

2021 Northcliffe Forest Park Management Plan



Shire of Manjimup

Northcliffe Forest Park Management Committee

2021



natural resource
management program



Northcliffe Forest Park Management Plan
Northcliffe Forest Park Management Committee
Shire of Manjimup
37-39 Rose St Manjimup WA 6258
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Cover Images: Northcliffe Forest Park, by Wendy Eiby. Clockwise from top left:

Lomandra ordii (white) with other native wildflowers

Northcliffe Town Weir

Quacking Frog (*Crinia georgiana*)

Hollow Butt Picnic Site

Karri Forest (centre)

Citation

Shire of Manjimup (2019) *Northcliffe Forest Park Management Plan 2019*. Northcliffe Forest Park Management Committee, Shire of Manjimup, Rose St Manjimup, Western Australia

The Northcliffe Forest Park Management Plan 2019 has been prepared by Nathan McQuoid Landscape Ecologist for the Northcliffe Forest Park Management Committee and the Shire of Manjimup. Funded by the Western Australian Natural Resource Management Program.

The Shire of Manjimup and the Northcliffe Forest Park Committee recognise the Murrum Noongar People of the Northcliffe area and their long custodianship of the lands, waters, plants and animals.

Dedication

This Management Plan for Northcliffe Forest Park is dedicated to George Gardner OAM.

George Gardner was instrumental in the formation of Northcliffe Forest Park. He was a Northcliffe local hero and stalwart, whose ability, kindness and dedication saw and sees him widely admired and recognised for his knowledge and contribution to the betterment of the community and the conservation of nature.

George was born in the western Wheatbelt town of Pingelly in 1912, where he lived until 1932. In his early years he worked first sleeper cutting and later with his father Sam shearing in the Bencubbin district of the wheatbelt.

In 1935 George moved with his family to the Warren district, where he continued in the timber industry. George became involved in the welfare of his timber industry colleagues as Secretary of the local branch of the Timber Workers Union. After war broke out George joined the army. However, his shearing skills found him manpowered to perform essential service in the wool industry.

George moved to Northcliffe with his wife Jessie in 1946, where they raised daughters Janice and Glenda, and lived until 1994. George worked briefly again in the timber industry, and from late 1946 until 1978 for the Shire of Manjimup.

While at Northcliffe, due to his abilities and passion for Northcliffe and nature, George made an indelible impression on the community and on many who passed through, including biologists, botanists, ecologists, archaeologists, anthropologists and geologists – who had sought him out upon recommendation for his immense and detailed knowledge of the nature of the district.

George served the community on the Manjimup Shire Council, Windy Harbour Board of Control, Northcliffe Hall Committee, Recreation Committee, Hospital Board, Northcliffe Pioneer Museum Committee, Northcliffe Naturalists Group, and the St Johns Ambulance Northcliffe Brigade and Pemberton-Northcliffe Tourist Bureau – both awarding him life membership.

Such was the regard with which he was held for his self-taught knowledge of the local nature and Noongar history, George was made an Honorary Associate of the WA Museum, contributed as co-author on scientific papers on archaeology and botany, and had the Spider Orchid *Caladenia gardneri* and the fossilised extinct Land Snail *Bothriembryon gardneri* that he had discovered named in his honour. The George Gardner Rock and Artefact Collection he amassed over many years is on display in the Northcliffe Pioneer Museum, and the main road into Northcliffe Forest Park - George Gardner Dve – is named in commemoration of his contribution.

For his initiative, inspiration, generosity and leadership in contributing to the Northcliffe community and the conservation of nature, George Gardner OAM was awarded the Medal of the Order of Australia in 1985, and made a freeman of the Shire of Manjimup in 2004.

George passed away at the age of 93 in 2005.

VISION

The natural and cultural values of Northcliffe Forest Park will be in better condition in 2029 than they are at present, due to a better understanding of the threats and impacts upon the values and an improvement in conservation ambition and management techniques, as measured by the implementation and review of this management plan.

The park will provide outstanding experiences for community and visitors that are compatible with nature conservation and heritage values. Noongar cultural heritage will be cared for and activated as deemed appropriate by traditional owners, and the local community will be involved in protection and management.

Northcliffe Forest Park will be recognised as an outstanding Southern Forest and Valley natural experience, and a valuable regional conservation and tourism asset that is part of Northcliffe's identity.

As envisioned by George Gardner OAM:

Northcliffe Forest Park will be valued, enjoyed and protected by the community, for the enjoyment and wonder of generations to come and for the legacy of generations gone, and shared with visitors as the treasured natural character of Northcliffe.

PREFACE

The Shire of Manjimup is responsible for Northcliffe Forest Park, as it is vested in the Shire for the Purpose of Parkland and Recreation. The Implementation of the Northcliffe Forest Park Management Plan is subject to the approval of the CEO and Council.

Northcliffe Forest Park is managed by the Shire of Manjimup, through the Northcliffe Forest Park Management Committee and its Terms of Reference (Shire of Manjimup 2015b).

Northcliffe Forest Park is one of a number of natural and built assets the Shire of Manjimup manages for the community and visitors to the Shire. The Shire of Manjimup and its communities care about their natural environment, for its characterising values, for future generations and sharing it with visitors. These principles are reflected in the Community Strategic Plan 2019 – 2029 and the Corporate Business Plan 2019 - 2023, as stated in the Community Vision, Mission and Values (Shire of Manjimup 2019a, 2019b).

Community Vision

We are a thriving region offering an excellent quality of life that is safe, liveable and welcoming.

We value and care for our natural environment, which sustains both economic and recreational pursuits.

Our industries are recognised for their resilience, quality and innovation and for their contribution to the state of Western Australia.

Our economic diversity provides business and employment opportunities for all.

Mission

The Shire of Manjimup is a professional, effective and helpful organisation with a genuine commitment to facilitating good governance and achieving the community's vision.

We provide services and facilities, as well as manage legislation and develop policy, and we play a lead role in our Shire being an enjoyable and enviable place to live, work and visit.

We care about our community – its wellbeing, its prosperity and its sustainable future.

Values

- *Professionalism: We provide competent and effective services and encourage innovation and excellence in our people.*
- *Courtesy: We are polite, approachable and helpful in our dealings with all people.*
- *Integrity: We are honest and trustworthy and make fair and transparent decisions.*
- *Reliability: We deliver services in an efficient and consistent way and honour our commitments.*
- *Pro-activity: We actively identify solutions to community issues by being consultative and open-minded, and by showing bold leadership.*

Management plan history and changes since the previous plan

The first management plan for Reserves 23740 and 3153 (prior to a formalised Northcliffe Forest Park in 1986) was developed in 1983 by the Shire of Manjimup. It was designed to list existing attractions, uses, facilities and developments, consider specified public use

and set out management objectives. Implementation was variable, with picnic site and walk trails being among the facilities developed (Shire of Manjimup 1999).

The second Northcliffe Forest Park Management Plan was adopted by the Shire of Manjimup in January 1999. It was a combination of management plan and visitor survey, with the survey results guiding the enhancement of appropriate attractions and facilities and management recommendations (Shire of Manjimup 1999).

Since 1999, Northcliffe Forest Park has been managed according to the 1999 Management Plan. The Northcliffe Forest Park Management Committee is in place and operational, and a range of recreation facilities and allied infrastructure has been put in place, including the placement of the Northcliffe Community Resource and Visitor Centre building and carpark in the northwest corner of the park.

A procedural change since the adoption of the 1999 Plan is the revocation and adjustment of the vesting and purpose of Reserve 23740. In 1999 the Reserve was 243.35 ha in area and vested in the Shire of Manjimup for the Purpose of National Park, in 2001 the Purpose was adjusted to Parkland and Recreation and the vesting remained with the Shire of Manjimup; the size of the reserve remained the same. In 2004, Reserve 23740 was reduced in size by 1.4 ha to its current 241.95 ha (Landgate 2018).

Implementation of some of the recommendations in the 1999 Plan have not occurred due to issues such as unforeseen difficulties in resourcing, reserve vesting changes and joint management arrangements, which were rendered unnecessary by the 2001 purpose adjustment. While several recommendations were limited in their implementation scope by the rapid redundancy of prescriptive detail in their intentions. The Shire of Manjimup Corporate Business Plan 2017 – 2021 prescribes a revision of the 1999 Management Plan (Shire of Manjimup 2017b). Accordingly, this new 2019 Northcliffe Forest Park Management Plan has been developed, based on a review of the 1999 Northcliffe Forest Park Management Plan (Shire of Manjimup 1999).

This 2019 Plan is structured in line with the modern *Conservation and Land Management Act 1984* national park management plans, developed by the Department of Biodiversity, Conservation and Attractions for the Conservation and Parks Commission (DEC 2012). This structure provides for the range of issues requiring consideration and management that apply to small and large conservation and recreation reserves. The structure also provides a logical presentation of information to support an understanding of the issues and efficient implementation.

This 2019 Northcliffe Forest Park Management Plan is based on management objectives, with actions designed to meet the objectives being directional rather than through detailed prescriptions that can be uncompromising. This design is to ensure flexibility that is inherently necessary in the effective management of nature and people in natural places, which has become apparent during the evolution of management planning for national parks and reserves in Western Australia.

This 2019 Management Plan is designed to be current for ten years, and in place until it is amended or superseded by a new management plan.

New Governance, Legislation, Policy and Strategies

The Northcliffe Forest Park Management Committee is a formal Management Committee of Council of the Shire of Manjimup, which reports to Council. The Management Committee functions through a Terms of Reference and its Delegated Powers (Shire of Manjimup 2015b).

The Shire of Manjimup Strategic Community Plan 2019-2029 (Shire of Manjimup 2019a) provides updated guidance regarding the community's aspirations for the direction of the Shire and their communities. Protection of the environment is a primary aspiration.

The Shire of Manjimup Corporate Business Plan 2019-2023 (Shire of Manjimup 2019b) takes its lead from the Strategic Community Plan, as the roadmap of actions to support delivery of the Strategic Community Plan.

The Strategic Community Plan and Corporate Business Plan are a primary source of guidance for this management plan, as they convey the community's aspirations arrived at through a rigorous process, relate to the range of relevant legislation, policies and strategies, and project the governance processes of the Shire of Manjimup as the responsible agency. The Corporate Business Plan specifically identifies the review of the 1999 Northcliffe Forest Park Management Plan.

Shire of Manjimup Natural Environment Strategy, updated 2008 (Shire of Manjimup 2008a), recognises the importance and value of the Shire's natural environment. Its aims declare a local approach to environmental issues, and for strategies, actions, the need for partnerships, and the best available information as being necessary to improve environmental outcomes.

Warren Blackwood Alliance of Councils Strategic Plan 2016-2019 (WBAC 2016) is a regional response to changes in the timber industry that have reduced its economic contribution. The strategy identifies the growth of tourism as a driver for economic activity.

The Future for Tourism for the Southern Forests and Valleys Region (WBAC 2017); is a strategy of the Warren Blackwood Alliance of Councils to develop a Local Tourism Organisation to support increased tourism and the subsequent economic benefits for the region after the restructure of the timber industry.

South West Development Regional Blueprint 2014 (SWDC, RDA-SW 2014). Recognises sustaining environmental qualities and tourism as priorities, and biodiversity and iconic nature-based tourism as objectives.

South West Regional Natural Resource Management Strategy 2012 – 2020: a plan for community-based natural resource management in the South West of Western Australia. In relation to Northcliffe Forest Park, it identifies Priority Actions and Sites, which includes Regional Ecological Linkages in the Terrestrial Biodiversity theme, the Gardner River in the Aquatic Biodiversity theme, and Aboriginal Heritage Sites in the Communities and Culture theme (SWCC 2012).

The Western Australian *Biodiversity Conservation Act 2016* and the *Biodiversity Conservation Regulations 2018* came into force on January 1 2019. The Act and Regulations replace the *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929* and their associated regulations. The new Act and regulations provides greater coverage

for biodiversity conservation matters that were not recognised in the *Wildlife Conservation Act 1950*, such as threatened ecological communities, threatening processes and critical habitats, and a significant increase in penalties for breaches (DBCA 2019c).

A Rural Fire Division has been created as part of bushfire management changes in the Department of Fire and Emergency Services. The Division will oversee bushfire mitigation and management in rural WA bringing greater coordination of resources and knowledge (DFES N.D).

Native title agreements have been reached for South West Boojarah # 2 Agreement area and the Wagyl Kaip Southern Noongar Agreement area (Commonwealth of Australia 2014a, 2014b). These await final settlement through the Western Australian Government, and relate to Northcliffe Forest Park as the Gardner River forms the boundary between the two agreement areas.

The Australia's South West Tourism Development Priorities 2010 – 2015 Strategy (Tourism Western Australia 2010) identifies among its priorities the extension of Munda Biddi Trail from Nannup via Northcliffe to Albany, and the development of ancillary services on the Bibbulmun Track and Munda Biddi Trail (Bibbulmun Track Foundation 2019).

Lotterywest Community Investment Framework 2018, looking to invest in priorities that include 'Protected Sustainable Ecosystems', with one of the outcomes being 'Western Australians are connected with, and care for, their natural heritage' (Lotterywest 2018).

New Knowledge

Improved understanding of the Forest Park's plants, ecological communities and animals through the activities of interested community members and the Department of Biodiversity, Conservation and Attractions staff (Eiby 2018; Northcliffe Forest Park Management Committee, J Smith pers. comm.).

Knowledge of climate change, its consequences and potential impacts, including a drying trend, increased temperatures, longer summer weather patterns and associated increased bushfire risk (Government of Western Australia 2012; DFES 2015).

Revised management plans for the nearby Shannon and D'Entrecasteaux National Parks, with updated background information and conservation management methodologies, including dieback disease hygiene and management improvements (DEC 2012).

Threatened plant and animal assessments have identified more to be at risk and in need of conservation support (DEC 2012).

Reviews of the very large Northcliffe (O'Sullivan) bushfire in early 2015 recognised the need for improved agency and incident control coordination, for forest fuels to be maintained as low as possible, and for effective early suppression of initial fire incidents (DFES 2015; Bates, McCaw and Dowdy 2018).

A bioregional approach to conserving Australia's biodiversity has been developed. In the south-west 'forest ecosystems' have been defined to further the establishment of a comprehensive, adequate and representative reserve system for the State (DEC 2012). Northcliffe Forest Park as a Shire-vested forest reserve contributes, although remains outside the State Government legislated reserve system.

Increased Use of Natural Areas

A significant increase in the use and desire for natural areas for recreation in the south-west has occurred since 1999 (DEC 2012).

The Bibbulmun Track and Munda Biddi Trail are significant attractions with strong awareness in the outdoor tourism market; the trails bring more users to the areas they traverse, including Northcliffe – a recognised Track Town (DSR 2017; Bibbulmun Track Foundation 2019).

Nature-based recreation popularity in the south-west is increasing pressure on existing facilities, and opportunities exist for better infrastructure as trails and sites to meet demand and protect the environment (DEC 2012)

Mountain biking is increasing in popularity in Australia, with the push for more trails in the south-west being strong. A recognised trail exists in Northcliffe Forest Park as part of the Munda Biddi Trail (WestCycle N.D.).

NOMENCLATURE

Shire of Manjimup: The Local Government Authority agency and elected Council of the Shire of Manjimup.

Manjimup Shire: The lands, towns and waters as the district of the Shire of Manjimup.

Southern Forests and Valleys Region: Bridgetown-Greenbushes, Manjimup and Nannup Shires, within the larger South West Region.

South West: The south-west corner of Western Australia. The South West Planning Region applied by the South West Development Commission and the Western Australian Planning Commission. The area south-west of a line from Yalgorup west of Harvey to Walpole, which follows the boundaries of Harvey, Collie, Boyup Brook and Manjimup Shires.

Noongar: The Noongar Aboriginal people of south-west Australia. Spelling used by the South West Boorah # 2 and Wagyl Kaip Southern Noongar Indigenous Land Use Agreements, which apply to the Northcliffe area.

Parks and Wildlife Service: The Parks and Wildlife Service within the Department of Biodiversity, Conservation and Attractions. Responsible for the Conservation and Land Management Act 1984 as amended, and the *Biodiversity Conservation Act 2016*, which with its regulations, came into force on January 1 2019.

ACKNOWLEDGEMENTS

Northcliffe Forest Park Management Committee members past and present for their guidance of this management plan and role as planning committee.

Shire of Manjimup Councillors and Staff involved in the guidance and development of the management plan. In particular, the Senior Officers Group for their useful comments on plan drafts and Jasmine Bamess for her valued assistance with mapping.

Department of Biodiversity, Conservation and Attractions, for their management plan model and assistance with the development of the plan, particularly section 24 Fire.

Community members consulted for their assistance and consideration on the content of the management plan.

Professor Steve Hopper for the provision of Figure 5 *South West Botanical Region*.

South West development Commission for the development and provision of Figure 1 *South West Planning Region of Western Australia, Manjimup Shire and Northcliffe Forest Park*.

Cr Cliff Winfield and Vicki Winfield of Manjimup for their support for the planning process in its early phase.

The former Lotteries Commission of WA and its Gordon Reid Foundation for the funding to develop the 1999 Northcliffe Forest Park Management Plan.

John Monaghan and Associates for the 1999 Northcliffe Forest Park Management Plan and the foundation and guidance that earlier plan provided.

The Late Dave Evans MLA, B.A., A.M. for the information about George Gardner OAM in the Dedication, which had been written for the farewell of George and Jessie Gardner from Northcliffe in 1994.

The Late George Gardner OAM, for his vision, passion and inspiration in understanding, conserving and interpreting Northcliffe's natural and cultural heritage, and the advancement of the Northcliffe community.

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Stakeholders consulted for their comments that helped improve the plan.

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PART A. INTRODUCTION

1 Overview

Northcliffe Forest Park is a 241.9517 ha forest and river reserve No 23740 vested in the Shire of Manjimup for Parkland and Recreation (Landgate 2018). It sits next to Northcliffe Townsite to the east of the railway reserve.

The Shire of Manjimup is responsible for the stewardship of Northcliffe Forest Park, in accordance with its vesting management order and Parkland and Recreation purpose, through the Northcliffe Forest Park Management Committee and its Terms of Reference as a Management Committee of the Shire of Manjimup (Shire of Manjimup 2015b).

Implementation of this management plan is part of the stewardship process by the Shire of Manjimup, which will require liaison with partnerships and related organisation and additional resources through grants and partnerships. A priority setting procedure with annual review is part of the implementation and assessment process.

Reserve 23470 was first proclaimed in 1953, vested in the Shire of Warren (Manjimup) for the Purpose of National Park. The vesting order was revised in 2001, with the Shire of Manjimup remaining as the vested authority, although the purpose was changed to Parkland and Recreation – in line with local authority vested natural reserves. In 2004, the Park's size reduced by 1.4 ha to the current 242 ha.

Long-time Northcliffe resident and former Shire of Manjimup Councillor, the late George Gardner OAM, saw the opportunity for Shire Reserve No. 23740 (then a Shire vested national park) to be realised as Northcliffe Forest Park. Mr Gardner envisioned benefit to the community, Noongar ancestors, visitors and the nature of the reserve through recognition as Northcliffe Forest Park, which was established in 1986 through the Northcliffe Forest Park Committee (Shire of Manjimup 1999).

