messmate Stringybark woodland/tall woodland
- Messmate Stringybark +/- Pink Gum woodland
- Pink Gum low woodland
- River Red Gum woodland
- Land Parcel Boundary
- Watercourse

Figure 3

Porter Scrub Conservation Park

Vegetation Associations

Map Produced from PAMS
Projection: MGA Zone 54 (GDA 94)
Date: 17 January, 2007

This map is indicative and only intended for the purposes of this management plan

Porter Scrub Conservation Park is adjacent to property used for grazing. Probably as a result of adequate fencing, domestic stock are not known to stray into the park, however if this does occur, adjoining property owners will be reminded of their responsibilities to maintain and construct suitable fencing. While most of the boundary fences around the park are in good condition, especially the fencing erected by volunteers in 2005 along Maidment Road, the southern section of the eastern fence is considered to be in a state of disrepair. If this is observed to be a threat to the biodiversity of the park, DEH will liaise with the relevant landowners to organise the restoration of this boundary fence.

Phytophthora

Cinnamon Fungus (*Phytophthora cinnamomi*) and other species of *Phytophthora* are introduced plant pathogens that cause disease and death in a range of native plant species. *Phytophthora* is recognised by the Australian Government as a key threat to the survival of our native plants and animals and has developed a National Threat Abatement Plan (Environment Australia, 2001).

Symptoms of *Phytophthora* dieback have not been observed in Porter Scrub Conservation Park, but are present elsewhere in the region. Unfortunately, there is no cure for infected plants and it is extremely difficult to prevent the spread of *Phytophthora* from an infested area. However, the risk of human activity spreading *Phytophthora* into new areas can be minimised using the management strategies outlined in the DEH Standard Operating Procedures for *Phytophthora* Threat Management, which apply to all users of reserves. These strategies are aimed at minimising the transfer of *Phytophthora* in soil, water and plant roots by controlling access, adopting hygiene procedures, modifying work plans and ensuring awareness of *Phytophthora*.

Objective

Conserve and restore the native vegetation in the park and minimise threats to biodiversity, particularly to those communities or plants of conservation significance.

Strategies

- Progressively implement, and revise as required, the priorities identified in the vegetation management action plan.
- Develop and maintain partnership arrangements with other agencies, authorities, volunteer groups and the managers of nearby land so that as far as is feasible, native vegetation management and revegetation efforts are integrated on a regional basis.
- Support and encourage volunteer organisations to undertake regeneration/revegetation programs and to assist with monitoring species of conservation significance, under the guidance of DEH specialist staff.
- Ensure that fencing is maintained as required to protect native vegetation.
- Consider the threat of *Phytophthora* and take steps to prevent its introduction. If *Phytophthora* infestations are suspected, investigate and manage whenever possible.

5.4 Native Fauna

To date no comprehensive fauna surveys have been undertaken at Porter Scrub Conservation Park, but casual observation suggests there is a good diversity of native birds and other fauna. Some indication of the species that are likely to inhabit the park was obtained from the limited biological survey data that exists (Long, 1999; Turner, 2001). Using these resources it is thought there could be up to 15 vertebrate species of conservation significance found in Porter Scrub Conservation Park (Table 2). In addition, eight species of woodland and grassland butterfly, five with conservation status, may also inhabit the park (Turner, 2001).

At least 46 bird species are likely to occur in Porter Scrub Conservation Park, 14 of which are considered to be of conservation significance (Table 2). The park is of particular importance to threatened bird species in the region, due to the highly fragmented nature of extant habitat.

Table 2: Fauna of Conservation Significance likely to be found in Porter Scrub Conservation Park

Scientific Name	Common Name	Conservation Status*		
		AUS	SA	ML
Aegotheles cristatus	Australian Owlet-nightjar			U
Cacatua galerita	Sulphur-crested Cockatoo			U
Calyptorhynchus funereus	Yellow-tailed Black-cockatoo		V	V
Chrysococcyx lucidus	Shining Bronze-cuckoo		R	R
Cinclosoma punctatum punctatum	Spotted Quail-thrush		E	E
Cormobates leucophaeus	White-throated Treecreeper			U
Falcunculus frontatus	Crested Shrike-tit		V	V
Isoodon obesulus obesulus	Southern Brown Bandicoot	E	V	
Melithreptus gularis	Black-chinned Honeyeater		V	V
Pardalotus punctatus punctatus	Striated Pardalote			
Petroica multicolor boodang	Scarlet Robin			U
Sericornis frontalis	White-browed Scrubwren			U
Stagonopleura guttata	Diamond Firetail		V	V
Strepera versicolor melanoptera	Grey Currawong			U
Zoothera lunulata	Bassian Thrush		R	V

***** See Appendix for Conservation Status Codes

Western Grey Kangaroos (*Macropus fuliginosus*) are regularly seen in Porter Scrub Conservation Park, as are Echidnas (*Tachyglossus aculeata*) and a few species of insectivorous bats. Koalas (*Phascolarctos cinereus*) have also been identified in the park. While they are a native species, they were originally restricted to the Lower South East of the State and have been introduced to the Mount Lofty Ranges (Armstrong et al., 2003).