Northcliffe Forest Park comprises Reserve 23740, it surrounds the small enclave Caravan Park Reserve 31453, which as an undeveloped reserve, is managed as part of the Forest Park. In addition, parts of State Forest No 40 vested in the Conservation and Parks Commission, adjoins the north west sector and is managed in synch with the Forest Park. The Gardner River flows along and just inside the eastern boundary, which has a now historic Water Authority Northcliffe Town Dam in its bed.

Northcliffe Forest Park is a mixture of forest loams, gravel loams, gritty depositional sand lenses and seasonally damp clay pans on the upper plain landform, and erosional and depositional soils in the river valley landform. Habitats are Karri (*Eucalyptus diversicolor*), Marri (*Corymbia calophylla*) and Jarrah (*E. marginata*) forests, Jarrah and Blackbutt (*E. patens*) woodlands, riverine Peppermint (*Agonis flexuosa*) and Wattie (*Taxandria juniperina*) woodlands, dampland shrublands, wetlands, and aquatic river communities. The habitats comprise and support a diverse range of plants, fungi and animals - and the ecological interactions between them, which together provide the Park's character, conservation and recreation values.

The Park's landforms, vegetation and habitats characterise the Southern Forests and Valleys Region, and within that the Shire of Manjimup and Northcliffe town and district. Northcliffe is synonymous and characterised by its place in the forest and nearness to the

spectacular wild lands of D'Entrecasteaux National Park and its coastline. Northcliffe Forest Park presents an immediate sense of the character.

A unique recreation opportunity is available as an adjoining asset to the town of Northcliffe. Recreation on immediate offer for community and visitors includes, access roads, tracks and trails, picnic sites, nature-placed solitude, nature study, wildflower and bird watching, forest sights, sounds and smells, river flow and water reflection, hiking, biking, riding and driving in nature, and by the visitor centre and gallery just within.

Northcliffe Forest Park contributes to the South West Region and Manjimup Shire, through its amenity, character and proximity for easy and quick access from Northcliffe. It complements the surrounding world-class national park system as an introductory example of similar natural wonders. Its reservation and stewardship difference adds diversity and value to the management approach to natural lands.

Visitation to the south-west is increasing and Northcliffe Forest Park and its facilities can help support the demand for natural experiences and benefit the Northcliffe community through the resultant economic activity.

Threats to the Park include dieback (*Phytophthora cinnamomi*) disease, feral animal impacts on sensitive native animals, bushfire impacts on values, vegetation alteration and hazard development from frequent fire, weed invasion, nutrient deposition in the river, visitor impacts and wear on facilities, and insufficient resources for management, facilities and infrastructure.

2 Regional Context

Northcliffe Forest Park is located immediately to the east of and adjoining Northcliffe townsite, in Manjimup Shire, which is in the South West Planning Region of Western Australia. The South West Region covers an area of approximately 24,000 ha, and is the most popular destination for visitors to WA outside Perth (Government of Western Australia 2012), (Figure 1).

Manjimup Shire covers an area of 7,028 square km, making it the largest Shire by area in the South West Planning Region. It has a population of 9,187 people, who live mostly in the four main towns of Manjimup, Pemberton, Northcliffe and Walpole. Northcliffe is the third smallest town in the Shire, with a district population of 770 people (Shire of Manjimup 2019a).

Manjimup Shire's attractions include national parks, rivers and estuaries, coastal landscapes, forests, picturesque towns and settlements, wineries, restaurants and festivals and events (Shire of Manjimup 2019a). The predominant industries of the Shire are agriculture (worth \$126.5m in 2011), timber, retail and tourism (WBAC 2016). Annual visitor numbers to the Shire, averaged over 2015/16/17, were 210,200 people from intrastate, interstate and international sources (Tourism WA 2018).

Manjimup Shire is in the South West Forests and Valleys Region, which is an initiative of the Warren Blackwood Alliance of Councils that the Shire of Manjimup shares with the adjoining Shires of Bridgetown-Greenbushes and Nannup as a response to the restructure of the timber industry in the region (WBAC 2016). Tourism is a major focus of

this regional initiative as cultural and economic responses to the restructure, hence the 'South West Forests and Valleys Region' brand, (Figure 2).

Two Native Title Agreement Areas converge near Northcliffe, the South West Boojarah # 2 and the Wagyl Kaip Southern Noongar Native Title Agreements (Commonwealth of Australia 2014a, 2014b). The convergence boundary is close to the eastern boundary of Northcliffe Forest Park with the Gardner River a possible natural boundary marker. The Land Use Agreements have yet to be formally finalised at the time of the preparation of this management plan.

SOUTH WEST PLANNING REGION



Figure 1. South West Planning Region of Western Australia, Manjimup Shire and Northcliffe Forest Park.

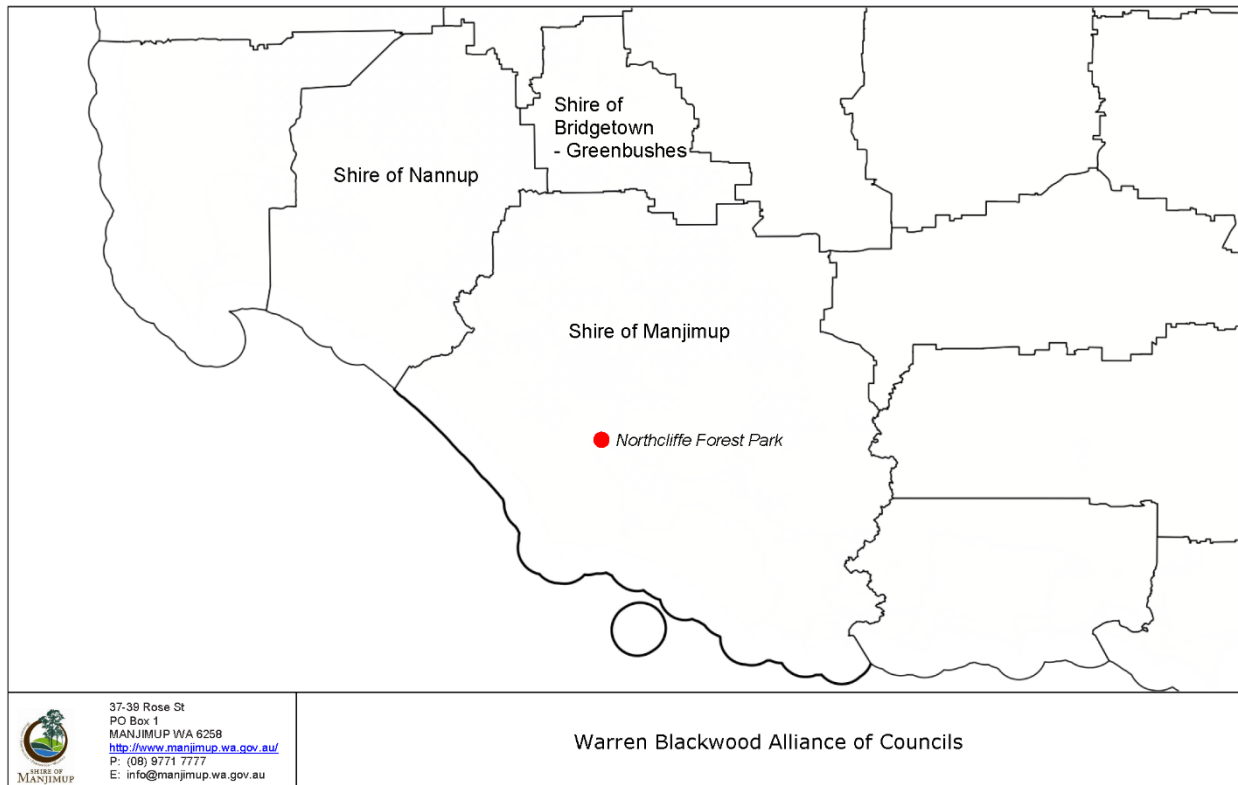


Figure 2. Warren Blackwood Alliance of Councils, South West Forests and Valleys Region

3 Plan Area

Northcliffe Forest Park consists of 241.9517 ha of natural forest and riverine lands; it is contained within the townsite boundary and alongside the eastern edge of the railway reserve running through Northcliffe town (Shire of Manjimup 1999; Landgate 2018a).

The Forest Park's eastern edge is formed by private property boundaries across the Gardner River, the northern edge meets private property, the north-western boundary is against State Forest No. 40 and the Northcliffe Recreation Grounds, and Boorara Rd forms the southern boundary.

Other reserves relate to Northcliffe Forest Park for management consideration as adjunct de-facto sections because they are 43 ha of contiguous bushland:

- Caravan Park Reserve 31453 (1.8 ha) vested in the Shire of Manjimup lies as an undeveloped enclave surrounded by Northcliffe Forest Park off Muirillup Rd.
- The Railway Reserve lies alongside the western boundary and includes a turnaround area that protrudes into Northcliffe Forest Park (1.8 ha).
- State Forest No. 40 (24 ha) sits as an adjunct Forest Reserve at the north-western corner;
- Undeveloped road reserves (12 ha) in and across the top of the northern section of the Park and State Forest No 40 adjoining; and,
- Undeveloped rail and road reserves (3.4 ha) from the Northcliffe Pioneer Museum south and parallel with Windy Harbour Rd to Boorara Rd.

Figure 3 shows Northcliffe Forest Park, and enclave and adjacent reserves.

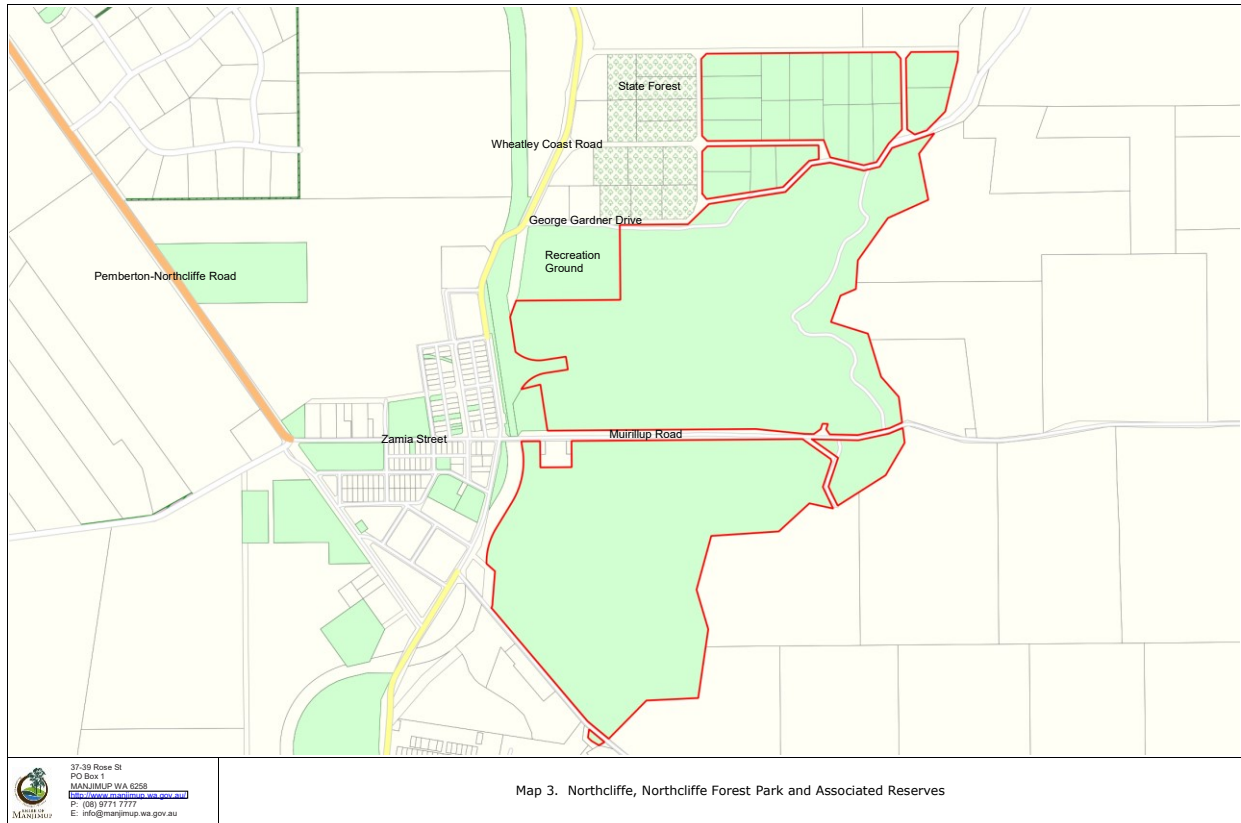


Figure 3. Northcliffe, Northcliffe Forest Park and surrounding lands.

4 History

The Murrum Noongar people occupied the Northcliffe area; their country is west of Wilsons Inlet to the Hardy Inlet and Blackwood River, and possibly beyond to the North (Crawford and Crawford 2003). Tindale records the area surrounding Northcliffe, from Denmark west to the Blackwood River and inland as far as where Manjimup now stands, as that of the Pibelmen People (Tindale 1974).

Evidence of Noongar occupation of the area is by archaeological sites within what is now Northcliffe Forest Park (G Gardner pers. comm.), and in the Dombakup Creek area to the west of Northcliffe (Crawford and Crawford 2003).

European people came to the Northcliffe area first as seafarers landing near what is now Point D'Entrecasteaux and exploring the immediate area, and later, from 1826 overland from the settlement at King Georges Sound. The first European settlers in the area took up land in the 1860's for pastoral use (Crawford and Crawford 2003).

In the early 1920's, the Western Australian Government chose the Northcliffe district as a 'group settlement' scheme area. The town of Northcliffe was proclaimed in 1924 and named in honour of the British press baron, Alfred Harmsworth, Lord Northcliffe, whose newspapers had promoted the group settlement scheme (Crawford and Crawford 2003).

Northcliffe Forest Park, C Class Reserve No. 23740 was created in 1953 for the Purpose of National Park; it was first listed as vested in the Shire of Manjimup in 1970 (Landgate 2018). Since, it has increased and later decreased in size to its current 241.9517 ha, and its Purpose has changed from 'National Park' to its current purpose of 'Parkland and Recreation' (Landgate 2018). This change in purpose was apparently to align it more appropriately with its vesting as a Shire Reserve, and separate it from the Western Australian State conservation (CALM Act 1984) A Class reserve system, which includes national parks vested under the then National Parks and Nature Conservation Authority (now Conservation and Parks Commission).

The formally named Northcliffe Forest Park was established in 1986 largely as a result of the work of community leaders the late Mr. George Gardner OAM, Mr Archie Jackson and the Northcliffe Forest Park Management Committee. The original management committee consisted of a number of prominent townspeople and Shire Councillors. Developments within the Park were originally carried out under Mr. Gardner's supervision and included drive and walk trails, and three picnic/barbeque areas, with maintenance of facilities carried out on a voluntary basis by interested members of the community (Shire of Manjimup 1999; CALM 2003).

5 Principle Values

Conservation values: Landscape and landform values as underlying geology, aspects, drainages and soils. Karri and Jarrah forest, streamside woodland, drainage stream and wetland ecological communities. Associated terrestrial and aquatic habitats, which shelter a rich flora and bird, mammal, amphibian, reptile, fish and invertebrate fauna.

Character values: Prime representative example of the Southern Forests and Valleys Region signature natural landscape. Strongly characterises, identifies and attaches to

Northcliffe town and community and Manjimup Shire. Celebrates the passion and work of community conservation leaders George Gardner OAM and Archie Jackson.

Cultural values: Historic Noongar Aboriginal places of importance as boundaries, food and material resources, location and group identity attachment, totems and spirits, and archaeological sites. European places as recreation and historic provisioning for timber and water, attachment to forest and stream nature and places, historic sites as town dam and railway infrastructure.

Recreation values: Immediate forest and river experiences, subtle and seasonal natural experiences of landforms and ecological communities, flora and fauna encounter experiences, picnic sites, roads, walk trails, bicycle trails, horse trails, Bibbulmun Track and Munda Bididi Trail, Community Resource and Visitor Centre, interpretive information. Marroning in season. Cultural experiences of the Northcliffe Pioneer Museum, railway line/formation and 'The Understory' park.

Economic values: Proximity to Northcliffe town as a nature-based recreation experience, Bibbulmun Track and Munda Bididi Trail as a conduit for visitors staying in Northcliffe. The Community Resource and Visitor Centre as an information and gallery sales outlet within the Forest Park and adjacent to Northcliffe.

Education values: A range of forest and river experiences, proximity to townsite and access via a range of roads, tracks and trails. Cultural education value from Noongar and European history as a range of sites, stories and spiritual dimensions.

6 Community and Stakeholder Participation

This management plan has been developed with input and/or consultation with the Northcliffe community and other stakeholders and interested parties as follows:

- Northcliffe Forest Park Management Committee (NFPMC).
- Consultation with stakeholders identified by the NFPMC: Shire of Manjimup Councillors and Staff, Department of Biodiversity Conservation and Attractions – Parks and Wildlife Service, WA Water Authority, Department of Fire and Emergency Services – Rural Fire Division, Department of Primary Industry and Regional Development, South West Development Commission, Department of Planning, Lands and Heritage, South West Aboriginal Land and Sea Council, Forest Products Commission.
- Munda Bididi Trail and Bibbulmun Track Foundations
- Northcliffe Recreation Association
- Interested individuals from the Northcliffe district of the Shire of Manjimup.

PART B. MANAGEMENT DIRECTIONS AND PURPOSE

7 Vision

The natural and cultural values of Northcliffe Forest Park will be in better condition in 2029 than they are at present, due to a better understanding of the threats and impacts upon the values and an improvement in conservation ambition and management techniques, as measured by the implementation and review of this management plan.

The park will provide outstanding experiences for community and visitors that are compatible with nature conservation and heritage values. Noongar cultural heritage will be cared for and activated as deemed appropriate by traditional owners, and the local community will be involved in protection and management.

Northcliffe Forest Park will be recognised as an outstanding Southern Forest and Valley natural experience, and a valuable regional conservation and tourism asset that is part of Northcliffe's identity.

Further, as envisioned by George Gardner OAM: Northcliffe Forest Park will be valued, enjoyed and protected by the community, for the enjoyment and wonder of generations to come and for the legacy of generations gone, and shared with visitors as the treasured natural character of Northcliffe.

8 Aim and Objectives

The Aim of this 2019 Northcliffe Forest Park Management Plan is to provide the context, platform, and guidance as management objectives and actions to sustain and share the Park's values in realising the Vision.

The management plan provides the Northcliffe Forest Park Management Committee, through the Shire of Manjimup as the responsible vesting and management authority, with an instrument by which to achieve its governance goals and apply and attract resources to sustain the Park and its values. This is in accordance with its Northcliffe Forest Park Management Committee Terms of Reference, Strategic Community Plan 2019 – 2029 and Corporate Business Plan 2019 – 2023 (Shire of Manjimup 2015b, 2019a, 2019b),

Objectives for the plan are provided for each of the Parts B to H, as statements of desired and expected achievement. Further, recommended Management Actions are provided as the guidance and methods by which the Objectives will be met.