Further investigation may identify other native mammals in Porter Scrub Conservation Park. It would be expected that the Common Brushtail Possum (*Trichosurus vulpecula vulpecula*) and Common Ringtail Possum (*Pseudocheirus peregrinus*) would also inhabit the park. The Mount Lofty Ranges Southern Brown Bandicoot Recovery Team of DEH understands that in 2003 there was a single sighting of the Southern Brown Bandicoot (*Isoodon obesulus obesulus*) in Porter Scrub Conservation Park. This species is nationally endangered and vulnerable in South Australia. However, subsequent surveys have been unable to confirm the presence of the species in the park, even though suitably dense habitat exists.

Although the park is one of the largest bushland remnants in the Central Mount Lofty Ranges, encroaching land uses, habitat modification, introduced species and periodic bushfires have impacted on native fauna in the area. It is important that where possible, connectivity is maintained to other vegetated areas so that they collectively form a wildlife corridor. By collaborating with the managers of native vegetation on private land and with other agencies, the usefulness of existing habitat can be improved.

The number of kangaroos in the park has not been surveyed but some anecdotal evidence suggests the population may be larger than is ecologically sustainable. Monitoring to ascertain the impacts that kangaroos are having on native vegetation and habitat quality is required. Systematic counts should be undertaken, so that optimum population densities can be compared against habitat types, while also considering prevailing seasonal conditions, all in relation to the condition of native vegetation.

Objective

Identify and protect native fauna species, especially those of conservation significance.

Strategies

- Encourage volunteer groups and others to conduct fauna surveys and undertake population monitoring. Investigate opportunistic sightings to verify species identification.
- Monitor numbers of Western Grey Kangaroos and their impact on native vegetation.

5.5 Introduced Plants and Animals

Porter Scrub Conservation Park has a lower incidence and distribution of significant weed species compared to most parts of the Mount Lofty Ranges (Brewer, 2004). The native vegetation is in very good condition, with a diverse understorey and intact areas of mature trees. Despite this, at least 59 introduced plant species have been recorded in the park, some of which may require monitoring and control. There is a higher abundance of introduced plant species in the northern part of the park, which was used for grazing purposes prior to park proclamation, and in areas that have recently been burnt. In addition, weed infestations can be found along most of the access routes and around park boundaries. Blackberry (*Rubus* spp.) occurs along the creek lines and there is some infestation of Gorse (*Ulex europaeus*) along service tracks. There have already been some management activities undertaken in an effort to control these two introduced species in the park.

The wide distribution but low overall density of weeds throughout the park necessitates a strategic approach to weed management. In applying a strategic approach, the area of weed-free native vegetation can be consolidated and then maintained with relatively little ongoing effort. Action should be directed towards the species that pose the greatest threat to biodiversity, concentrating on priority areas and focusing initially on the sites of highest biodiversity value, where reasonably intact native vegetation remains. The vegetation management action plan provides detailed prescriptions about how the various pest plants can be dealt with most effectively. Implementation of the introduced plant control measures outlined in this plan is a high priority for park management.

The vegetation management action plan for Porter Scrub Conservation Park provides a comprehensive list and record of areas of major infestation. The species listed in Table 3 are considered to be the highest priority for introduced plant control according to the vegetation management action plan and are declared under the *Natural Resources Management Act 2004*. In addition, Onion Weed (*Asphodelus fistulosus*), which is also declared under this Act has been identified in the park and should be monitored and controlled.

Table 3: Declared Weed Species Recorded in Porter Scrub Conservation Park

Scientific Name	Common Name
Allium triquetrum	Three-cornered Garlic
Cretaegus monogyna	Hawthorn
Cytisus proliferus	Tagasaste
Genista monspessulana	Montpellier Broom
Hedera helix	English Ivy
Oxalis pes-caprae	Soursob
Oxalis purpurea	One O'Clock
Rosa rubiginosa	Sweet Briar
Rubus spp.	Blackberry
Ulex europaeus	Gorse
Vinca major	Periwinkle

When park managers or volunteer groups are undertaking vegetation management it is important to be mindful that the removal of large patches of introduced plants can potentially expose soil to erosion and could deny native fauna immediate habitat. For example, elsewhere in the Adelaide Hills the Superb Blue Wren (*Malurus cyaneus*), other small native bird species, and the Southern Brown Bandicoot (*Isoodon obesulus obesulus*) inhabit dense Blackberry thickets. This introduced habitat type may have become important for their survival. Therefore, introduced plant control programs may need to be staged and integrated with regeneration/revegetation activities, to ensure that suitable habitat is provided.

Introduced animals that occur on or within five kilometres of the park include the European Rabbit (*Oryctolagus cuniculus*), Brown Hare (*Lepus capensis*), House Mouse (*Mus musculus*), Black Rat (*Rattus rattus*), Red Fox (*Vulpes vulpes*), Feral Cat (*Felis catus*) and Fallow Deer (*Cervus dama*). Stray cats and dogs and a number of introduced bird species, such as the Common Starling (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*), Eurasian Blackbird (*Turdus merula*) and European Goldfinch (*Carduelis carduelis*) are also common.

Some activities undertaken for the control of introduced animals can pose a risk if not assessed appropriately. Where possible, introduced animals will be controlled with consideration to the damage they cause and the risk that control activities may pose to off-target species.

Rabbits are perceived as the highest priority for pest animal control within the park. They have the potential to impede the recruitment and growth of native vegetation, and in doing so they can remove habitat for native fauna, encourage erosion through altering soil structure, and facilitate weed invasion. Rabbit Haemorrhagic Disease (RHD; calicivirus) has not had a marked effect on rabbit numbers in the region since its initial spread in 1995, possibly due to the occurrence of a pre-existing benign strain of the virus or temperate climatic conditions. Rabbits may have become more prevalent due to increased efforts in the control of foxes, or complacency among land managers believing that RHD and myxomatosis were providing sufficient control. Rabbit control can be achieved through the strategic application of the 1080 and pindone poisons, and the fumigation and destruction of burrows provided that risks to off-target species are assessed.

Rabbits provide a reliable and abundant food resource for introduced predator populations such as foxes, dogs and cats, which are also known to have a serious impact on native fauna. The decision to control foxes and/or cats must give consideration to, not only the damage they cause to populations of native fauna such as the Southern Brown Bandicoot, but also their capacity to regulate rabbit populations. The use of 1080 baiting is an effective approach to controlling foxes and will be assessed against the risk to interrelated animals and native species, and comply with State and National legislation and DEH policy.

Fallow Deer are observed occasionally in the park. Deer contribute to total grazing pressure, damage boundary fences and cause trail compaction. Damage in the park caused by deer will be monitored to determine the level of control required.

Introduced plants and animals pose a serious threat to biodiversity, and unfortunately, so can some of the activities undertaken for their control. Careful management through integrated pest control programs in accordance with any existing guidelines and regional or local management plans is the most effective way to ensure that pest animal numbers are reduced with minimal impact on native flora and fauna, until a long-term biological control alternative is found. Consequently, introduced plant and animal management is a regional issue and DEH is enthusiastic to work with other agencies, volunteer groups and landowners adjacent to the park (eg Kenton Valley Pistol and Shooting Club). It must be noted that liaison with park neighbours would be a prerequisite for any control work in Porter Scrub Conservation Park that involved using poisonous baiting. Regionally, introduced plant and animal control should involve DEH, the owners/managers of surrounding properties, the Adelaide Hills Council, the Adelaide and Mount Lofty Ranges Natural Resources Management Board and any other introduced species control experts or authorities.

Objective

Control and if possible eradicate introduced plants and undertake measures to control introduced animals in the park, preferably as a component of regional initiatives.

Strategies

- Implement the vegetation management action plan against long-term, achievable and measurable goals and undertake coordinated projects for pest plant control, land rehabilitation and revegetation (if necessary) using native species of local provenance.
- Take erosion potential and native fauna habitat requirements into consideration when planning and undertaking native vegetation rehabilitation and introduced plant control programs.
- Assess the damage to native fauna and vegetation populations, and the impact on conservation efforts, caused by introduced animals.
- Set priorities for managing introduced animals, with consideration given to practicality, local management plans and risk to off-target species.
- To ensure an integrated approach to all introduced species control, park managers should work in cooperation with the local community, adjoining landowners, the Adelaide and Mount Lofty Ranges Natural Resources Management Board, the Adelaide Hills Council, any other relevant authorities and volunteers.

6 MANAGING FIRE

The fire history of Porter Scrub Conservation Park has not been documented, but it is known that the area was burnt out in the Black Friday fires of 1939. There are obvious signs of more recent, smaller burns on the northern side of the park that are understood to have been deliberately lit (Brewer, 2004). As an area of natural vegetation, it is important that the fire-related risks are assessed and strategies implemented to manage these risks.

Park managers will implement fire management measures in relation to the risk to built assets and ecological diversity. In recent years, DEH has been pursuing a program of prescribed burning in reserves in the Adelaide Hills. To date, there has been no prescribed burning undertaken at Porter Scrub Conservation Park, however this will be considered on the basis of risk assessment.