9 Policy Framework

A range of legislation, policies and strategies of Local, State and Commonwealth Government origin guide the protection and management of Northcliffe Forest Park.

The Shire of Manjimup is responsible for the protection and management of Northcliffe Forest Park with the community through the Northcliffe Forest Park Management Committee (NFPMC) (Shire of Manjimup 2015b). The Shire manages a range of infrastructure and programs for the community, including reserves such as Northcliffe Forest Park.

Northcliffe Forest Park, Reserve 23470, is vested in the Shire of Manjimup for the Purpose of Parkland and Recreation (Landgate 2018).

'Parkland' is defined as land that has been reserved for the purpose of formal or informal sport or recreation and/or preservation of natural environments such as bushland, wetlands, river and coastal foreshore systems (DSR 2014).

Active 'recreation' is defined as activities engaged in for the purpose of relaxation, health and wellbeing or enjoyment with the primary activity requiring physical exertion, and the primary focus on human activity (Shire of Manjimup 2014).

In the case of the 2001 purpose adjustment for Reserve 23470 (Northcliffe Forest Park) from 'National Park' to 'Parkland and Recreation' – enacted to maintain local authority vesting alignment, 'recreation' should be human activities for health, relaxation, wellbeing or enjoyment compatible with natural and cultural heritage values. This definition of recreation aligns with community aspirations for natural environments in the Shire of Manjimup, and is consistent national parks and conservation parks under the CALM Act.

The Northcliffe Forest Park Management Committee Terms of Reference provides for a Management Committee of Council consisting of ten members, including Ward Councillor, Manager Parks and Gardens, Community organisation and individual representatives and a representative of the Department of Parks and Wildlife. The committee meets quarterly, reports to Council and has delegated powers that provide its functions (Shire of Manjimup 2015b):

1. To allocate funds approved by Council for Northcliffe Forest Park and in conjunction with the relevant manager.
2. To maintain and develop Northcliffe Forest Park in accordance with the Council endorsed Northcliffe Forest Park Management Plan.
3. To provide comment on the Shire of Manjimup's forward fuel reduction plan for the Northcliffe Forest park and to communicate with the agency in carrying out any fuel reduction actions in order to minimise any conflict with park use.

The Shire of Manjimup Community Strategic Plan 2019 – 2029 (Shire of Manjimup 2019a) and related Corporate Business Plan 2019 – 2023 (Shire of Manjimup 2019b) are principle guiding instruments, as they convey the community's aspirations arrived at through a rigorous process, relate to the range of relevant legislation, policies and strategies, and project the governance processes of the Shire of Manjimup as the responsible agency.

Table 1. Legislation, policies, strategies that relate to Northcliffe Forest Park (NFP) and agencies responsible.

Legislation, policy, strategy	Relationship with NFP	Agency responsible
Northcliffe Forest Park Management Committee Terms of Reference	Management Committee of the Shire of Manjimup, guides the management of the Forest Park through delegated powers. Reviewed biannually.	Shire of Manjimup
Community Strategic Plan 2019-2029	Identifies community aspirations, with protection of natural environment a priority	Shire of Manjimup
Corporate Business Plan 2019 - 2023	Identifies review of 1999 Northcliffe Forest Park Management Plan	Shire of Manjimup
Natural Environment Strategy (2008 update)	Aims and objectives to ensure the natural environment of the Shire is valued and protected from threats.	Shire of Manjimup
Shire of Manjimup Fuel Hazard reduction Notice.	Outlines requirements for fire hazard management on private lands. Provides desired fuel reduction targets for forest types, which relates to some in NFP.	Shire of Manjimup
Bushfire Risk Management Plan	Shire-wide coverage. Documents the approach toward identification, assessment and treatment of assets exposed to bushfire risk, assets include Northcliffe and Northcliffe Forest Park.	Shire of Manjimup
Fuel Hazard Reduction Plan	Applies to the Northcliffe area, including Northcliffe Forest Park. Aligns with the Bushfire Risk Management Plan.	Shire of Manjimup
Risk Management Policy	Provides Shire's approach to the management of risk. Relates to visitor use and fire risk in NFP.	Shire of Manjimup
Emergency Management Arrangements	Provides Shire's approach to emergency management. Guidance for emergency management in NFP.	Shire of Manjimup

Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>	Threatened plants and animals found in NFP listed under the Act.	Commonwealth Department of Environment
International agreements Convention on Biological Diversity 1992 Australia ICOMOS Burra Charter 1999	Protects biological diversity and ecological processes. Conservation of places of cultural significance. Adopted standard for heritage conservation practice.	Commonwealth Department of Environment Shire of Manjimup
<i>Biodiversity Conservation Act 2016</i>	Native plants, animals and ecological communities of NFP protected	Department of Biodiversity, Conservation and Attractions
<i>CALM Act 1984</i>	Relates to State Forest No 40 adjoining	Department of Biodiversity, Conservation and Attractions
<i>Fish Resources Management Act 1994</i>	Fish and aquatic crustaceans of Gardner River protected and managed.	Department of primary Industry and regional Development
<i>Public Transport Authority Act 2003</i>	Rail Reserve, principally the turnaround, vested under this Act	Public Transport Authority
State Planning Policy 2.9 Water Resources 2006	Gardner River and tributaries.	Department of Water and Environment Regulation
<i>Aboriginal Heritage Act 1972</i>	Aboriginal heritage (archaeological) sites in NFP.	Department of Planning, Lands and Heritage.
South West Regional Natural Resource Management Strategy 2012 – 2020	Priority Actions and Sites: Ecological Linkages program, Gardner River, Aboriginal Heritage Sites.	South West Catchments Council; Warren Catchment Council
South West Regional Blueprint 2014	Sustaining environmental qualities and tourism Blueprint priorities, objectives include biodiversity and	Shire of Manjimup, NFPMC, SWDC

	improve iconic nature-based attractions. NFP contributes to these.	
WA Government Strategy for Tourism 2020	Contributes to the prescribed brand: Experience Extraordinary Western Australia, and as a natural attraction (in Northcliffe) to support Regional Travel strategic pillar	Tourism WA, Shire of Manjimup
Australia's South West Tourism Development Priorities 2010 - 2015	Munda Biddi Trail and Bibbulmun Track pass through NFP, and provide a focus for Northcliffe as a hub.	Munda Biddi Trail and Bibbulmun Track foundations, NFPMC
Tourism WA two-year action plan 2018 and 2019	NFP contributes as a nature based regional experience, by its trails, and being adjacent to Northcliffe town for service support.	Tourism WA, SWDC, NFPMC
Warren Blackwood Alliance of Councils Strategic Plan 2016 - 2019	NFP contributes as a forest and river valley parkland and recreation reserve visitor and community asset.	Shire of Manjimup, NFPMC
South West Mountain Bicycle Master Plan (No date. 2015?)	NFP and Munda Biddi Trail included in plan as existing trails, and Karri Cup as an event.	Shire of Manjimup, NFPMC
WA Strategic Trails Blueprint 2017 - 2021	Bibbulmun Track and Munda Biddi Trail included as existing trails.	Shire of Manjimup, NFPMC
Lotterywest Community Investment Framework 2018	NFP meets funding priorities: Active Healthy People, Protected Sustainable Ecosystems, Inclusive Thriving Community, and Connected Cultural Experiences.	NFPMC, Shire of Manjimup, Lotterywest partnership

It should be noted that the Forest Management Plan derived from the Regional Forest Agreement process (Conservation Commission of WA 2013), does not apply to Reserve 23470 (Northcliffe Forest Park) due to the Park's local authority vesting.

The Forest Management Plan was developed to protect conservation, heritage, social and economic values and sustain productive capacity on lands vested in the Conservation and Parks Commission that are subject to disturbance from primarily timber extraction (Conservation Commission of WA 2013). State Forest No. 40, adjoining Northcliffe Forest Park, is subject to the Forest Management Plan as it is vested in the Conservation and Parks Commission and available for timber extraction.

The relative independence of Reserve 23470 (Northcliffe Forest Park) due to its local authority vesting, places it in a unique situation as a forest reserve outside the otherwise common and surrounding State parks and reserves system. This presents the opportunity

for management styles and techniques to differ from those typically applied to State reserves, and which the community expresses a desire to see applied and monitored to assess performance.

<p>Objectives</p> <p>Manage Northcliffe Forest Park Reserve 23740, vested in the Shire of Manjimup for the Purpose of ‘Parkland and Recreation’, in accordance with its purpose and the policies and strategies of the Shire of Manjimup and relevant State and Commonwealth Legislation.</p> <p>Manage Northcliffe Forest Park as a contributing and benefiting natural asset in accord with relevant regional strategies.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. The Northcliffe Forest Park managed by the Shire of Manjimup, through the Northcliffe Forest Park Management Committee consisting of a representative each from the Shire of Manjimup Council; Department of Biodiversity, Conservation and Attractions; Northcliffe Community Resource and Visitor Centre; Northcliffe Volunteer Bushfire Brigade; Northcliffe Environment Centre; Shire of Manjimup Parks and Gardens Manager and four local residents. 2. The Northcliffe Forest Park Management Committee is a Committee of Council of the Shire of Manjimup, responsible to Council and subject to its Terms of Reference. 3. The Northcliffe Forest Park Management Committee meets quarterly in line with its Terms of Reference and its delegated powers, to steward the management of the Northcliffe Forest Park through the implementation and oversight of this management plan. 4. Amendments to this management plan for unforeseen issues or opportunities that arise, must: align with the plan Vision; be considered and agreed by the Northcliffe Forest Park Management Committee, be subject to public consultation with the Northcliffe community and broader stakeholders as affected; and approved by the Shire of Manjimup Council. 5. The term of this management plan is for ten years; coming into operation on the date it is adopted by the Shire of Manjimup Council. However, it will remain as the adopted plan until it is replaced by a new plan. It may be amended at any time in line with 4 above. 6. Align and promote Northcliffe Forest Park as an exemplar of the Southern Forests and River Valleys brand.

10 Review of Previous Management Plan

1999 Management Plan Background

The 1999 Northcliffe Forest Park Management Plan (Shire of Manjimup 1999) provided an aim and objectives, background information, management objectives and recommendations to support the long-term sustainability of the Park’s nature and the enjoyment of the community. The plan formalised the efforts of the late Mr. George

Gardner OAM and the Northcliffe Forest Park Community Committee, and was formally accepted and adopted by the Shire of Manjimup (Shire of Manjimup 1999).

The 1999 Management Plan was a study to glean background information and understand Northcliffe Forest Park use patterns and the wishes of the community, and the provision of an Aim, Study Objectives, a Management Objective and a set of Recommendations by which to implement the plan.

The Aim of the 1999 Northcliffe Forest Park Management Plan study:

To produce a management document for Council and the community for the ongoing use, and development of the Park which protects the environmental values, reflects the community aspirations and is supported by the community.

The Objectives of the 1999 Northcliffe Forest Park Management Plan study:

Given the unique nature of this Park and the community that use and support it, the following objectives for the study have been derived:

- 1. Document the known information on the physical and biological environment along with cultural, heritage and aesthetic values of the Park*
- 2. Consult with user groups and the wider community to determine community attitudes and aspirations*
- 3. Undertake a visitor survey of the Park to determine the characteristics of the users and their perceptions.*
- 4. Identify management and other strategies, which will guide the day-to-day function and maintenance of the Park, and the long term aims and objectives for the development and use of the Park.*
- 5. Identify immediate resources available for implementation of the Plan and possible additional resources, which may be accessed.*
- 6. Prepare a sequential and prioritised list of actions associated with the strategies to aid in achieving the aims and objectives of the Plan.*
- 7. Prepare a sequential and prioritised list of actions associated with the strategies to aid in achieving the aims and objectives of the Plan.*

Section 8 of the 1999 Management Plan proposed that the Park is managed for the Objective:

The maintenance, improvement and appreciation of the natural qualities (landscape, flora and fauna) of the Northcliffe Forest Park, whilst allowing for continued visitor and local use and allowing for recreational opportunities of the type currently occurring.

This objective is in line with the then 'National Park' Purpose of the Northcliffe Forest Park Reserve No 23740 (Shire of Manjimup 1999; Landgate 2018) and the wishes of the Shire of Manjimup community. It remains in accordance with the current purpose of 'Parkland and Recreation'.

Review Process and New Management Plan

The Shire of Manjimup Corporate Business Plan 2017-2021 identifies the need to review the 1999 Northcliffe Forest Park Management Plan (Shire of Manjimup 2017b).

This new 2019 Northcliffe Forest Park Management Plan reviews the earlier 1999 plan's aims, objectives, management considerations, recommendations and priorities. It

considers their implementation and relevance status in developing new vision, values, management directions and actions.

The Objectives and Management Actions in this new management plan are consistent with the Objectives and Management Recommendations of the 1999 management plan, as reviewed and endorsed by the Northcliffe Forest Park Management Committee, and supported by the broader community as consulted.

This 2019 management plan has a revised structure to aid clarity and theme logic, in line with the contemporary and well-tested approach to developing and presenting conservation reserve management plans by the Department of Biodiversity, Conservation and Attractions for the Conservation and Parks Commission of WA. The Shannon and D'Entrecasteaux National Parks Management Plan (DEC 2012) is an example of the contemporary approach, which as a plan for nearby national parks, serves as an exemplary guide.

For this 2019 Northcliffe Forest Park Management Plan, the 1999 management objective is reviewed and included within the 2019 plan's vision. Objectives and supporting management actions are provided for each management theme, consistent with contemporary conservation and recreation reserve management plan format, to guide the sustainability of the values of the Northcliffe Forest Park.

The review process included an assessment of the implementation of the 1999 plan. This assessed the actions taken to meet its stated aim, objectives, strategies and actions, as having been implemented, commenced, not commenced and still relevant and retained and/or adjusted in this new plan. The review informed the design of the objectives and actions of the new plan.

The implementation review found that some initiatives and actions undertaken were not included as recommended actions in the 1999 plan. Notwithstanding, the 2019 management plan recognises that amendments for unforeseen circumstances or initiatives, in line with plan vision and objectives, may be necessary, and includes a management action to support such amendment (section 9 *Policy Framework*).

Objective:

Review the 1999 Northcliffe Forest Park Management Plan and its implementation, to inform the development of a new management plan to guide the conservation of the values of Northcliffe Forest Park and its compatible and sustainable use by the community and visitors.

Management Action

Prepare this new management plan with a vision, objectives and management actions to guide the conservation of the values of Northcliffe Forest Park and its compatible and sustainable use by the community and visitors.

11 Performance Assessment

The Northcliffe Forest Park Management Committee, with the Shire of Manjimup as the responsible agency, will guide the implementation of this management plan and assess its performance. Assessment of performance will be reported to the Shire of Manjimup CEO and Council.

The Northcliffe Forest Park Management Committee will measure the success of this management plan by assessing performance against management objectives through the implementation of management actions.

Part H Implementing, Monitoring and Research, section 41 Administration, Implementation and Priorities, is related to Performance Assessment. It provides specific objectives and management actions to guide implementation of the plan, and outlines management administration, priorities and resourcing. An adjunct annual priority setting and review process will assist with implementation and performance assessment.

Objectives Assess the success of the 2019 Northcliffe Forest Park Management Plan
Management Actions <ol style="list-style-type: none">1. Assess the implementation of management actions in meeting the vision, aim and management objectives each year.2. The Northcliffe Forest Park Management Committee to report implementation results to Shire of Manjimup CEO and Council each year.3. The Northcliffe Forest Park Management Committee to review implementation success and priorities each year, to guide the following year's budget, works and grant application programme.

PART C. THE NATURAL ENVIRONMENT

The natural environment of the Northcliffe Forest Park is the foundation of its appeal and value, the conservation of the natural environment of the Forest Park is therefore a central theme of this management plan, established by the ‘parkland’ category of the reserve’s purpose.

Shire of Manjimup is committed to maintaining the natural values that the Shire is famous for, including the ecosystems represented in the Northcliffe Forest Park (Shire of Manjimup 2008a, 2017a).

The ecological communities in Northcliffe Forest Park comprise a relatively complex mix of forest, woodland, shrubland, sedgeland, wetland, riparian and riverine aquatic communities.

The Forest Park’s dominant and characterising ecological communities are the Karri (*Eucalyptus diversicolor*) forest, Jarrah (*E. marginata*) Marri (*Corymbia calophylla*) forest, and the Gardner River riparian Peppermint (*Agonis flexuosa*) woodland and riverine aquatic communities.

12 Biogeography

The Interim Biogeographic Regionalisation for Australia (IBRA) (Thackway and Cresswell 1995) provides for bioregional planning and within that a framework for selecting a Comprehensive Adequate and Representative (CAR) system of protected areas (DEC 2012). While the CAR system of protected areas generally relates to the State conservation reserve system, there is a role for local authority and private conservation reserves to contribute.

Creation of a conservation reserve system that is comprehensive, adequate and representative helps meet obligations under the International Convention on Biological Diversity and Australia’s Strategy for the National Reserve System 2009–2030 (National Reserve System Task Group 2009; DEC 2012).

The IBRA divides Australia into 85 separate bioregions and 384 subregions, based on lithology, geology, landform, and vegetation. Twenty-six IBRAs are represented in Western Australia; Northcliffe Forest Park is within the Warren Bioregion (DEC 2012), (Map 4).

Objective
That Northcliffe Forest Park contributes to and is known to contribute to the national conservation reservation system.
Management Actions
1. The Northcliffe Forest Park Management Committee to seek funding and/or resources that will enable the mapping of the forest types of Northcliffe Forest Park and assess their contribution to CAR forest ecosystem category (Conservation Commission of WA 2013) reservation.

2. The Northcliffe Forest Park Management Committee to provide interpretation of the role the Northcliffe Forest Park plays in the formal reserve system as a contribution to the CAR reservation system.

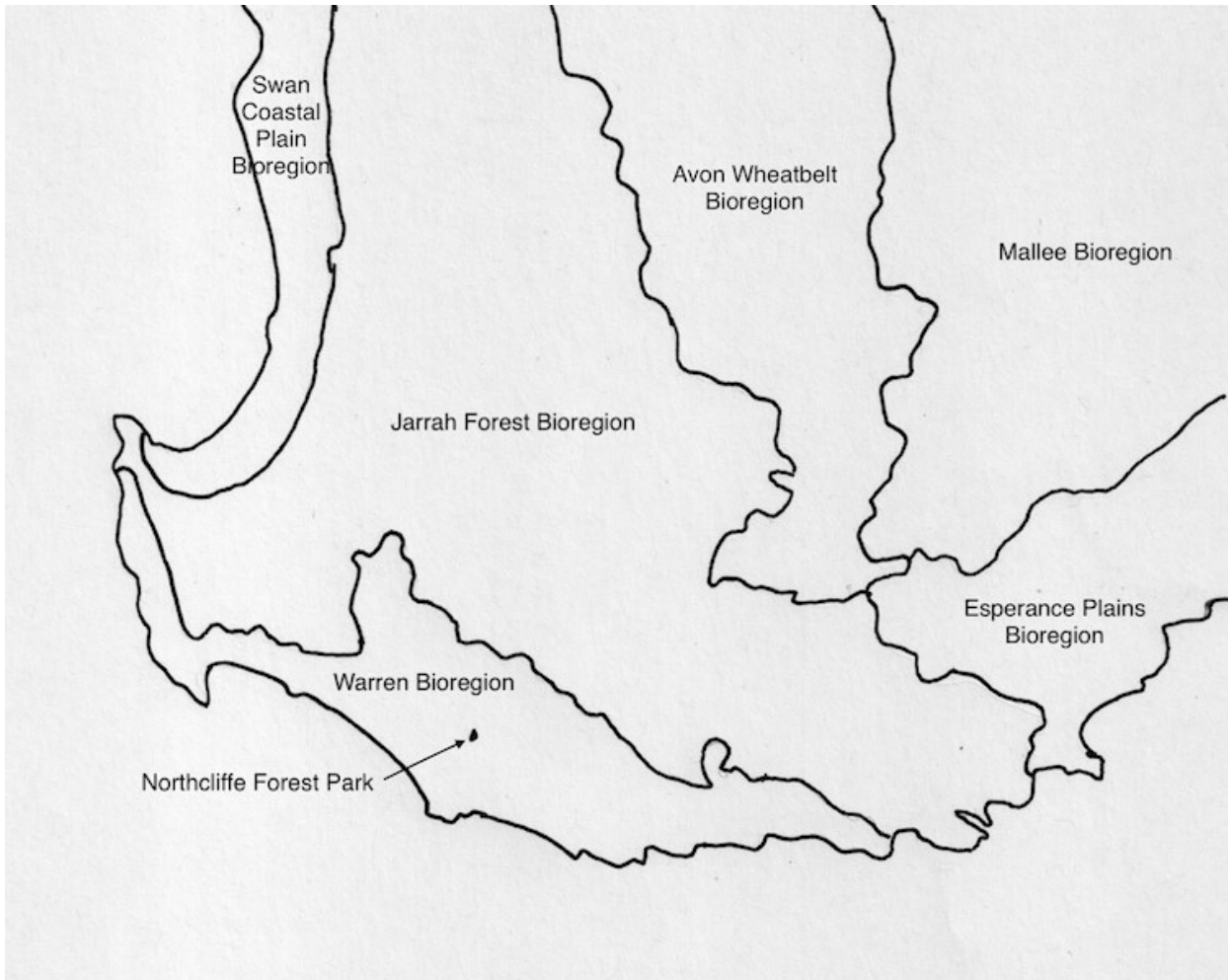


Figure 4. Bioregions of the south-west of Western Australia

13 Climate Change

Climate change is a significant issue the environment, society and economy of southwest Australia. The Shannon and D'Entrecasteaux National Parks Management Plan (DEC 2012) provides a sound locally relevant perspective and approach to dealing with this, and the majority of this section is derived from that plan.

Projections for the southwest of WA are for continued warming (increased mean annual temperature) and reduced rainfall (IPCC 2001a; DEC 2012).

The Indian Ocean Climate Initiative projects a rise in temperature in all seasons in the southwest by 2030, as well as more declines in winter rainfall. Catchments can expect further reductions in runoff, and there are indications that weather events may be more

extreme, with more frequent and prolonged droughts. Changes in ground moisture, temperature and vegetation may also lead to more vigorous fire behaviour in traditionally cooler months and therefore more restricted burning seasons, which is likely to have implications for managing fire in natural landscapes. Sea levels are also expected to rise, potentially by 9-88 cm by 2100 (IOCI 2002; DEC 2012).

The potential impacts of climate change on biodiversity are uncertain and poorly understood, although the southwest of WA is considered to be at considerable risk of significant biodiversity loss (IPCC 2001b; DEC 2012).

Implications of the warming and drying for Northcliffe Forest Park are potential impacts on the habitats, ecology and biology of plants and animals. Particularly: in physiology, breeding timing, and distribution and abundance, disease, water quality, disturbance frequency and severity, habitat fragmentation and loss, and wetland alteration (DEC 2012).

In 2102 and 2015, wildfire ignited by lightning strikes some 30 km east of Northcliffe posed a degree of threat to Northcliffe townsite and the Forest Park as they spread westwards in difficult conditions. The drying trend, together with increasing instability in the climate of the south-west, is leading to an increase in lightning ignition in the Warren Region with implications for fire management and conservation (Bates, McCaw and Dowdy 2018).

Management actions that help improve the resilience of species and ecosystems and hence decrease their vulnerability to climate change are required (DEC 2012).

Objective

Understand the vulnerability of the Northcliffe Forest Park habitats and biota and the effects of climate change on them, particularly disturbance responses, such that effective responses to their conservation can be developed and shared.

Management Actions

1. Liaise with Department of Biodiversity Conservation and Attractions regarding the management of the natural lands adjoining Northcliffe Forest Park, particularly State Forest No. 40, as part of a broader protective matrix.
2. Where possible, protect ground blanketing and moisture saving litter blanket, while managing fuel levels throughout the Park to current bushfire mitigation standards.
3. The Northcliffe Forest Park Management Committee to guide control of introduced animals and weeds, limit ground disturbance on track edges to inhibit weed invasion.
4. The Northcliffe Forest Park Management Committee to guide monitoring of the litter blanket for moisture protection, hazard development and stability.
5. The Northcliffe Forest Park Management Committee to consider and seek funding to establish a system of monitoring terrestrial and aquatic sites to ensure changes to ecosystem composition and structure is quickly detected, enabling remedial strategies to be developed and implemented rapidly.
6. The Northcliffe Forest Park Management Committee to advocate for the partnering with State agencies and research institutions to develop and support monitoring for the improved understanding of ecological resilience, and share information on

monitoring results and mitigation methods as they are found. Seek grants to resource monitoring capability.

7. Consider the use of Northcliffe Forest Park as a living laboratory to design and test climate change monitoring and mitigation methods, including the use of low disturbance hazard reduction methods.

14 Geology, Landforms and Soils

Northcliffe Forest Park lies with and near the western edge of the Proterozoic Albany – Fraser Orogen. The Albany - Fraser Orogen extends eastwards from near Point D'Entrecasteaux to Esperance and then north to the Fraser Range, forming notable features such as Mt Chudalup, Porongurup Range, Mt's Clarence Melville and Adelaide at Albany, Mt Manypeaks, and Recherche Archipelago and Mt Le Grande near Esperance.

The Orogen is part of an old mountain belt that formed when the Western Australian Craton collided with the Mawson Craton between 1345 and 1140 million years ago. The Orogen includes the Nornalup Complex, which comprises main rock types of granite and gneiss, intruded by dolerite dykes (Copp 2001; DEC 2012))

Northcliffe and the Forest Park are underlain by the major physiographic land unit of the Ravensthorpe Ramp, with a dissected laterite morphological belt or plateau lying over this unit. The surface landforms and soils of the belt have been formed by deeply weathered rocks, laterisation processes and erosional modification (DEC 2012).

The landform of Northcliffe Forest Park consists of the western side of the Gardner River valley and the plateau above to the west. A gradient of some 60 metres occurs from the lowest point in the river valley to the highest point in the northern section of the Park. The valley side is relatively steep closer to the river, with the slope grading to gentle undulations on the plateau to the west towards Wheatley Coast Rd. Parts of the plateau are quite flat, which is where the wetlands lie, incised small valleys are formed by the small creeks that flow east across the plateau to join the Gardner River (Shire of Manjimup 1999).

Objective

Consider the geology, landforms and soils and their differences as the underlying structures, which influence the vegetation and their dynamics, as a basis for the conservation and interpretation of Northcliffe Forest Park.

Management Actions

1. The Northcliffe Forest Park Management Committee to consider and seek funding to map the landforms and soil types.
2. Consider the fragility and resilience of landforms and soil types in designing and placing visitor and access infrastructure.
3. Protect vulnerable landforms, particularly granite sheets, wetlands and drainages from damage by access, fire management activities and facility development.
4. The Northcliffe Forest Park Management Committee to develop and provide information about the geology, landforms and soils for interpretation materials.

15 Associated Reserves

State Forest No 40, sections of the Pemberton to Northcliffe Rail Corridor and an undeveloped Shire of Manjimup vested Caravan Park Reserve 31453 lie adjacent to and within Northcliffe Forest Park - Reserve 23740 (Figure 3).

The protection and use of these Reserves is consistent with Northcliffe Forest Park use. However, the vesting authorities and agencies responsible for management of the Railway Reserve and State Forest No. 40 are State government agencies, with which negotiation will be required for management and use alignment.

The Caravan Park Reserve 31453 is small, at approximately 1.8 hectares (Figure 3), and as a commercial caravan park exists in Northcliffe townsite, it is unlikely that a requirement for an additional Shire managed caravan park is warranted or considered appropriate. No priorities or plans for the development of this Caravan Park Reserve have been identified in Shire of Manjimup strategies (Shire of Manjimup 2017a).

The Northcliffe and visiting community considers and uses these Reserves as part of or closely associated with Northcliffe Forest Park.

The 1999 Northcliffe Forest Park Management Plan recommended the formal inclusion of State Forest No 40 and the Railway Reserve into Northcliffe Forest Park. However, such a formalisation is unlikely to be acceptable to the State government. As such, alternative voluntary management agreements are likely to be favoured and more appropriate to align protection, management and use with the Forest Park.

Objective

Align the management and public use of adjacent and enclave reserves with the Northcliffe Forest Park, where appropriate and possible.

Management Actions

1. Liaise with the Department of Biodiversity, Conservation and Attractions, and the Public Transport Authority regarding the alignment of management to include State Forest No 40 and the Railway reserve adjacent to Northcliffe Forest Park.
2. Negotiate a Memorandum of Understanding with Department of Biodiversity, Conservation and Attractions, to manage the parts of State Forest No 40 adjacent to Northcliffe Forest Park consistent with the management of the Northcliffe Forest Park.
3. Negotiate a Memorandum of Understanding with the Public Transport Authority, to manage the Rail Reserve adjacent to Northcliffe Forest Park consistent with the management of the Northcliffe Forest Park.
4. Represent different tenures in information and maps as appropriate.

16 Hydrology, Catchment and Water Quality

Northcliffe Forest Park sits in the Gardner River catchment, with the Gardner River flowing southwards along the eastern boundary of the Park. The main drainage feature through the main Park is Bardi Creek, which starts as two upper tributaries - near the Northcliffe Pioneer Museum and just to the south of the recreation ground – that join behind the

council yard on Muirillup Rd and flow southeast to the Gardner River. Another smaller, unnamed creek flows through the southern section of the Park parallel with Boorara Rd, also to the Gardner River (Shire of Manjimup 1999).

Small swampy wetlands lie on the edge of the plateau to the north west of the western upper tributary of Bardi Creek, and to the north of the Visitor Centre near the end of the Railway Turnaround spur (Shire of Manjimup 1999).

The Gardner River has a catchment of 530 square km, of which 16% is cleared for agriculture. The mean annual flow in 1995 was determined to be 160,000 ML, with typical salinity at 140 mg/l TSS, Turbidity 2 NTU, and Colour 320 Hazen (Shire of Manjimup 1999).

In 1995 nutrient levels of the Gardner River were found to be relatively high, with sampling by the Ribbons of Blue program measuring total N at 0.2 – 12 mg/l, and total P 0.10 and 0.80 mg/l with occasional peaks to 12 mg/l. The Water and Rivers Commission data for the nearby Baldania Creek confluence with the Gardner River found total N 0.906 mg/l and total P 0.068 mg/l. These levels were considered to be high, and likely a result of agricultural runoff upstream and east of Northcliffe Forest Park (Shire of Manjimup 1999).

The water body behind the Northcliffe Town Dam is affected by algae and weed infestation, both an indicator of increased nutrients in the water and sediments. These issues require resolution, although solutions will require nutrient input to be resolved upstream outside Northcliffe Forest Park.

The Gardner River has a historic water supply weir (Northcliffe Town Dam) in the section above Muirillup Rd, which was used as the town water supply up until the 1960's (K McKeough Dept. Water and Environmental Regulation pers. comm.). However, due to the dark colour of water caused by tannins, its use was discontinued as a potable water supply (Shire of Manjimup 1999). The town dam infrastructure is of historic cultural interest to the Northcliffe Community and visitors, as such will require ongoing management and maintenance for safe access and interpretation.

In the lead up to the development of this plan, some consideration was given to a potential upgrade of the Town Dam water body for enhanced recreation, this concept would require careful consideration and consultation, and would form part of a focussed management plan for the restoration of the water body and dam infrastructure (see section 27 *Recreation Opportunities*).

The Gardner River has been identified by the South West Catchments Council Regional Natural Resource Management Strategy, as a second order priority asset under the Aquatic Biodiversity theme (SWCC 2012).

The river, creeks and wetlands are very significant habitat for a range of plants and animals, and as landscape features contribute greatly to the character, nature conservation and recreation values of the Park. The health of the drainages also affects the catchment further downstream, with the Park providing a buffer and filtering service for the catchment.

Protection and management of the Gardner River within Reserve 23470 Northcliffe Forest Park is the responsibility of the Shire of Manjimup. In common instances, river corridors

are on separate reserves, this is not the case for the Gardner River as it relates to Northcliffe Forest Park.

The Gardner River does not fall directly under current waterways management legislation. However, State Planning Policy 2.9 Water Resources (Government Printer 2006) provides a degree of protection. Notwithstanding, the legislation relating to waterways management is complex and currently under review, the Department of Water and Environment Regulation will administer a new Act, which will likely have implications for the management of the Gardner River (K McKeough pers. comm.).

<p>Objective</p> <p>Conserve the natural water drainages, associated water heritage infrastructure and wetland systems of Northcliffe Forest Park.</p>
<p>Management Actions</p> <ol style="list-style-type: none">1. Liaise with Department of Water and Environment Regulation, South West Catchments Council and the Warren Catchment Council regarding the management of the Gardner River and its catchment, as it relates to Northcliffe Forest Park.2. Liaise with the Department of Water and Environment Regulation on the conservation and management of the Northcliffe Town Dam infrastructure.3. The Northcliffe Forest Park Management Committee to seeking funding for supply and installation of sealed vault toilet systems at picnic and day-use sites to prevent nutrient escape.4. The Northcliffe Forest Park Management Committee and the Shire to maintain sustainable access to the river and creek systems for visitor enjoyment.5. The Northcliffe Forest Park Management Committee to seek funding for the interpretation of the Town Dam, river, creeks and wetlands for their natural and cultural values.6. Limiting disturbance on stream sides and wetlands to maintain water quality through intact healthy vegetation.7. The Northcliffe Forest Park Management Committee to develop a restoration plan to guide the restoration of the dam infrastructure and the water body behind the Town Dam on the Gardner River, including its potential for enhanced recreation.

17 Landscape

In the context of conservation reserve management plans in Western Australia, the term 'landscape' refers to the appearance or visual quality of an area (DEC 2012). Consideration of the landscape, its character, quality and management is a critical value that profoundly affects our response and relationship with place, and a vital consideration for Northcliffe Forest Park and this management plan.

The management of landscape is based on the premise that the visual quality of any landscape is a resource in its own right and can be assessed and managed in much the

same way as other resource values, such as fauna, flora, water and recreation. The role of landscape management is to ensure that all uses and activities are planned and implemented to complement rather than detract from the inherent visual quality of the environments in which they occur. For many in the community and visitors, visual appearance is the most direct way visitors will experience an area, therefore and often the criterion by which land management practices are judged (DEC 2012).

Landscape has character determined by its disposition by geomorphology, hydrology, soils, vegetation, land-use and cultural heritage attributes. In consideration of these attributes, landscapes in Western Australia have been identified for their character types to assess their visual landscape values (CALM 1994; DEC 2012).

Scenic quality is a part of landscape character. In the broader South West Region, the Southern Forests and Valleys Region (WBAC 2016) has been identified as a brand for a characterising and compelling landscape character and quality. Northcliffe Forest Park exemplifies the Southern Forests and Valleys its forest vegetation and Gardner River valley.

<p>Objective Consider the landscape as a character value, and by which management responses will be judged and stand scrutiny.</p>
<p>Management Action Ensure that the landscape and its visual values are protected and considered for access and facility design, management intervention such as fire suppression and described in interpretive materials.</p>

18 Native Plants and Plant Communities

Northcliffe Forest Park sits within the Muir District of the Bibbulmun Province in the Southwest Australian Floristic Region (Gioia and Hopper 2017) (Figure 5). The vascular flora of south-west Australia is particularly diverse, with a significant endemism (Hopper 1992; Hopper and Gioia 2004; Gioia and Hopper 2017). Species numbers for the South West Australian Floristic Region are estimated to be around 8,000, with about 25% endemic (Gioia and Hopper 2017).

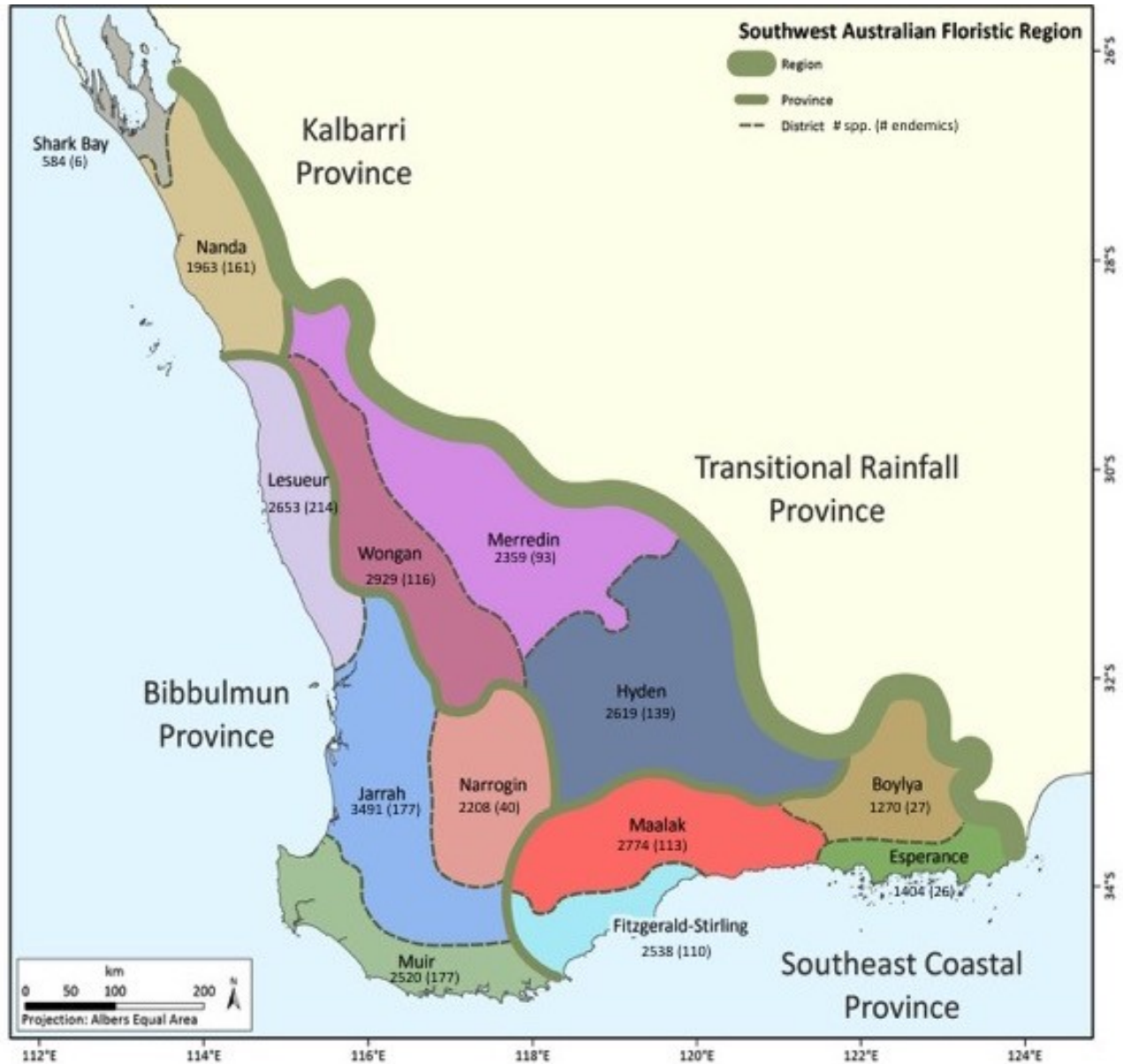


Figure 5. South West Botanical Region (Gioia and Hopper 2017).