Fire management should reflect changing conditions not only within and adjacent to the park, but should also strive to minimise negative impacts on biodiversity values. Given the small size of the park, bushfire is an issue that needs to be addressed in an integrated manner with the owners/managers of neighbouring properties. Community understanding of the nature of fire hazard and how sensible planning can be complementary to the objectives of managing the park's flora and fauna should be fostered. Park managers should continue to maintain a cooperative and consultative relationship with park neighbours and the local community through liaison with the Country Fire Service (CFS), the Adelaide Hills Council and other interested parties.

Porter Scrub Conservation Park can currently be accessed for fire management purposes from the north-south central service track and the park's northern boundary (Figure 2). When fire management planning is undertaken these tracks and fire management access for the park will be reviewed through an auditing process, against the Government Agencies Fire Liaison Committee standards for fire tracks. Until this has been completed, the current fire management access for the park will be maintained.

To integrate district fire management, fire management planning will be undertaken for the park, in consultation with adjoining CFS Groups and the District Bushfire Prevention Committee. Neighbours, other stakeholders and the wider community should also be consulted to ensure an understanding of the fire risks and mitigating actions being proposed or undertaken in the park.

Fire management planning will:

- identify natural and cultural heritage values threatened by inappropriate fire regimes and built assets vulnerable to damage by fire;
- provide a framework for the management of bushfire suppression, including identification of potential strategic access and control lines;
- provide a framework for the use of a suite of fire management strategies, including prescribed burning for protection of life, and property, and the conservation of biodiversity and other natural and cultural values; and
- consider the environmental impact of proposed fire management activities on the natural features of the park and mitigate these impacts to the fullest extent possible.

Objective

Manage fire to ensure the protection of life and property, the maintenance of biodiversity and the protection of natural, cultural and built values.

Strategies

- Develop, implement and review fire management plans in association with the CFS, park neighbours and other stakeholders.
- Continue to work with the local District Bushfire Prevention Committee, CFS and the Kenton Valley Pistol and Shooting Club and others to minimise risk to life and property within and surrounding the park.
- Ensure any fire management activities have minimal impact on natural values and are integrated with any vegetation management programs where practicable.

7 MANAGING CULTURAL HERITAGE

7.1 Indigenous Heritage

Peramangk Culture and Heritage

The land comprising Porter Scrub Conservation Park is traditionally associated with the Peramangk people of the Mount Barker area (Tindale, 1974) and is within the area covered by the Kaurna Peoples Native Title Claim.

Relatively little is documented about the Peramangk people, referred to as the Mount Barker Tribe in early references, but Draper (1985) provides a brief description of their traditional lifestyle. Following colonial settlement, the Peramangk population was substantially reduced as a result of introduced diseases, dispersal, dispossession of their land and water supplies, and possibly violent conflict. It is not known if Aboriginal people were able to maintain association with the Porter Scrub Conservation Park area in the post-colonial period and to date the extent of Aboriginal heritage at the park has not been researched.

However, it is understood that some descendants of the Peramangk people still live on or near their country today and retain interest in their culture, despite little of their language and stories being recorded. This traditional wisdom may have been irretrievably lost, although for historical or cultural reasons, knowledge of cultural heritage can be privileged to selected people and therefore unable to be recorded.

Given the lack of existing information, it is important that research be undertaken in order to gain a better understanding of the extent of Aboriginal occupancy and use of the park area. DEH staff should liaise with representatives of Aboriginal people who have traditional affiliation with the area and take appropriate steps to facilitate their involvement with the park and implementing this plan of management, if they are interested in being involved.

Aboriginal Heritage Act 1988

The purpose of the *Aboriginal Heritage Act 1988* is the protection and preservation of sites, objects and remains of significance to Aboriginal people. 'Aboriginal site' and 'Aboriginal object' are defined in that Act as an 'area of land or an object that is of significance according to Aboriginal tradition; or that is of significance to Aboriginal archaeology, anthropology or history'. The Aboriginal Affairs and Reconciliation Division (AARD) of the Department of the Premier and Cabinet maintains a Central Archive, including the Register of Aboriginal Sites and Objects.

Although there are no sites listed on that Central Archive for the park and no sites or objects of significance are known to exist there, a comprehensive archaeological survey has not been undertaken. Research is needed to identify and record any sites of significance on the park.

Any Aboriginal cultural heritage sites that are identified in the future may require special protection and in carrying out the strategies proposed in this plan, DEH staff will make sure that the *Aboriginal Heritage Act 1988* is complied with. DEH staff should consult with AARD, the local Aboriginal Heritage Committee and any other relevant Aboriginal people before commencement of any significant development works.

Objective

Ensure that any Aboriginal sites, objects and remains are protected and preserved.