A 1991 flora survey of Northcliffe Forest Park found 229 native vascular plant taxa and 20 introduced weeds, with two, and possibly three of the native taxa priority flora (Graham 1991). While the Graham study did not record orchids, subsequent work identifying the orchid flora recorded 45 taxa with one introduced taxon (Eiby 2018). These two studies record 274 taxa, 253 native and 21 introduced, a rich flora for a relatively small forest reserve. Notwithstanding, a thorough multi season survey would likely find further taxa.

Comparatively, 854 native vascular flora taxa have been recorded in the nearby much larger and more complex D'Entrecasteaux National Park, and 201 recorded for Shannon National Park (DEC 2012). The record for the 52,598 ha Shannon National Park is markedly less than that recorded for the considerably smaller 242 ha Northcliffe Forest Park. This apparent disparity is likely an artefact of the lack of flora survey effort in Shannon National Park, with its actual vascular plant diversity likely to be much greater (DEC 2012).

The Conservation Codes for Western Australian Flora and Fauna provides categories of Threatened, Extinct and Specially Protected flora and fauna (DBCA 2019b). These categories include Threatened species (T), Critically endangered species (CR), Endangered species (EN), Vulnerable species (VU); Extinct species (EX), Extinct in the wild species (EW); Migratory species (MI), Species of special conservation interest (conservation dependant fauna) (CD), Other specially protected species (OS), and Priority species (P1, P2, P3, P4) (DBCA 2019a, 2019b).

Currently no Threatened Flora is known from Northcliffe Forest Park. The 1991 flora survey reported two Priority Flora *Thomasia quercifolia* P4 and *Lomandra ordii* P4, and what was possibly *Schoenus fluitans* P2 (Graham 1991; J Smith pers. comm.). *Lomandra ordii* is known to occur in the Park, although *Thomasia grandiflora* and *Schoenus fluitans* are not known to occur in the vicinity or the vegetation types of the Park, and their reported occurrence in 1991 is considered to be mistaken identity as specimens were not lodged at the WA Herbarium or formally identified (J. Smith pers. comm.).

The native plants and their communities/vegetation types, principally the Karri and Jarrah forests provide much of the character of Northcliffe Forest Park and the region. The amenity brought by the character strongly identifies Northcliffe and is what compels people to visit. As such, the conservation of the plant communities is a primary focus of the community and of this plan.

The dominant plant communities or vegetation types of the Park are:

- Karri (*Eucalyptus diversicolor*) forest
- Jarrah (*E. marginata*) and marri (*Corymbia calophylla*) forest
- Jarrah and peppermint (*Agonis flexuosa*) woodland
- Peppermint and Warren River cedar or wattie (*Taxandria juniperina*) woodland
- *Taxandria parviceps* and swamp tea-tree (*Homalospermum firmum*) shrubland and thicket
- Sword sedge (*Lepidosperma spp.*) sedgeland.

Plant communities are the elemental foundation of the biological diversity, character and habitat to protect; they provide the insulating litter blanket that improves and protects the soil, and the biomass that fire consumes as hazard. As such, best protecting and managing the plant communities requires an understanding of their regeneration behaviour, as well as distribution, composition, structure, habitat and litter drop, and the differences displayed in all these behaviours and values.

The plant communities closely match the landforms and soil types; the changes between the communities match the changes in the underlying landforms and soils. In some cases, changes in the landform and soil types can be subtle yet reflect an obvious change in the plant community, while in other situations soil type differences are pronounced and make for a dramatic change in plant community.

Karri forest

Karri forest provides the character for the Southern Forests and Valleys Region. It typifies Manjimup Shire and frames the towns of Manjimup, Pemberton, Northcliffe and Walpole.

Karri forest is a three-storey community, dominated by large fast-growing plants on damp rich loamy soils, of which many are obligate seeding - save for the common long-lived ground blanketing sedges and the midstorey trees karri oak (*Allocasuarina decussata*)

and the less common peppermint (*Agonis flexuosa*). The upper storey is karri and a few marri; the mid storey dominated by karri oak, karri hazel (*Trymalium odoratissimum*), karri wattle (*Acacia pentadenia*), net-leaved wattle (*A. urophylla*), chorilaena (*Chorilaena quercifolia*), and crowea (*Crowea angustifolia*); with the low understorey waterbush (*Bossiaea aquifolium*), cut-leaved hibbertia (*Hibbertia cuneiformis*) and sword sedges (*Lepidosperma effusum*, *L. spp.*) (Graham 1991).

Many of the obligate seeding plants of the mid and under storey are relatively short-lived, rapid, dense re-colonisers following fire (Barrett et al 2009; DEC 2012). This strong and congested response can lead to rapid and heavy thicket and hazard development, and if repeated often, may lead to significant seed bank development as a result of selection pressure from frequent disturbance.

Patches of long unburnt karri forest has a very different appearance, structure and composition than the more common frequently burnt karri forest. In long unburnt forest, the karri are predominantly larger with no or very few saplings. The midstorey is very open, in places non-existent, or in limited patches – mostly of longer-lived karri oak, with large old individuals of karri hazel and a few large karri wattle remaining. Low clumping sedges dominate the ground-blanketing understorey with few or no obligate seeding shrubs remaining.

During the 1980's, scientists from the CSIRO investigated the dynamics of karri forest litter and its role in nutrient cycling and biomass accumulation. The work showed patterns of litter accumulation and nutrient cycling relative to stand age, litter parent type, litter age and fire frequency (O'Connell and Menage 1982; O'Connell 1987, 1989). The findings are of use in understanding the roles and importance of plant litter in forest ecosystems to guide management.

Jarrah forest and woodland

Jarrah and marri forest occurs on relative rich gravelly loam over clay, it is similar to karri forest in that the mid and understorey are similar in structure and composition. jarrah, marri and karri oak can re-sprout following fire, as do the understorey sedge. However, the midstorey hazel and wattle dominants are obligate seeders (Barrett et al 2009).

Jarrah woodland occurs on poor gritty quartz-dominated sands over clay, with the depth of sand variable. These woodlands are lower, more open and sparser than the adjoining forest communities on better soils. Notwithstanding, the Jarrah woodland community is generally more diverse, variable in storey and structure, and with an apparent predominance of resprouting plants.

The overstorey is jarrah and some marri; the midstorey is scattered bull banksia (*Banksia grandis*), *Taxandria parviceps*, *Kunzea recurva*, *Melalueca thymoides*, *Jacksonia horrida*, *Acacia extensa* and other taxa. The understorey is dominated by basket flower (*Adenanthos obovatus*), sedge or sedge-like plants (*Lepidosperma spp.*, *Anarthria scabra*, *A. prolifera*, *Cyathochaeta avenacea*, *Hypolaena exsulca*, *Patersonia spp.*), and dryland rush (*Desmocladius flexuosus*) (Graham 1991). The plants in the mid and under storeys are a mixture of short-lived obligate seeding and long-lived resprouting taxa, with the re-sprouters providing the majority of the biomass, which is patchy in distribution, structure and hazard (Barrett et al 2009).

Lower slope woodlands

Jarrah, Swan River blackbutt (*E. patens*), marri and peppermint woodland occur on lower slopes and along the river corridor riparian zone, often as lower stature than jarrah/marri woodland above. Soils are gritty sands, often damp with more organic content than plateau sandy lenses. Midstorey is *Taxandria parviceps*, sometimes with tall native willow (*Callistachys lanceolata*) patches near drainages, with understoreys dominated by sedge and rush taxa. The plants are a mixture of obligate seeding and re-sprouting taxa, with the re-sprouters providing the larger proportion of biomass.

Wetlands

Wetland communities are variable, some dominated by a dense low forest of wattie with an understorey of sedges, others are dominated by thickets of medium height shrubs, and some by swamp banksia (*Banksia littoralis*). All occur on damp loamy or sandy substrates, often with significant organic content. Wattie is a tall obligate seeder killed by fire, while the predominant plants of the shrub thickets are other *Taxandria* taxa – (*T. linearifolia*, *T. parviceps*) and sometimes hybrids combinations of (*T. juniperina*, *T. linearifolia* and *T. parviceps*), swamp bottlebrush (*Beaufortia sparsa*), swamp tea tree (*Homalospermum firmum*), and *Astartea fascicularis*, which are all resprouting taxa (Barrett et al 2009).

Sedges are relatively diverse in taxa and structure, and most of these are re-sprouters, they include zebra sedge (*Evandra aristata*), giant saw sedge (*Gahnia decomposita*) and velvet rush (*Leptocarpus spp.*) (Graham 1991; J Smith pers. comm.). Understorey taxa are very diverse, often differing depending on seasonal flooding, with small rushes and sedges and other aquatic plants when wet, to small annuals and orchids when drier.

Biomass in the wetlands is mostly heavy and dense, albeit generally lower in stature - except for the low forest formed by wattie, which gives rise to higher hazard ratings in these communities. The organic-rich soil that underlies the wetlands is vulnerable to fire when dry, which can deplete and severely damage the fragile substrate that these communities, their habitats and diversity of inhabitants rely upon for their existence (Horwitz et al 2003; Barrett et al 2009).

Ground litter as dead plant biomass has value as mulch that forms habitat for a range of animals, provides a protective and insulating layer over the soil and plays a key role in nutrient and carbon recycling (York 1999; Sayer 2006). Maintaining this protective medium is an important consideration for management, to protect the moisture that contributes to habitat quality and ground humidity, of particular concern in a drying climate and for mitigating bushfire hazard.

An improved understanding of the dominant plant community regeneration behaviour in relation to fire disturbance and litter development, can help better comprehend hazard development and lead to the design of sustainable hazard reduction techniques and maintain conservation values.

Objective

Conserve the diversity of native plants in the context of changing climates, and the structure, composition and ecological functions of the plant communities of Northcliffe Forest Park.

Management Actions

1. The Northcliffe Forest Park Management Committee to encourage and develop partnerships with agencies, institutions and community groups to survey and record the plants and plant communities.
2. The Northcliffe Forest Park Management Committee to seek funding and/or resources that will survey by plot or relevé replicated representative sites within plant communities in spring and autumn to record diversity, composition, structure, biomass/hazard, and litter, and from which to map the Park's plant communities/vegetation types and flora for the record and to monitor change over time. Collect plant specimens as part of the survey and lodge with the WA Herbarium to aid identification and collection integrity.
3. The Northcliffe Forest Park Management Committee seek funding and/or resources that will identify native plants and plant communities that may need special protection from threatening processes such as Phytophthora dieback, frequent fire disturbance, introduced animals or human impacts.
4. Maintain old growth areas and monitor changes and comparisons of composition, structure and litter levels with younger stands.
5. Conserve protective leaf litter and organic soils; investigate moisture retention dynamics and contribution to micro-humidity and habitat values.
6. The Northcliffe Forest Park Management Committee seek funding and/or resources that will investigate the diversity of native fungi and their roles in ecological function, particularly in leaf litter.
7. Rehabilitate disturbed areas such as gravel pits, road and track sides and other disturbed sites.
8. The Northcliffe Forest Park Management Committee that will promote compatible management of native vegetation on adjoining public and private lands.
9. Prohibit the removal or taking of plant material from the Park, including firewood, brush and wildflowers.
10. The Northcliffe Forest Park Management Committee seek funding and/or resources that will recognise and interpret the role native plants and plant communities' play in supplying ecological function, habitat for native animals, character for people's attachment, and amenity for recreation.
11. The Northcliffe Forest Park Management Committee seek funding and/or resources that will interpret the vulnerability of native plants, plant communities and the habitats they form to human – induced negligence and impacts.
12. Promote Northcliffe Forest Park as a high-quality native forest reserve and visitor experience.

19 Native Animals

Northcliffe Forest Park has a rich fauna, with 45 native bird species and one introduced, 13 mammals with five introduced, 15 species of reptiles, eleven frogs, five fish and four aquatic crustaceans. This fauna was identified by a comprehensive survey conducted during 2013 (Eiby 2103) and a fish survey of the Gardner River and nearby streams in

2015 (J. Carley pers. comm.). Notable is the apparent absence of the highly invasive eastern or plague minnow (*Galaxius holbrookii*) from the drainages, which is otherwise common and widespread in the south-west.

Fauna of conservation significance known from the Park are Baudin's black cockatoo (*Calyptorhynchus baudinii*) (EN), forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (VU), Balston's pygmy perch (*Nannatherina balstoni*) (VU) and mud minnow (*Galaxiella munda*) (VU) (WA Government Gazette 2018; DBCA 2019b; J Carley pers. comm.).

Western ringtail possum (*Pseudocheirus occidentalis*) (CE), and quokka (*Setonix jubata*) (VU) have been reported in the past from Northcliffe Forest Park, although no recent firm evidence of their occurrence exists (Eiby 2013).

Terrestrial and aquatic invertebrates (other than the aquatic crustaceans) are poorly known, survey effort is required to gain a basic understanding of diversity and distribution. A particular focus is needed on the invertebrate fauna of forest leaf litter to understand their diversity and roles in converting the litter.

The water body created by the town dam on the Gardner River appears to offer a relatively large still- water aquatic habitat. However, the habitat value may be compromised by nutrients, soil depositions and weed infestations. As such, restoration of the water body requires consideration.

Northcliffe Forest Park provides habitats for a range of native animals, which contribute to the amenity and appeal for the Northcliffe community and visitors. Provision of amenity and appeal as character includes the sights and sounds of the animals, the evidence of their existence as they feed and move, the structures they build, the smells they make and the notion of their existence and refuge in the Park.

Maintaining and enhancing the Park's habitats to ensure the long-term survival of the fauna is important for the well-being of the character, cultural, ecological, intrinsic, and recreation values they provide. Information and interpretation about the native animals and their roles in these values is a primary need for visitors and community interest.

Objective Conserve the diversity and abundance of native animals and habitats of Northcliffe Forest Park
Management Actions <ol style="list-style-type: none">1. Protect habitats from impacts by changes to water quality, introduced animals, disease and human disturbance.2. Design feral cat and red fox control programs appropriate for near-town use.3. The Northcliffe Forest Park Management Committee seek funding and/or resources that will survey threatened animals quokka, western ringtail possum, south-western brush-tailed phascogale or wambenger (<i>Phascogale tapoatafa wambenger</i>) (CD), Carnaby's black cockatoo (<i>Calyptorhynchus latirostris</i>), Balston's pigmy perch (<i>Nannatherina balstoni</i>) (to confirm), black-striped minnow (<i>Galaxiella nigrostriata</i>), Carter's freshwater mussel (<i>Westralunio carteri</i>) using non-invasive methods such

as observation, listening, remote cameras, tracks and traces and other to inform conservation actions.

4. The Northcliffe Forest Park Management Committee seek funding and/or resources that will monitor animal populations at the same as encouraging further research to determine and monitor distribution and abundance, and in particular invertebrates. Design baseline survey program to inform monitoring.
5. The Northcliffe Forest Park Management Committee seek funding and/or resources that will investigate leaf litter and organic soil habitats for their invertebrate fauna and their functions.
6. Partner with research organisations and groups to investigate fauna diversity and functions.
7. The Northcliffe Forest Park Management Committee seek funding and/or resources that will investigate the aquatic fauna content and habitat value of the water body created by the town dam on the Gardner River, and consider its restoration needs. Liaise with Warren Catchment Council and Murdoch University on habitat values and restoration design.
8. Liaise with the Department of Biodiversity, Conservation and Attractions regarding the conservation of threatened animals in Northcliffe Forest Park, including the potential for the Park as a reintroduction reserve for some.
9. Provide information on the native animals of Northcliffe

20 Ecological Communities

An ecological community is a naturally occurring group of plants, animals and other organisms interacting in a unique habitat. The complex range of interactions between the component species provides an important level of biological diversity in addition to genetics and species (DBCA 2019a).

Northcliffe Forest Park contains a number of ecological communities, although none are listed as Western Australian State Priority or Threatened Ecological Communities (DBCA 2017, 2018), or National *EPBC Act 1999* Listed Threatened Ecological Communities (Australian Government 2013).

The *Biodiversity Conservation Act 2016* provides for the statutory listing of threatened ecological communities (TECs) by the Minister for the Environment. The new legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs (DBCA 2019c).

The Priority Ecological Community *Epiphytic Cryptogams of the Karri Forest* (DBCA 2019a) is known to occur in the Park slightly upslope from streams (J. Smith pers. comm.). It comprises liverworts, mosses and lichens on the bark of mature *Trymalium odoratissimum* and *Chorilaena quercifolia* trees in the Karri forest understorey. Its threats are clearing, inappropriate fire regimes (less than 20 years) and weeds (DBCA 2019a).

Objective

Conserve the ecological communities of Northcliffe Forest Park.

Management Actions

1. The Northcliffe Forest Park Management Committee to investigate the presence of the *Epiphytic Cryptogams of the Karri Forest* priority ecological community where it was previously known from; ensure conservation considerations as long unburnt patches are included in prescribed burn for fuel reduction planning.
2. Liaise with the Department of Biodiversity, Conservation and Attractions regarding the identification and conservation of ecological communities in Northcliffe Forest Park, in particular Priority Ecological Communities.
3. Provide information on the recognition and significance of ecological communities in Northcliffe Forest Park.

21 Environmental Weeds

Environmental weeds are typically introduced plants growing where they are not wanted (Hussey et al 2007). Weeds are usually introduced plants from other countries or other parts of Australia. Environmental weeds displace native plants, particularly on disturbed sites, by bettering them for space, light, nutrients and water. They can also have a significant adverse impact by altering animal habitats and increasing the fire hazard (DEC 2012).

Western Australia has a unique and relatively sensitive flora in an old landscape, one of the three oldest places on earth (Hopper 2009); as such common weeds that are mostly 'disturbance opportunists' are able to find suitable habitats where disturbance from human activity as agriculture and urban and industrial development is common.

Environmental weeds occupy dry and wet landscapes, often finding drainage systems in or near agricultural areas favourable habitats due to the disturbance effects of increased nutrient availability usually together with sedimentation from runoff.

The Shire of Manjimup Weed Strategy (Shire of Manjimup 2008b) states: *Weed management, and the community's involvement in it, is an essential part of the community acknowledging the values of our natural environment for this area. It has to be recognised that weed management is integral to the sustaining of these values. This Weed Strategy will assist in implementing the Council's Strategic Plan, in conjunction with the Natural Environment Strategy, to achieve this vision.*

The aims of the Weed Strategy are to:

- reduce weed infestations in the Shire of Manjimup;
- provide strategic direction for the management of weeds;
- develop a local approach to important environmental weeds in the Warren Blackwood Region; and
- encourage the best use of available information in decision-making.

The objectives of the Strategy, within the finite resources available, are to:

- develop weed lists of actual and potentially significant weeds on Shire managed lands;

- identify a range of programmes and actions that will improve control or eradication mechanisms for weeds in the Shire; and
- develop partnerships with stakeholders to more effectively integrate weed management outcomes.

Some weeds are ‘Declared’ under the Biosecurity and Agriculture Management Act 2007 (BAM Act). Landholders, including the Shire of Manjimup, are legally responsible for eradicating plants declared under the BAM Act. Some weeds are also listed as a ‘Weed of National Significance’ or WoNS (Hussey et al 2007).

Thirty-two Weeds of National Significance (WoNS) have been agreed by Australian governments based on an assessment process that prioritised these weeds based on their invasiveness, potential for spread and environmental, social and economic impacts. Consideration was also given to their ability to be successfully managed. A list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012. WoNS have been selected because their management requires coordination between all levels of government, organisations and individuals with weed management responsibilities (Australian Government 2019a).

Northcliffe Forest Park has weeds present in disturbed areas including alongside the Railway reserve, along roads and tracks, and in the Gardner River – principally alongside the water body above the town dam.

Weed management should be based on priorities (Table 2) based on the criteria:

- their pest status (declared/WoNS);
- existing and potential impact by the species on principle values of the Forest Park;
- ability to invade;
- new and small infestations;
- probability that control can be successful;
- possibility of more than one weed species being treated simultaneously;
- likelihood of reinvasion from nearby infestations;
- ability to alter native plant community structure and composition;
- ability to dominate; and
- level of participation of other stakeholders including community groups.

Table 2. Environmental Weeds recorded in Northcliffe Forest Park, and their pest status (WAOL 2018), ecological impact and management priority.

Common Name	Scientific name	Pest Status	Ecological Impact	Management Priority
Blackberry	<i>Rubus anglocandicans</i>	Declared Weed, WoNS	Smothers streamsides and gullies	High
Bridal creeper	<i>Asparagus asparagoides</i>	Declared Weed, WoNS	Smothers understorey vegetation	High

Common Name	Scientific name	Pest Status	Ecological Impact	Management Priority
Freesia	<i>Freesia alba</i> x <i>leichtlinii</i>	Permitted	Occupies disturbed sites, can invade adjacent bushland,	Moderate
Gladiolus	<i>Gladiolus spp.</i>	Permitted	Invades sandy sites in bushland.	Moderate
Watsonia	<i>Watsonia spp.</i>	Permitted	Invades damp sites.	Moderate
Wild oats	<i>Avena fatua</i>	Permitted	Occupies disturbed sites.	Low
Veldt grass	<i>Ehrharta calycina</i>	Permitted	Occupies disturbed sites, can invade sandy sites in bushland.	Low
Annual veldt grass	<i>Ehrharta longiflora</i>	Permitted	Occupies disturbed sites.	Low
African love grass	<i>Eragrostis curvula</i>	Permitted	Occupies disturbed sites.	Low
Sydney golden wattle	<i>Acacia longifolia</i>	Permitted	Invades bushland.	High
Cootamundra wattle	<i>Acacia baileyana</i>	Permitted	Occupies disturbed sites, can invade bushland.	High
Blackwood	<i>Acacia melanoxylon</i>	Permitted	Occupies disturbed sites, can invade bushland.	Moderate
Water weeds in Gardner river	Various taxa	TBA	TBA	TBA

Reliable weed identification and management advice is available for common weeds, declared weeds and WoNS. These include identification guides such as Western Weeds (Hussey et al 2007) and weed management manuals (DPI 2009). Notwithstanding priorities and available advice, weeds can be difficult to manage, particularly when common widespread weeds are well established on other tenures nearby and soil disturbance cannot be completely eliminated.

Options for weed management include prevention, eradication, control, containment, or do nothing. Eradication can be unrealistic, and works best where localised patches or the edges of infestations present the spatial opportunity and resources are available for potential success. Control methods include limiting disturbance, herbicide application, biological agents, manual removal or the careful use of fire to stimulate seed banks and new growth for treatment by other methods. Effective weed management supports the ingress and growth of resilient native plants and the suppression of weed species (DEC 2012).

<p>Objective</p> <p>Minimise the constraints and impacts from environmental weeds on the principle values of Northcliffe Forest Park.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Use the Shire of Manjimup Weed Strategy as a guiding document for environmental weed management, in particular the methods by which its objectives can be achieved (Shire of Manjimup 2008b). 2. The Northcliffe Forest Park Management Committee will design management approaches according to weed management priorities identified in Table 2. 3. Limit ground and soil disturbance wherever possible. Stability is critical for the health and resilience of native plant communities. 4. Where possible integrate weed management programmes with other natural resource management programmes and projects, for instance the restoration of the water body behind the town dam on the Gardner River and the broader landcare works on the Regional NRM Strategy prioritised Gardner River. Integration is likely to improve management outcomes and improve the case for funding support. 5. The Northcliffe Forest Park Management Committee to work with community groups including the Warren Catchment Council to develop and implement weed and other biosecurity management programmes. 6. Coordinate with local DPIRD Biosecurity Officer. Should a Regional Biosecurity Group be established in future, coordination with this group could be of benefit to a wider coordinated effort for weed and other biosecurity management. 7. Use weed management technical resources developed by other jurisdictions, particularly for WONS, such as the Blackberry Control Manual (NSW DPI 2009). 8. The Northcliffe Forest Park Management Committee to identify weeds in the Town Dam on the Gardner River, consider and seek advice on control measures from DPIRD and SWCC. 9. Seek resources to develop and implement weed management priorities from sources such as Lotterywest, State Natural Resource Management Programme and the National Landcare Programme.

22 Feral Animals

Feral animals cause significant damage to native animals, plants and habitats. They can directly predate native animals, destroy native plants, disrupt biological and ecological

function, cause erosion and stream pollution, introduce and harbour disease, and reduce the character and recreation values of the natural environment.

As the landholder of Northcliffe Forest Park, the Shire of Manjimup has responsibilities to control declared animals on land it manages under the BAM Act. Feral animals, including declared species, are listed in table 2.

Management of feral animals, like environmental weeds, should be prioritised for management attention (Table 3), based on the criteria:

- existing and potential impact of the animal on the principle values of the Forest Park;
- declared pest status;
- effectiveness of control measures;
- availability of resources; and
- the level of participation of other stakeholders including the community.

Table 3. Feral animals recorded in Northcliffe Forest Park, and their pest status, ecological impact and management priority.

Common name	Scientific name	Pest Status	Ecological Impact	Management Priority
House mouse	<i>Mus musculus</i>		Distorts food chain, competes with native animals for food	Low
Black rat	<i>Rattus rattus</i>		Predates small native animals, distorts food chain	Moderate
Feral cat	<i>Felis catus</i>		Predates small and medium native animals	High
Red fox	<i>Vulpes vulpes</i>	Declared Species	Predates medium native animals	High
Feral pig	<i>Sus scrofa</i>	Declared Species	Habitat destruction, ground disturbance, dieback vector	High
Rabbit	<i>Oryctolagus cuniculus</i>	Declared Species	Grazes native plants, competes with native herbivores, ground disturbance	Moderate
Laughing kookaburra	<i>Dacelo novaeguineae</i>	Acclimatised	Predates small native animals, although impacts may be slight (Long 1981)	Moderate

Common name	Scientific name	Pest Status	Ecological Impact	Management Priority
Eastern or plague minnow	<i>Gambusia holbrookii</i>		Aggressive to small native fish, competes for food and protective habitat	Moderate
Redfin perch	<i>Perca fluviatilis</i>		Predates native fish and crustaceans	Moderate
Rainbow trout	<i>Oncorhynchus mykiss</i>		Predates native fish and invertebrates	Low
Brown trout	<i>Salmo trutta</i>		Predates native fish and invertebrates	Low
European honeybee	<i>Apis mellifera</i>		Competes for tree hollows and nectar, interferes with pollination	Moderate
Yabby	<i>Cherax destructor</i>		Competes with native crustaceans for habitat, reduce water quality	Moderate
Molluscs	<i>Oxychilis sp.</i>		Predate and compete with native snails, graze sensitive native plants	Moderate

Objective

Minimise the constraints and impacts from feral animals on the principle values of Northcliffe Forest Park.

Management Actions

1. The Northcliffe Forest Park Management Committee to design management approaches according to feral animal management priorities identified in Table 3.
2. Develop feral animal control and management programmes in consultation with community, through the Northcliffe Forest Park Management Committee.
3. Comply with threat abatement plans under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and WA *Biodiversity Conservation Act 2016*.
4. The Northcliffe Forest Park Management Committee to liaise with adjoining and nearby landholders, Department of Biodiversity, Conservation and Attractions, Department of Primary Industry and Regional Development, about feral animal management programmes planned and their involvement in surrounding lands.
5. Should a Regional Biosecurity Group be established, involvement would be beneficial for feral animal (and other biosecurity) management and coordination.
6. Ensure that control and management programmes do not affect other Park values.

7. The Northcliffe Forest Park Management Committee to liaise with Murdoch University Native Fish Study Group and Warren Catchment Council in the management of feral fish.
8. The Northcliffe Forest Park Management Committee seek funding and/or resources that will remove feral bee colonies from areas where there is an impact on recreational and conservation values, in consultation with beekeepers (see 36 *Beekeeping*).
9. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide information on the impacts of feral animals on the Park's principle values.
10. Support research programs into the control and impacts of feral animals.

23 Disease

A number of diseases that affect native animals and plants are present in south west Australia, some are particularly virulent causing severe impacts on what has become known to be a vulnerable biota.

Of the diseases, 'dieback disease' caused by the fungal-like pathogen *Phytophthora cinnamomi* is the most concerning pathogen in Northcliffe Forest Park. *P. cinnamomi* is of concern because it kills susceptible plants often leading to their elimination from sites, leading to permanent and dramatic alteration of plant communities, and is so easily spread if sound hygiene is not practiced (DEC 2012).

Dieback caused by *P. cinnamomi* is recognised as a key threatening process under the Commonwealth Environment Protection and Biodiversity Conservation Act and a threat abatement plan has been prepared (Environment Australia 2001c).

Western Australian ecologist Professor Steve Hopper (Hopper 1994) suggests that four factors in particular may contribute to the susceptibility of the southwest flora to disease epidemics:

- a generally flat landscape with predominantly acidic, highly leached and nutrient deficient soils with slow drainage (diseases such as *P. cinnamomi* thrive in acidic moist soils);
- a rich vascular flora that has been geographically isolated for a long time, with a range of adaptations for nutrient deficient soils, many involving symbiotic partnerships with micro-organisms such as fungi - and consequently, a diverse range of vulnerable hosts for diseases;
- a climatic regime where drought is common; and
- the rapid and ongoing human development of the landscape following European settlement including direct destruction or alteration of habitat by fragmentation, altered landscape processes, and introduction of numerous weeds and pests.

P. cinnamomi is known to be present in Northcliffe Forest Park (Shire of Manjimup 1999), and is present in areas surrounding (DEC 2012). In nearby D'Entrecasteaux National Park towards Windy Harbour, its impacts on susceptible banksia dominated communities have led to their almost total alteration by the removal of the banksia components (G Gardner, J Young pers. comm.). The plant communities that are most susceptible in the Park are

the diverse Jarrah communities in sandy soils and wetland communities where swamp banksia (*Banksia littoralis*) is present.

Other plant diseases of concern include those caused by honey fungus (*Armillaria luteobubalina*), and potentially myrtle rust (*Austropuccinia psidii*). Honey fungus is an endemic wood rotting fungus that attacks many native plants, particularly forest trees, including some that are not susceptible to *P. cinnamomi*. It establishes in old rotting tree stumps, and colonises by root-to-root contact (Pearce et al 1986; Shearer and Tippet 1988; Shearer et al 1997a, 1997b, 1998; DEC 2012). Myrtle rust is caused by an exotic fungus, which threatens trees and shrubs in the plant family Myrtaceae including the locally common genera *Astartea*, *Beaufortia*, *Corymbia*, *Eucalyptus*, *Homalospermum* and *Melaleuca*. It is not known in Western Australia yet, although is established on the east coast (Australian Government 2019b).

The most concerning animal disease is the frog fungus (*Batrachochytrium dendrobatidis*), which lives as a parasite in the skin of amphibians. It was confirmed to exist in WA in 1998, although some evidence suggest it was present in the Albany region in 1985 (DEC 2012). Frog fungus has been found to infect readily two frogs found in the Park - slender tree frog (*Litoria adelaidensis*) and western banjo frog (*Limnodynastes dorsalis*) (DEC 2012).

The disease known as Toxoplasmosis affects birds and mammals. It is an infection caused by the parasite *Toxoplasma goodii*, a single celled organism, which forms egg-like structures called oocysts that can be ingested by mouth. Humans become infected through contact with infected animal faeces; cats (*Felis catus*) are the main hosts acquiring the parasite by eating infected small invertebrate prey (BetterHealth 2019). Quenda (*Isodon obesulus*) is known to harbour the parasite in Western Australia (W. Eiby pers. comm.), and are known to occur in the Forest Park.

Objectives

Prevent the introduction of plant and animal diseases into disease-free areas of the Park.

Minimise the spread or impact where plant and animal diseases are already present, and increase community awareness of their existence, impacts and management requirements.

Management Actions

1. Aim to provide strict dieback disease hygiene for all management activities.
2. The Northcliffe Forest Park Management Committee to ensure management staff and contractors are aware of and trained in dieback disease hygiene.
3. The Northcliffe Forest Park Management Committee seek funding and/or resources that will map *P. cinnamomi* and honey fungus disease occurrences, identifying protectable areas where possible and consideration of disease spread. Maintain up to date maps.
4. Consider the prevention of myrtle rust infection by communicating its threat and the need for good hygiene practices
5. The Northcliffe Forest Park Management Committee seek funding and/or resources that will monitor frog populations for evidence of frog fungus, and map occurrences if found.
6. Consider the closure unsealed roads and tracks in wet conditions.

7. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide information for the community and visitors about diseases and the need for careful management and use of the Park to limit spread and impacts.
8. The Northcliffe Forest Park Management Committee to liaise with neighbours and other stakeholders to inform about disease risks and the need for hygiene, and to minimise the risk of disease introductions.
9. The Northcliffe Forest Park Management Committee to liaise and where possible partner with the Department of Biodiversity, Conservation and Attractions and the WA Museum on disease management.

24 Fire

The challenge for fire management in Northcliffe Forest Park is to protect its principal values as well as community and private assets surrounding including Northcliffe townsite from bushfire. The challenge must be met to limit the potential of impacts from bushfire, maintain lowest hazard relative to values, and to provide managers and the community with confidence and reassurance.

Protection from bushfire of the Forest Park's many values and adjacent community and private values, requires a balance between the conservation of native vegetation health, habitat, character and recreation provision, access to provide for recreation and fire management including suppression, the often differing and competing desires of the community, and the responsibilities of Park managers.

The Shire of Manjimup is responsible for the management of Northcliffe Forest Park, including bushfire hazard and risk. It will do this in accordance with best practice, and guided by the Shire of Manjimup Fuel Hazard Reduction Notice, Bushfire Risk Management Plan and Fuel Hazard Reduction Plan (Shire of Manjimup 2019, 2019, 2019).

The role of this management plan is to outline and consider the issues that may compete and to balance protection of Park values with the protection of adjoining community assets from bushfire. This is the same challenge that nature conservation and land management agencies also face (DEC 2012). However, compared to the mostly very large national parks and State forests of the region, differences lie in that Northcliffe Forest Park is relatively small, close to firefighting resources, with good access and mostly surrounded by cleared land. Whereas the national parks and State forests cover tens and sometimes hundreds of thousands of hectares, are mostly distant from resources, with limited access and not surrounded in close proximity by cleared lands.

The current Northcliffe townsite fuel reduction plan breaks the Forest Park into ten cells bounded by the road, management track and firebreak network. Prescribed fire, mechanical slashing and some herbicide treatments are used on a cell rotation basis to reduce fuel hazard (Figure 6). The north-eastern corner of the Park lies outside the cell system, as it does not have a track along the boundary in this area, and the south-eastern boundary does not have access between Boorara Rd and Vivers Rd. The firebreak and road network allow the application and monitoring of hazard management techniques, suppression activities should they be required, and in the case of the firebreaks, recreation as non-motorised public access.

The Northcliffe Bushfire Brigade consists of dedicated, experienced and skilled volunteers resourced with good equipment and supported by the Shire of Manjimup, Rural Division of the Department of Fire and Emergency Services and DBCA. The bushfire brigade is well rehearsed and successful at fast attack bushfire suppression, and well acquainted with the Forest Park. The existence of the brigade and their skills provides protection for the Park and community values. Effective bushfire suppression can be enabled by rapid response and direct attack when fires are small, and proximity of the brigade and available vehicle access in and around the Park is critical to this ability and its success.

In 2012 and 2015, wildfire ignited by lightning strikes some 30 km east of Northcliffe posed a degree of threat to Northcliffe townsite and the Forest Park as they spread westwards in difficult conditions. An increase in lightning strikes and fire ignition due to climate variability is apparent in the Warren Region (Bates, McCaw and Dowdy 2018). The trend increase in ignition potential and frequency will require greater vigilance and management ability to manage the increased risk of wildfire across the region including in Northcliffe Forest Park.

Therefore, it is recognised that bushfire affecting Northcliffe and Northcliffe Forest Park may, and is more likely, to occur from ignition outside the Park (Bates McCaw and Dowdy 2018), which could place additional pressure on suppression ability in the Park from large fire fronts, making rapid or direct suppression impossible. Therefore, the reduction of fuel loads to acceptable levels (see Shire of Manjimup Fuel Hazard Reduction Notice, Shire of Manjimup 2019), in a balance with conservation and amenity considerations is required.