Strategies

- Consult with the relevant regional Aboriginal heritage committees and relevant Government Aboriginal heritage authorities in decisions regarding the management of Aboriginal heritage.
- Identify and protect any Aboriginal sites, objects and remains in cooperation with the relevant regional Aboriginal heritage committees, AARD and other relevant authorities.
- In consultation with the relevant regional Aboriginal heritage committees, submit cultural sites and stories that relate to the park for inclusion on the AARD Central Archive.

7.2 Non-Indigenous Heritage

For most of the 20th century the Porter family were the freehold owners of the land comprising Porter Scrub Conservation Park, which is why their name has become geographically associated with the area. Despite appearances, it was always a working property and what can be seen today reflects a past history of management. Although there are no sites in the park that are listed on the State Heritage Register, the history of this landscape has ongoing implications for management.

While Porter Scrub Conservation Park was never cleared, sheep were grazed until the land was acquired for conservation purposes and fenced-off from the agricultural portion of the Porter property, located to the north of the park. The Porters also used the park as a source of timber and large numbers of saw logs were extracted. The stumps and coppice regrowth seen today are a testament to that era. In addition, bark was stripped from Golden Wattle (*Acacia pycnantha*) trees for the tanning industry, which was another major activity on the land.

Early mining exploration occurred along Howard Creek and in later years, mines were established for talc extraction. This was quite a large operation, employing many people. The numerous old mine sites within the park are either talc quarries or exploration shafts used to search for talc and possibly other minerals. Talc mining only ceased in the late 1960s or early 1970s due to competition in the industry. The primary mining site in the central part of the park was also a source of soapstone, which was used as "fire bricks" for use in ovens and kilns. Although this site is largely overgrown with Kangaroo Thorn, a few mining artefacts remain.

Old fences within the park are a legacy of past land use. If after due consideration it is decided that they no longer serve any useful purpose, the fencing wire should be removed leaving the posts in place to identify the former boundaries from a historical perspective. Rubbish associated with past land use, such as corrugated iron, should be removed from the park.

DEH should support and encourage historic surveys and research into previous land uses of the area, and there may be merit in interpreting the history of the talc mines, particularly in the context of visitor safety. DEH should liaise with the Office of Minerals and Energy Resources (PIRSA) regarding mining history and management of former mine sites.

Objective

Ensure non-indigenous cultural heritage values of the park are conserved and protected.

Strategies

- Support and where appropriate facilitate surveys of and research into historic sites and stories that relate to the history of the park area; map and document sites, objects and structures associated with the park's former land uses.
- Give consideration to interpreting cultural heritage and sites that highlight the history of the park, particularly the former mine workings, and associated public safety risk issues.
- Remove obsolete internal fences and rubbish as and where necessary.

8 MANAGING TOURISM AND RECREATION

8.1 Visitor Use and Access

Porter Scrub Conservation Park is a relatively intact area of remnant vegetation in the Central Mount Lofty Ranges that provides limited opportunities for public access. The park receives few visitors and it is not intended to be a visitor destination but rather an area managed for conservation purposes.

There are no camping facilities or dedicated day-visit sites and the current pattern of low-key use (ie nature observation and bush walking) is compatible with the primary role of the park for biodiversity conservation. Consequently, there is no immediate demand or requirement for built facilities and none are planned for the term of this management plan. The only access is by foot and this current level of access does not appear to be causing problems at this point in time. Given the low numbers of visitors, there is no requirement for a designated car parking area inside the park boundaries. If it is observed that the level of visitor use threatens the conservation values of the park, additional management actions may be required to limit park access. The park should not be actively promoted, consistent with this proposed level of access.

Public vehicular access is not permitted within the park. However, there are four gated entrances for access, which are routinely used by staff for management purposes (Figure 2). The main park entrance is located off Maidment Road, where there is a small area available for parking on the road verge and will remain as the main public access point to the park. There is potential for developing car parking and turn-around facilities at this location. Car parking congestion is not currently a problem, but any additional parking facilities at the Maidment Road entrance would need to be located outside the park boundary to avoid vegetation clearance and impacts upon biodiversity values. Under the current provisions of the Adelaide Hills Development Plan, the development of a car park outside the park boundary would be assessed as a non-compliant form of development. Therefore, if a car park is required, liaison with the Adelaide Hills Council will need to be undertaken.

The park provides low-key recreational opportunities for the local community. Consistent with this level of use no new walking trails will be constructed in the park. Foot-traffic can pose threats to biodiversity values through damage to sensitive vegetation and soil surfaces. Consequently, this will only be permitted along the existing access tracks (Figure 2), which need to be assessed to ensure that they are suitably located, take into account topography and avoid sensitive areas (eg erodible soils). DEH will liaise with peak recreation bodies, such as Walking SA, the Walking Trails Support Group and other similar organisations, to assist in this assessment. It may be sensible to mark the access tracks where necessary for visitor convenience, enjoyment and safety and for conservation of the park's natural values.