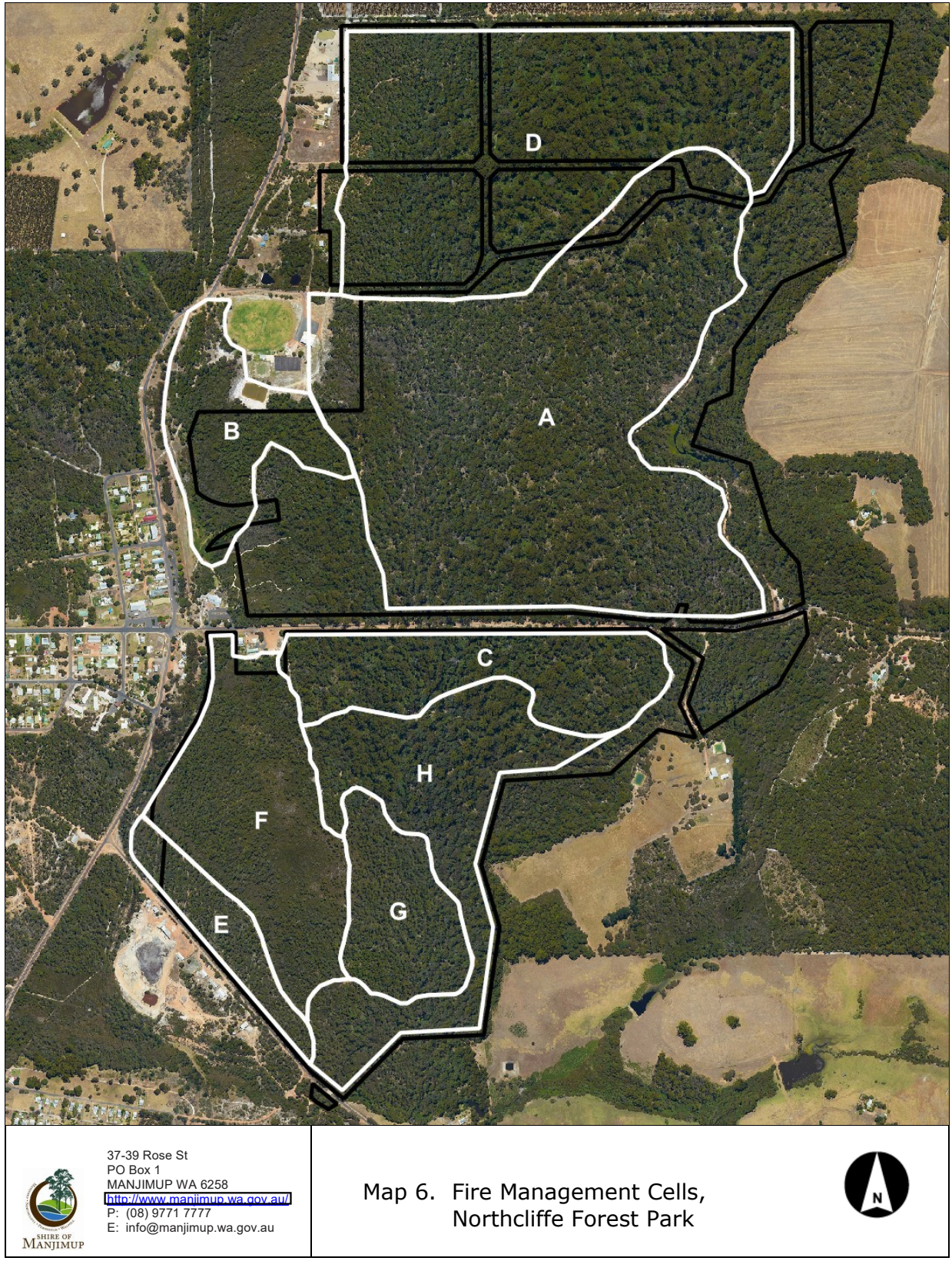


Figure 6. Fire Management Cells, Northcliffe Forest Park

PART D. CULTURAL HERITAGE

Northcliffe Forest Park was established as a formally named reserve in 1986 largely as a result of the work of community leaders the late Mr. George Gardner OAM, Mr Archie Jackson and the Northcliffe Forest Park Management Committee. From 1953 until 2001 the Park existed as a Shire vested national park, in 2001 the purpose was adjusted to parkland and Recreation (Shire of Manjimup 1999; CALM 2003). This history providing evidence of the natural and cultural heritage value of the Park being realised early and was further reinforced by the formalisation of Northcliffe Forest Park.

In Western Australia, the *Aboriginal Heritage Act 1972* protects places and objects customarily used by, or traditional to, the original inhabitants of Australia. A register of such places and objects is maintained under the Act, and the Act provides protection for sites whether they are on the register or not. Under the Act it is an offence for anyone to in any way alter an Aboriginal site or object without the relevant Minister's permission (DEC 2012).

The Heritage of Western Australia Act 1990 provides for the registering and protection of places of historic interest as 'heritage places'. These sites are registered on the Western Australian 'Register of Heritage Places' database. Places listed under the Act are afforded statutory protection and must not be damaged or altered unless a permit to do so has been granted by the Heritage Council of Western Australia. The Act also requires local government authorities to maintain an inventory of places of heritage significance in their area, referred to as the 'Municipal Inventory' (DEC 2012).

The Shire of Manjimup Strategic Community Plan 2017-2027 and Corporate Business Plan 2017-2021 recognise the importance of cultural heritage and provide for its conservation as priority. In the Our Infrastructure Section of the Strategic Community Plan provides the Community Goal: *Places of heritage value are recognised and retained*, and the Strategy: *Maintain a Municipal heritage Inventory and include controls to protect places of significance* (Shire of Manjimup 2017a, 2017b).

25 Noongar Heritage

Noongar history of the area is significant with peoples' histories and sites well known from the Northcliffe area (Crawford and Crawford 2003). Northcliffe Forest Park lies almost on a present-day boundary between Noongar Native Title Settlement Agreement groups (Commonwealth of Australia 2014a, 2014b). The term Noongar or its linguistic equivalent is identifiable as the word for an Aboriginal person from this region although they may have different vocabularies (Crawford and Crawford 2003).

The Murrum Noongar people occupied the Northcliffe area; their country is west of Wilsons Inlet to the Hardy Inlet and Blackwood River, and possibly beyond to the North (Crawford and Crawford 2003). Tindale records the area surrounding Northcliffe, from Denmark west to the Blackwood River and inland as far as where Manjimup now stands, as that of the Pibelmen People (Tindale 1974).

Evidence of Noongar occupation of the area is by archaeological sites within what is now Northcliffe Forest Park (G Gardner, W Eiby pers. comm.; Shire of Manjimup 1999), in the Dombakup Creek area to the west of Northcliffe (Crawford and Crawford 2003); and the Meerup, Malimup and Doggerup areas southwest of Northcliffe (DEC 2012).

Native title agreements have been reached for South West Boojarah # 2 Agreement area and the Wagyl Kaip Southern Noongar Agreement area (Commonwealth of Australia 2014a, 2014b). These await final settlement through the Western Australian Government, and relate to Northcliffe Forest Park as the Gardner River forms the boundary between the two agreement areas.

The originator of Northcliffe Forest Park, George Gardner OAM, was a passionate advocate and researcher of Noongar culture. The legacy of George Gardner and Northcliffe Forest Park links Noongar and European history for the Northcliffe community, Manjimup Shire and Western Australia.

<p>Objective</p> <p>Conserve Aboriginal heritage and cultural resources in Northcliffe Forest Park.</p>
<p>Management Actions for the Northcliffe Forest Park Management Committee and Shire of Manjimup</p> <ol style="list-style-type: none"> 1. Comply with the Aboriginal Heritage Act 1972. 2. Ensure all known Noongar sites in the Park are registered. 3. Liaise with local Noongar Elders and people to conserve Noongar sites and investigate the potential existence of further sites. 4. Liaise with the South West Boojarah and Wagyl Kaip Southern Noongar Native Title agreement groups regarding the boundary between the two claim areas being near or alongside Northcliffe Forest Park, and the opportunities for the Forest Park as a meeting place. 5. Consider the opportunity to develop a formal Noongar meeting place in the Park for the use of the Noongar and wider community and visitors, and programs to interpret Noongar culture for the community and visitors. 6. Liaise with local Noongar Elders and people to develop information about the Noongar History of the Park and area for the community and visitors.

26 European Heritage

European people came to the Northcliffe area first as seafarers landing near what is now Point D'Entrecasteaux and exploring the immediate area, and later from 1826, overland from the settlement at King Georges Sound. The first European settlers in the area took up land in the 1860's for pastoral use (Crawford and Crawford 2003).

Northcliffe has a distinctive recent European heritage from its days as a group settlement area: In the early 1920's, the Western Australian Government chose the Northcliffe district as a 'group settlement' scheme area. The town of Northcliffe was proclaimed in 1924 and named in honour of the British press baron, Alfred Harmsworth, Lord Northcliffe, whose newspapers had promoted the group settlement scheme (Crawford and Crawford 2003).

The Northcliffe area was and continues to be part of the timber industry, which has historic interest. The Forest Park has stumps remaining from logging operations before 1950's when it was formalised as a reserve, and the adjacent railway reserve serving as reminders of the timber industry and its history.

The Northcliffe Town Dam on the Gardner River is of heritage value, it was decommissioned in the 1960's due to poor water quality. However, the town dam and its

water body are of interest as built and natural heritage, and worthy of conservation, interpretation and protected and utilised by the provision of well-designed access.

The railway reserve alongside the Park is of heritage value. While the reserve corridor and turnaround are not part of the Forest Park reserve, their proximity brings a sense of connection to the intrigue of the historic transport infrastructure and methods. It is worthy of access for visitor use and interpretation.

<p>Objective Conserve European and other Non-Aboriginal cultural heritage in Northcliffe Forest Park.</p>
<p>Management Actions</p> <ol style="list-style-type: none">1. Protect known cultural heritage sites and stories.2. Consult the Department of Water and Environment Regulation on the conservation and use of the historic Northcliffe Town Dam on the Gardner River.3. Collate current knowledge of sites in the Park and entering them on the Municipal Register.4. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide information for community and visitors on the European cultural heritage of the Park, including the railway reserve and timber industry it supported.

PART E. RECREATION

Northcliffe Forest Park, Reserve 23470, is vested in the Shire of Manjimup for the Purpose of both Parkland and Recreation (Landgate 2018).

'Parkland' is defined as land that has been reserved for the purpose of formal or informal sport or recreation and/or preservation of natural environments such as bushland, wetlands, river and coastal foreshore systems (DSR 2014).

Active 'recreation' is defined as activities engaged in for the purpose of relaxation, health and wellbeing or enjoyment with the primary activity requiring physical exertion, and the primary focus on human activity (Shire of Manjimup 2014).

The Department of Sport and Recreation (DSR) provides strategic direction as five-year plans to help deliver outcomes for the sport and recreation industry in WA, the current plan is known as SD6. SD6 provides direction and promotes the sport and recreation industry as a vital contributor to the lifestyles of Western Australians, from physical, health and social perspectives, at the individual, community and business level (DSR 2019). Northcliffe Forest Park and other nearby recreation attractions in the Shire of Manjimup are opportunities supported by this strategic State initiative.

Within the context of the broader South West region of Western Australia, Manjimup Shire is in the 'Southern Forests and Valleys Region', which is an initiative of the Warren Blackwood Alliance of Councils that the Shire of Manjimup shares with the adjoining Shires of Bridgetown-Greenbushes and Nannup (WBAC 2016). Tourism is a major focus of this regional development initiative.

Manjimup Shire's attractions include national parks, rivers and estuaries, coastal landscapes, tall forests, picturesque towns and settlements, wineries, restaurants and festivals and events (Shire of Manjimup 2017a). Tourism is one of the predominant industries of the Shire with annual visitor numbers to the Shire, averaged over 2015/16/17, were 210,200 people from intrastate, interstate and international sources (WBAC 2016; Tourism WA 2018).

The economic value of recreation and tourism in the area between Manjimup and Walpole was determined to be approximately \$62 million dollars annually in the early 2000's, which could be attributed to nature-based activities, the natural environment and the attraction of tall forests (DEC 2012; Carlsen and Wood 2004). Northcliffe Forest Park and its natural attractions and facilities can help support the demand for natural experiences and benefit the Northcliffe community through the resultant economic activity (DEC 2012; WBAC 2016; Shire of Manjimup 2017a).

27 Recreation Opportunities

Northcliffe Forest Park's landforms, vegetation and habitats characterise the Southern Forests and Valleys Region of the Western Australia's South West, and within that the Shire of Manjimup and Northcliffe town and district. Northcliffe is synonymous and characterised by its place in the forest and nearness to the spectacular wild lands of D'Entrecasteaux National Park and its coastline.

Northcliffe Forest Park has excellent recreation values and opportunities (Figure 6):

- tall forest and small river valley experiences right next to Northcliffe town;
- seasonal natural experiences of plants, animals, river and creeks, and ecological communities;
- vehicle access through roads and tracks suitable for 2-wheel drive vehicles
- non-motorised access as walk trails, bicycle trails, horse trails, Bibbulmun Track and the Munda Biddi Trail;
- built infrastructure at three picnic sites, the Northcliffe Visitor Centre and the historic town dam;
- marroning in season; and,
- cultural experiences within and adjacent as the Northcliffe Pioneer Museum, railway reserve and 'The Understory' park.

Visitors are attracted by the Forest Park's proximity to Northcliffe town as an immediate nature-based recreation experience and the Bibbulmun Track and Munda Biddi Trail as conduits through the district.

The annual Karri Cup Mountain Bicycle event starting and finishing in Northcliffe town uses part of the Munda Biddi Trail in Northcliffe Forest Park.

The Northcliffe Visitor Centre in the corner of the Forest Park on the edge of town is a primary source of information about the Park and other natural features nearby, in addition to being a gallery and sales outlet for local craftspeople.

In the lead up to the development of this plan, some consideration was given to a potential upgrade of the Town Dam water body for enhanced recreation, this concept would require careful consideration and consultation, and would form part of a focussed management plan for the restoration of the water body and dam infrastructure (see section 16 *Hydrology, Catchment and Water Quality*).

28 Access

Access into Northcliffe Forest Park consists of public roads for vehicles and horse-riding, firebreaks for management vehicles and horse-riding (Figure 6), and tracks and trails for walking and mountain biking (Figure 7). Access to any part of the Park is also available by walking through the bush.

Some confusion exists in the naming of access types. Terms such as track and trail are often interchangeable given that many well-established access ways have well-accepted names including the Bibbulmun Track, the Munda Biddi Trail and the Bardi Creek Trail. In these cases, 'track' and 'trail' are used for walking access, and 'trail' for mountain bicycle access. For the purposes of this plan, other than when describing a named access, 'track' means walking access and 'trail' means mountain bicycle, horse or shared-use access. Public vehicle access refers to roads, and management access relates to roads and firebreaks.

Muirillup Rd intersects the Park east west through the centre, and Boorara Rd forms the southern boundary. Vivers Rd cuts through the Park south off Muirillup Rd immediately east of Acacia Drive, as an access to private property over Gardner River. Smiths Rd enters the Park in the northeast across the Gardner River to adjoin George Gardner Dve (Figure 7).

The main road entrance to the Park is along George Gardner Drive, off Wheatley Coast Rd north of Northcliffe townsite, past the recreation ground. George Gardner Dve is two-way as far as the Hollow Butt picnic site, where it becomes one-way to the Town Dam near Muirillup Rd. Acacia Dve is a two-way gravel road that links Muirillup Rd south west to Boorara Rd via the Acacia picnic site (Figure 7).

George Gardner Dve is constructed outside road reserve boundaries within the Park, Vivers Rd is constructed outside part of the road reserve within the Park and Acacia Dve is not a gazetted road (Figure 6, Figure 7). The northern section of the Park has road reserves that have not been developed, which are considered part of the Park (Figure 6, Figure 7).

Parking areas are associated with picnic sites at the Hollow Butt tree, Town Dam and Acacia – which is the trailhead for the Gardner River Adventure Trail.

Firebreaks as management access tracks occur along the western boundary of the Park south of Muirillup Rd to Boorara Rd, along the northern boundary west to around State Forest No. 40, and near the southern boundary parallel to Boorara Rd. These tracks form boundaries of the cell system for bushfire management and the hazard reduction burn programme (see *24 Bushfire*). These management tracks are also excellent walking, bridle and mountain bicycle tracks/trails.

Some sections of the Park boundary do not have management or firebreak access, provision of these access ways should be considered, if terrain and conservation impacts are low, for management and non-motorised recreation use (see *24 Fire*).

At the time of the preparation of this plan, many of the roads, tracks, trails and firebreaks are in poor to moderate condition and the signage inconsistent and mostly inadequate. They require attention to bring them up to an acceptable and appealing standard and walking track grade and classification level, routine maintenance to keep their condition to a high standard, and signage developed and placed to a standard (see *40 Information, Interpretation and Education*). The bicycle trails and walking tracks require routine and efficient maintenance works such as trimming, slashing, grading, tree fall removal and erosion mitigation to maintain agreed and acceptable standards.

Objective

Maintain the road, track and trail network of Northcliffe Forest Park for the enjoyment and safety of community and visitors, which does not impact conservation, cultural and other values.

Management Actions

1. Maintain public vehicular roads, management access and firebreaks as part of the Shire of Manjimup works programme for Northcliffe Forest Park.
2. The Northcliffe Forest Park Management Committee in consultation with the Shire to review the one-way and two-way status of the relevant sections of George Gardner Dve, in relation to relevant standards and ease and safety of use and maintenance of these internal roads.