Old mine shafts and workings exist within the Mine Heritage Zone. DEH will liaise with the Office of Minerals and Energy Resources (PIRSA) to undertake a risk assessment of the old mines. This management plan proposes the designation of a Mine Heritage Zone, where public access will not be permitted until public risk issues are resolved (see Section 4 Zoning). Appropriate signs have been erected, warning visitors of the prohibition of public access to this area.

As a minimum, there should be adequate signs to mark boundaries and inform visitors entering the park about the opportunities it provides and the responsibilities involved in using it. In particular, visitors need to be warned of the danger posed by old mine workings.

Considerations and suitability for specific recreation activities are as follows:

- Walking and bird watching are popular activities and are acceptable recreational pastimes in this park, provided that walkers remain on designated routes, both for their own safety and to avoid disturbing the natural environment.
- None of the regional walking trail networks currently go through Porter Scrub Conservation Park. A review of the Mount Lofty Walking Trails network in the Adelaide Hills Council area is currently being undertaken and includes the identification of priority trail routes, which may impact on the access tracks and walking trails within the park. Should the review indicate that the tracks and trails within Porter Scrub Conservation Park are suitable for inclusion in the priority trail routes for the Mount Lofty Walking Trails network this would be considered appropriate, provided the integrity of the park is not compromised.
- Orienteering events will not be permitted in the park, given that such activities have the potential to compromise the park's high biodiversity values (eg nationally vulnerable Clover Glycine (*Glycine latrobeana*)) and the risks associated with open mine shafts.

- To protect the natural values of Porter Scrub Conservation Park all domesticated animals, including dogs, will not be permitted in the park, consistent with the *National Parks and Wildlife (National Parks) Regulations 2001*. To manage existing patterns of use, park visitors need to be made aware of this regulation and compliance enforced.
- Unauthorised horse riding has taken place in Porter Scrub Conservation Park in the past. Potential management issues associated with this type of activity include unsustainable levels of vegetation trampling, soil erosion and track deterioration (Wilson & Seney, 1994; Newsome et al., 2002). These problems are often exacerbated in environments similar to that found in Porter Scrub Conservation Park; landscapes that contain slopes (Weaver & Dale, 1978); areas of dampness (Landsberg et al., 2001); and trails that do not undergo regular ongoing maintenance (Upitis, 1980, after Landsberg et al., 2001). An additional management issue associated with horse riding is the introduction and further spread and establishment of weeds (Pickering & Hill, 2007), especially along trails (Landsberg et al., 2001). DEH has also identified weed species, such as Onion weed (*Asphodelus fistulosus*), Soursob (*Oxalis pes-caprae*) and Gorse (*Ulex europaeus*) germinating from horse manure deposited along tracks within the park: increasing the level and extent of weed spread in Porter Scrub Conservation Park would further compromise the park's natural values. As this is a conservation park with an emphasis on biodiversity conservation, horses are not permitted.
- Unauthorised cycling has taken place in Porter Scrub Conservation Park. Potential management issues associated with this type of activity include trail erosion, soil compaction, trail widening, and vegetation disturbance (Goeft & Alder, 2001; Turton, 2005). The physical impacts of cycling can become more pronounced in environments that are prone to wetting and/or contain hilly terrain (Chiu & Kriwoken, 2003; Turton, 2005), such as Porter Scrub Conservation Park. Some studies question whether cycling causes more environmental damage than other recreational activities (Thurston & Reader, 2001), and other studies suggest that many of the environmental impacts associated with cycling can be minimised through appropriate track design (Goeft & Alder, 2001). However, expanding the recreational opportunities for cycling in Porter Scrub Conservation Park through track redesign and ongoing maintenance would be inappropriate in a park managed primarily for biodiversity conservation. This is especially so given the close proximity of the nationally recognised mountain biking facilities at Cudlee Creek Forest Reserve. Therefore, cycling will continue to be prohibited in Porter Scrub Conservation Park.
- Porter Scrub Conservation Park has occasionally been used for camping purposes in the past. Given that the park is relatively small, not regularly patrolled, and lacks the required facilities, camping has the potential to impact adversely on the park's biodiversity values. As such, camping, including the use of campfires and portable stoves is prohibited in the park.

Objectives

Ensure that visitors who use the park understand and appreciate its natural values, respect its primary role for biodiversity conservation, and have minimal impact on the park environment.

Provide visitor access to the park without compromising park values.

Strategies

- Manage the park for low-key visitor use without the requirement for facility development.
- Review the use and condition of access tracks in the park, re-routing them and undertaking maintenance works to improve or repair the tracks where necessary, while closing off others as required to ensure public safety and to allow native vegetation to regenerate. Encourage park users to stay on the designated tracks.
- Establish entrance signs and other critical information sources for visitors to ensure they are informed of the values of the park and appropriate behaviour when using it.
- Liaise with the Adelaide Hills Council regarding options for improving the Maidment Road entrance, if more adequate parking is required in the future.
- Liaise with PIRSA to identify locations within the park requiring signage to address public risk issues relating to old mine workings, and develop and install signage as required.
- Prohibit horses and cycling in Porter Scrub Conservation Park to protect the park's natural values.
- Prohibit camping and the associated use of campfires and portable stoves in the park.

SUMMARY OF MANAGEMENT STRATEGIES

MANAGING NATURAL HERITAGE

Geology, Soils and Landform

- Consider soil types and properties, including evidence of seasonal wetting or erosion potential, when reviewing access routes and when undertaking management activities. To maintain soil stability, ensure weed removal projects are staged and complemented by natural regeneration or revegetation.
- Monitor visitor activities to prevent further human-induced soil erosion; this may require relocating or closing access temporarily or permanently.
- Work cooperatively with the Adelaide and Mount Lofty Ranges Natural Resources Management Board with regard to regional soil conservation measures.
- Any soil stabilisation works associated with erosion caused by introduced animals should be integrated with measures to control these species.

Hydrology

- Maintain the integrity of Howard Creek and associated drainage systems and undertake remedial works when and where necessary and feasible.
- Participate in local and regional catchment water management programs in support of on- and off-park hydrological management, groundwater salinity mitigation and water quality improvement.

Native Vegetation

- Progressively implement, and revise as required, the priorities identified in the vegetation management action plan.
- Develop and maintain partnership arrangements with other agencies, authorities, volunteer groups and the managers of nearby land so that as far as is feasible, native vegetation management and revegetation efforts are integrated on a regional basis.
- Support and encourage volunteer organisations to undertake regeneration/revegetation programs and to assist with monitoring species of conservation significance, under the guidance of DEH specialist staff.
- Ensure that fencing is maintained as required to protect native vegetation.
- Consider the threat of *Phytophthora* and take steps to prevent its introduction. If *Phytophthora* infestations are suspected, investigate and manage whenever possible.

Native Fauna

- Encourage volunteer groups and others to conduct fauna surveys and undertake population monitoring. Investigate opportunistic sightings to verify species identification.
- Monitor numbers of Western Grey Kangaroos and their impact on native vegetation.

Introduced Plants and Animals

- Implement the vegetation management action plan against long-term, achievable and measurable goals and undertake coordinated projects for pest plant control, land rehabilitation and revegetation (if necessary) using native species of local provenance.
- Take erosion potential and native fauna habitat requirements into consideration when planning and undertaking native vegetation rehabilitation and introduced plant control programs.
- Assess the damage to native fauna and vegetation populations, and the impact on conservation efforts, caused by introduced animals.
- Set priorities for managing introduced animals, with consideration given to practicality, local management plans and risk to off-target species.
- To ensure an integrated approach to all introduced species control, park managers should work in cooperation with the local community, adjoining landowners, the Adelaide and Mount Lofty Ranges Natural Resources Management Board, the Adelaide Hills Council, any other relevant authorities and volunteers.

MANAGING FIRE

- Develop, implement and review fire management plans in association with the CFS, park neighbours and other stakeholders.
- Continue to work with the local District Bushfire Prevention Committee, CFS and the Kenton Valley Pistol and Shooting Club and others to minimise risk to life and property within and surrounding the park.
- Ensure any bushfire hazard reduction activities have minimal impact on natural values and are integrated with any vegetation management programs.

MANAGING CULTURAL HERITAGE

Indigenous Heritage

- Consult with the relevant regional Aboriginal heritage committees and relevant Government Aboriginal heritage authorities in decisions regarding the management of Aboriginal heritage.
- Identify and protect any Aboriginal sites, objects and remains in cooperation with the relevant regional Aboriginal heritage committees, AARD and other relevant authorities.
- In consultation with the relevant regional Aboriginal heritage committees, submit cultural sites and stories that relate to the park for inclusion on the AARD Central Archive.

Non-Indigenous Heritage

- Support and where appropriate facilitate surveys of and research into historic sites and stories that relate to the history of the park area; map and document sites, objects and structures associated with the park's former land uses.
- Give consideration to interpreting cultural heritage and sites that highlight the history of the park, particularly the former mine workings, and associated public safety risk issues.
- Remove obsolete internal fences and rubbish as and where necessary.

MANAGING TOURISM AND RECREATION

Visitor Use and Access

- Manage the park for low-key visitor use without the requirement for facility development.
- Review the use and condition of access tracks in the park, re-routing them and undertaking maintenance works to improve or repair the tracks where necessary, while closing off others as required to ensure public safety and to allow native vegetation to regenerate. Encourage park users to stay on the designated tracks.
- Establish entrance signs and other critical information sources for visitors to ensure they are informed of the values of the park and appropriate behaviour when using it.
- Liaise with the Adelaide Hills Council regarding options for improving the Maidment Road entrance, if more adequate parking is required in the future.
- Liaise with PIRSA to identify locations within the park requiring signage to address public risk issues relating to old mine workings, and develop and install signage as required.
- Prohibit horses and cycling in Porter Scrub Conservation Park to protect the park's natural values.
- Prohibit camping and the associated use of campfires and portable stoves in the park.

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APPENDIX: CONSERVATION STATUS CODES

Australian Conservation Status Codes

The following codes are based on the current listing of species under Section 179 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

EX **Extinct**: there is no reasonable doubt that the last member of the species has died.

EW **Extinct in the Wild**: known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CE **Critically Endangered**: facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

E **Endangered**: facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

V **Vulnerable**: facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent**: the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

Note: Prescribed criteria as defined under the IUCN Red List of Threatened Species.

South Australian Conservation Status Codes

The following codes are based on the current listing of species under Schedules of the *National Parks and Wildlife Act 1972*, as amended in 2000. To align with other States, Territories and the Commonwealth (EPBC Act) listing categories and ratings, the IUCN criteria were used as a basis for determining threatened species status under the *National Parks and Wildlife Act 1972*. For IUCN criteria see:

IUCN (1994) *IUCN Red List Categories*. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland (www.redlist.org).

IUCN (2001) *IUCN Red List Categories and Criteria: Version 3.1*. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, United Kingdom (www.redlist.org).

E **Endangered**: (Schedule 7) in danger of becoming extinct in the wild.

V **Vulnerable**: (Schedule 8) at risk from potential or long term threats which could cause the species to become endangered in the future.

R **Rare**: (Schedule 9) low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant threats, but warrants monitoring and protective measures to prevent reduction of population sizes.

Regional Status Codes

The categories below apply to the species distribution at a regional level. There are no regional conservation status categories developed for mammals, reptiles or amphibians to date.

Birds

Regional conservation status for birds follow:

Carpenter and Reid (1998) *The Status of Native Birds in the Agricultural Areas of South Australia.* Unpublished and regularly updated database.

The regions are defined as follows:

ML	Mount Lofty	**MN**	Mid-North	**SE**	South-Eastern	**KI**	Kangaroo Island
MM	Murray Mallee	**EP**	Eyre Peninsula	**YP**	Yorke Peninsula		

Plants

Regional conservation ratings for plants follow:

> Lang, PJ and Kraehenbuehl, DN (2001) *Plants of Particular Conservation Significance in South Australia's Agricultural Regions*.
>
> Department for Environment and Heritage (undated) *Florlist*. Unpublished and regularly updated database.

The regions are as defined by the State Herbarium (Plant Biodiversity Centre), illustrated in the front cover of:

> Barker, WR, Barker, RM, Jessop, JP and Vonow, HP (Eds) (2005) *Census of South Australian Vascular Plants. Fifth Edition. J. Adelaide Bot. Gard. Supplement 1.* Botanic Gardens of Adelaide and State Herbarium, Adelaide.

NW	North-Western	**FR**	Flinders Ranges	**NL**	Northern Lofty	**SL**	Southern Lofty
LE	Lake Eyre	**EA**	Eastern	**MU**	Murray	**KI**	Kangaroo Island
NU	Nullarbor	**EP**	Eyre Peninsula	**YP**	Yorke Peninsula	**SE**	South-Eastern
GT	Gairdner-Torrens						

In order of decreasing conservation significance:

X **Extinct/Presumed extinct**: not located despite thorough searching of all known and likely habitats; known to have been eliminated by the loss of localised population(s); or not recorded for more than 50 years from an area where substantial habitat modification has occurred.

E **Endangered**: rare and in danger of becoming extinct in the wild.

T **Threatened**: (*Plants only*) likely to be either Endangered or Vulnerable but insufficient data available for more precise assessment.

V **Vulnerable**: rare and at risk from potential threats or long term threats that could cause the species to become endangered in the future.

K **Uncertain**: likely to be either Threatened or Rare but insufficient data available for a more precise assessment.

R **Rare**: has a low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant or widespread threats, but warrants monitoring and protective measures to prevent reduction of population sizes.

U **Uncommon**: less common species of interest but not rare enough to warrant special protective measures.

Q **Not yet assessed**: but flagged as being of possible significance.

N **Not of particular significance:** (*Plants only*) also indicated by a blank entry.

C **Common:** (*Birds only*) also indicated by a blank entry.

O **Occasional Visitor Only:** (*Birds only*) not considered of conservational status.