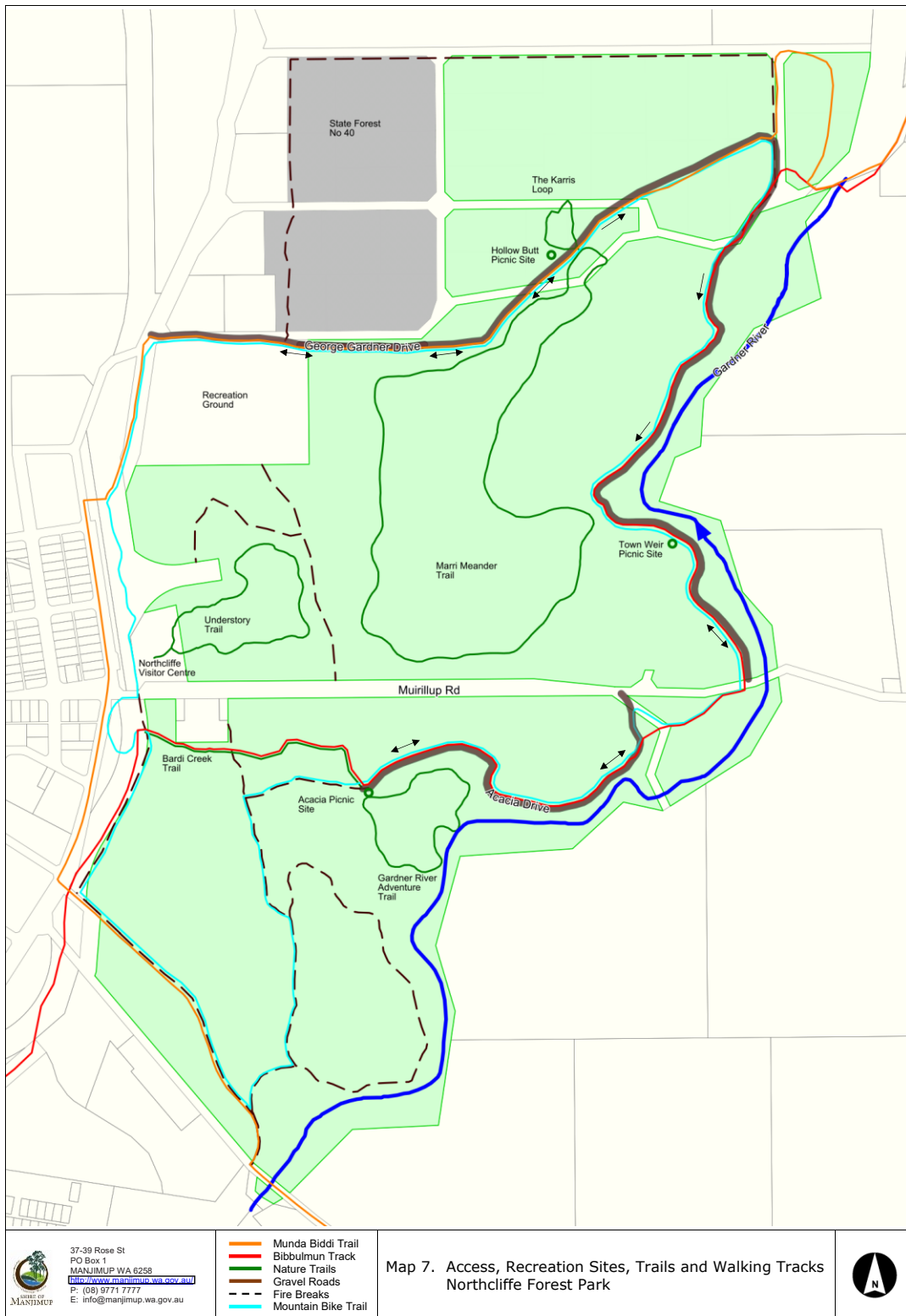


Figure 7. Access, Recreation Sites, Trails and Walking Tracks, Northcliffe Forest Park

29 Activities

A range of recreation and education activities is available in Northcliffe Forest Park. The interest and input of the community over many years has developed nature, art, mountain bicycle and supported horse riding on roads and firebreaks, and recent placement of the award-winning Northcliffe Visitor Centre and Gallery building on Muirillup Rd near the edge of the Park adjacent to Northcliffe town. The activities available in the Park are enhanced by its close proximity to town, and culturally and physically linked Northcliffe Recreation Grounds, railway reserve and Northcliffe Pioneer Museum that lie on the western edge.

Bushwalking

Walking tracks (or trails) are graded according to the Australian Walking Track Grading system, which is a voluntary walking track standard based on the *Australian Standard 2156.1 – 2001 Walking Tracks – Classification and Signage*. It is a nationally consistent system designed to grade the difficulty of the track walking experience primarily for people who are not regular or experienced bushwalkers. The Australian Standard is for the technical classification of the walk by land managers in designing walking tracks, and the grading system is aimed at informing people about the features of the track and in marketing and promotion of walking as a leisure activity (Government of Victoria N.D.; Australian Standard 2001).

The well-known and used Bibbulmun Track, which connects Kalamunda near Perth with Albany on the south Coast over a distance of 1003 km, traverses Northcliffe Forest Park. Northcliffe is a stopping point along the track and sits between two sections – Pemberton to Northcliffe and Northcliffe to Walpole; Northcliffe Forest Park contains parts of both sections (Figure 7).

Six walking tracks traverse Northcliffe Forest Park, which vary in length from 400 to 3500m (Shire of Manjimup 1999; Table 4, Figure 7).

Table 4. Northcliffe Forest Park Walking Tracks

Walk	Length (One way)		Class /Grade	Park Setting
	Metres	Hours		
Gardner River Adventure Trail	1100		3/3	Challenging trail off Acacia Dve starts and finishes at Acacia picnic site.
Bardi Creek Trail	1400		2/3	Easy to moderate walk through swampy country and across Bardi Creek, includes part of the Bibbulmun Track. Trailhead is at the back of then Northcliffe Pioneer Museum.
Town Dam Trail	500		2/2	This trail is included on some maps. However, it is not formally

Walk	Length (One way)		Class /Grade	Park Setting
	Metres	Hours		
				in place and should be removed from maps or put in place.
Marri Meander	3500		3/2	South from Hollow Butt picnic site, meanders through the centre of the Park through Marri dominated Forest, Marri Hut rest halfway along.
The Karris Loop	400		2/2*	North from the Hollow Butt picnic site and back via the large Karri trees.
Understory Art and Nature Trail	1200		2/2	Circuit from the Northcliffe Visitor Centre, features artworks of a range of media by local and other artists.
Bibbulmun Track (Pemberton to Northcliffe and Northcliffe to Walpole sections)			3/3**	From the northeast corner south along George Gardner Dve, across Muirillup Rd, along Bardi Creek Trail to town. The Track then runs south along the railway reserve leaving Northcliffe.

* Needs to be upgraded to Class 1/Grade 1. ** Bibbulmun Track, as a very long track through a range of environments does not fit all distance and conditions criteria in Class 3/Grade 3.

Access for all is available at the Hollow Butt picnic site and the The Karris Loop. These sites offer infrastructure and trails on level ground, including toilet access.

The walking tracks and mountain bicycle trails (next section) are a significant part of the character and availability of Northcliffe Forest Park, adding value to Northcliffe. The trails symbolise the community's love for the Forest Park, their values and input into the Park, and their keenness to share it with visitors.

Quality walking tracks strike a balance between ease of management and maintenance and amenity and intimacy with the natural environment. This balance ensures user safety and enjoyment is maximised.

Objective

Provide a range of quality bushwalking opportunities through a range of landforms and plant communities for nature, art and cultural expression, which do not impact conservation and other Park values.

Management Actions

1. Aim to provide walking tracks that meet class and grade standards, including provision for people with disabilities.
2. The Northcliffe Forest Park Management Committee to audit the walking track network to gain an understanding of the repair and maintenance needs, including routes, terrain, surfaces, additional infrastructure as steps, bridges, boardwalks etc, signage and interpretation.
3. The Northcliffe Forest Park Management Committee seek funding and/or resources that will conduct *Phytophthora* dieback disease assessments of the track network.
4. If diseased sections are found, mitigate through closure or track maintenance to ensure disease hygiene.
5. Aim to minimise risks to track users through class and grade standards being met, and high-quality infrastructure and maintenance.
6. Aim to ensure alignments and grades have minimal impact on conservation and other Park values, while striking a balance with ease and efficiency of management.
7. Aim to ensure alignment and end points are in safe places and complement and or link up with other parts of the network, notable features, and with trails and paths outside the network – essentially Northcliffe town.
8. Encourage clean walking boots, horse's hooves, vehicle tyres and under body for dieback disease hygiene.
9. The Northcliffe Forest Park Management Committee seek funding and/or resources that will standardize signposting, to indicate distance, time needed, degree of difficulty and features.
10. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide pre-visit and centralised information to assist people to make choices about which parts of the track network best suits their needs and interests.
11. The Northcliffe Forest Park Management Committee to encourage and facilitate the continuation and enhancement of the Understory Nature and Arts Trail program, consider extending it to other parts of the network.
12. Continue to support the Bibbulmun Track sections in the Forest Park.
13. The Northcliffe Forest Park Management Committee seek funding and/or resources that will maintain walking tracks as part of the Shire of Manjimup works programme for Northcliffe Forest Park with the input of the community.
14. Liaise with DBCA regarding the maintenance of the Bibbulmun Track and Munda Biddi Trail in the Park.

Mountain Biking

All-terrain cycling or mountain biking is one of Australia's fastest growing recreational, sport and tourism activities. In Western Australia, the *Western Australian Mountain Bicycle Strategy*, West Cycle's *Our Bicycle Plan 2014-2020*, *The South West Mountain Bicycle Master Plan*, and the Shire of Manjimup *Local Bicycle and Footpath Plan 2017-2027* provide background and planning for this opportunity (Shire of Manjimup 2017c).

Northcliffe Forest Park has two mountain bicycle trails:

- Munda Biddi Mountain Bicycle Trail. The Pemberton to Northcliffe section loops through the north-eastern corner of the Park before following George Gardner Dve into town. The Northcliffe to Walpole section follows Windy Harbour Rd, before again

entering the Park along the firebreak parallel to Boorara Rd, leaving via Boorara Rd (Figure 7).

- Northcliffe Forest Park Mountain Bicycle Trail. A 7,700m circuit that starts and finishes next to the Northcliffe Pioneer Museum just south of the corner of Wheatley Coast Rd and Muirillup Rd. The trail takes in a large part of the Park, south to parallel with Boorara Rd and then north to the north-eastern corner before returning along the rail reserve (Figure 7).

Mountain biking and conventional road cycling are important to the Northcliffe community as recreation activities and as an economic driver for the district. The annual Karri Cup mountain bicycle event starts and finishes at the Northcliffe Recreation Ground, it consists of a 100 km four stage race, a 50 km three stage race and a 25 km single stage social ride. Stage one of the course leaves the Recreation Grounds via George Gardner Dve and Smith Rd in Northcliffe Forest Park.

Mountain biking can also conflict with other users of the natural landscape and conservation and cultural values if not managed carefully and considerately. Among the most serious concerns are conflict on multi use tracks and trails, unauthorised off track and new track developments, and the spreading of phytophthora dieback disease (DEC 2012).

Objective

Provide opportunities for bicycle riding that minimise the impact on other Park values and other users.

Management Actions

1. The Northcliffe Forest Park Management Committee seek funding and/or resources that will facilitate cycling/mountain biking on public access roads and tracks in the Park as shown on Figure 7.
2. The Northcliffe Forest Park Management Committee to maintain the Northcliffe Forest Park Mountain Bicycle Trail to a quality standard, and promoting its presence and use through on and off-site information.
3. Support the Munda Biddi Mountain Bicycle Trail and Karri Cup mountain bicycle event as mountain biking opportunities that use Northcliffe Forest Park.
4. The Northcliffe Forest Park Management Committee seek funding and/or resources that will educate mountain bicyclers about the potential impacts on the environment and other Park users from cycling and mountain biking, and actions that can be taken to minimise these impacts.

Horse Riding

Horse-riding is permitted on Park roads and firebreaks otherwise designed for vehicle traffic, but not on walking tracks. The predominant current use is on public Park roads albeit limited, as there are not many who use the opportunity (Shire of Manjimup 1999). It should be noted that the tracks and trails available for horse riding are not formal horse-riding trails, they are multi use, which includes horse riding.

Horse-riding on walking tracks has been discouraged in the past, and regardless usually not sought by riders due to potential conflict with other users, narrow track apertures, difficult and fragile terrain, steps, boardwalks and bridges.

Horse-riding can cause impacts to conservation and cultural values, including the spread of Phytophthora dieback disease, erosion and damage to sensitive habitats. Notwithstanding, horse riding has a place as a valid recreational activity in the Park in places where it can be ecologically sustainable and not conflict with other users. Horses also have a role in search and rescue functions where coverage efficiency and viewing height are advantages on horseback.

<p>Objective Support horse riding in the Park in places that minimise impact on Park values and on other users.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Support recreational horse riding on public and management vehicle roads and firebreaks in the Park. 2. Prohibit recreational horse riding on walking tracks, mountain biking trails, and through natural bushland. 3. Provide information about the horse-riding opportunities and the environmental constraints and hygiene measures to be followed by horse riders

Recreational Driving

Recreational driving through Northcliffe Forest Park is an easy and popular way to experience the Park’s natural features as an introduction and to access the walking tracks and picnic sites. The public roads are gravel surfaced and suitable for two-wheel drive vehicles (Figure 7). Management tracks and firebreaks are not available for recreational driving. Vehicles used for recreational driving must be licensed, and driven by people with valid relevant motor drivers’ licences.

The public roads traverse most of the landforms and plant communities of the Park, covering the north-eastern and eastern sections of the Park north of Muirillup Rd and through the centre of the southern section south of Muirillup Rd.

George Gardner Dve is two-way from Wheatley Coast Rd to the Hollow Butt picnic site, and one-way from the Hollow Butt picnic site to the Town dam picnic site, and two-way from the Town Dam picnic site to Muirillup Rd. Acacia Dve is two-way along its extent from Muirillup Rd to Acacia picnic site.

Parking is available at the Hollow Butt, Town Dam and Acacia picnic sites. Parking areas are of adequate size and design for current and projected use. However, they require repair and maintenance of surfaces and bollards to bring them to an acceptable standard.

Public road surfaces, culverts, spoon and table drains, and batters are in moderate to poor condition at the time of the preparation of this plan. Repair and maintenance works are required to bring them to an acceptable standard.

<p>Objective Provide opportunities for recreational driving that do not conflict with Park values or other users, or cause damage or injury to users and their vehicles.</p>
<p>Management Actions</p>

1. Maintain the current public road and track network.
2. Maintain George Gardner Dve as two-way from Wheatley Coast Rd to the Hollow Butt picnic site, one-way from the Hollow Butt picnic site to the Town Dam picnic site, and two-way from the Town Dam picnic site to Muirillup Rd.
3. Maintain Acacia Dve as two-way from Muirillup Rd to Acacia picnic site.
4. The Northcliffe Forest Park Management Committee seek funding and/or resources that will repair damaged gravel road surfaces, spoon and table drains, culverts and batters on George Gardner Dve and Acacia Dve.
5. The Northcliffe Forest Park Management Committee seek funding and/or resources that will maintain good vision and clearance to an acceptable standard in places where vegetation is dense such as through Karri forest, carefully cut back the vegetation along the sides of the public roads with care taken to maintain the intimate and inviting experience of driving through the forest.
6. Repair parking area surfaces and replace fringing bollards (see next section *Picnicking and Day-use*).
7. Base material used for repair and maintenance of roads, tracks and trails must be dieback free.
8. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide an information map that shows public roads and parking areas at picnic sites, as well as other tracks. Provide an information map that shows public roads and parking areas at picnic sites, as well as other tracks and trails, to assist Park users with recreation activity planning.

Day Use and Picnicking

Three developed day use and picnicking sites lie in the Park, the Hollow Butt site on George Gardner Dve in the north-eastern section; Town Dam on George Gardner Dve just off Muirillup Rd in the eastern section; and the Acacia site on Acacia Dve in the southern section (Figure 7).

The sites are designed for day use and picnicking rather than overnight camping, although there is evidence that they are used occasionally for vehicle-based camping. The sites offer a range of facilities (Table 5).

Table 5. Current facilities at day-use/picnicking sites.

Site	Parking	Toilet	Tables and seats	Gas BBQ	Wood BBQ	Trail access
Hollow Butt	✓	✓	✓	✓	x	✓
Town Dam	✓	x	✓	x	✓	✓
Acacia	✓	✓	✓	x	✓	✓

The Hollow Butt site features a large hollow butt Karri tree, one of the charismatic aspects of the Karri forest. The site consists of an open area fenced by bollards with a timber platform at the base of the hollow butt tree, a small timber information shelter, gas

barbeque, wood-fired barbeques, seating and tables. The Karris Trail loop exits and returns to the site. The pit toilet and the entrance to the Marri Meander Trail are across the other side of George Gardner Dve. Parking is on both the western and eastern sides of the site, separated from the site by timber bollards.

The Town Dam site sits inside a two-way loop on the southern end of George Gardner Dve across from the Town dam on the Gardner River. The site consists of a picnic table, seating, wood-fired barbeques, a fire ring, small wooden shelter, and access across the road to the Town Dam (Table 5). Parking is on the western loop and western side of the picnic site, separated by timber bollards. The road loop around the site separates the dam from the picnic area creating a mixed traffic area that could give rise to use conflicts, safety concerns and limits the value of natural and cultural experiences otherwise available at the site.

The short Town Dam access/trail is poorly defined and traverses sheet granite that is slippery when wet. The dam infrastructure is in poor condition and of limited use as access. Both the trail and access to view the dam require redesign and improved infrastructure to provide safe visitor access and enjoyment.

The Acacia site provides timber seating and picnic tables, wood-fired barbeques, a fire ring, a shelter with images of forest wildlife and a pit toilet a little away from the main site. The Gardner River Adventure Trail entrance is across Acacia Dve from the site. Parking is in a large area between Acacia Dve and the site, separated by timber bollards (Table 5).

The sites are in moderate to poor condition at the time of the preparation of this plan, and require redesign, redevelopment, improved facilities/infrastructure, repair and maintenance to bring them to an acceptable quality and to support projected increased use.

Table 6. Proposed recreation site facilities

Site	Parking	Toilet	Tables and seats	Gas BBQ	Trail access	Short-term camping
Hollow Butt	✓	✓	✓	✓	✓	x
Town Dam	✓	✓	✓	✓	✓	x
Acacia	✓	✓	✓	✓	✓	x

The use of fire rings at the three sites is consistent with current practice in the Park, and current practice in national parks nearby. However, there can be impacts from the use of camp and cooking fires, mainly the collection of firewood and from fire escape leading to localised damage and/or bushfire (DEC 2012). Notwithstanding, the use of camping and cooking fires can add greatly to the experience and with minimal impact on conservation values when contained in approved structures, had during suitable fire weather conditions, and fuelled with wood supplied from outside the Park.

The Noongar community may wish to be involved in the expression of their culture as part of the recreation theme. Involvement may include the development and use of a Noongar meeting place development at one of the existing day use sites, or a new site such as near the Northcliffe Community and Visitor Centre, where it could contribute to other cultural themes nearby (see *25 Noongar Heritage*).

<p>Objective</p> <p>Provide picnicking and day-use sites and facilities in keeping with the Park environment to enhance visitor enjoyment and education about Park values.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. The Northcliffe Forest Park Management Committee seek funding and/or resources that will provide day-use sites in line with industry design standards, site capability, environmental impact assessment and Table 6. 2. The Northcliffe Forest Park Management Committee seek funding and/or resources that will redesign all sites to industry standard for parking, toilet access, shelter design and access, bollard placement, trail access, gas barbeque provision, tables and seats, information and signage. 3. Maintain wood-fired barbeques at recreation sites until gas fire barbeques are installed at all three sites, then review the provision of wood-fired cooking facilities. 4. Consider forest evocative rustic Jarrah timber extensively for facility and infrastructure materials (rather than treated pine), as has been used at Boorara Tree by the Department of Biodiversity, Conservation and Attractions (see <i>39 Information, Education and Interpretation</i>). 5. Encourage community involvement in the upkeep of the Park, with the Shire of Manjimup. 6. The Northcliffe Forest Park Management Committee seek funding and/or resources that will include redesign and development of the day-use /picnic site. 7. Liaise with the Noongar community regarding their involvement in recreation sites, including the concept of a meeting place, and the expression of their culture for the benefit of their community and the local and visitor community (see <i>25 Noongar Heritage, and Education</i>).

Camping

Camping is not permitted in Northcliffe Forest Park. There is provision for overnight stopping in fully self-contained recreational vehicles at the Northcliffe Visitor Centre.

Camping sites are available in other sites in and near Northcliffe. Campers should be encouraged to use these facilities, which are designed for camping with good facilities and with safety, amenity and ease of use in mind.

<p>Objective</p> <p>Camping is not permitted in Northcliffe Forest Park.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Provide information on preferred camping facilities in and near Northcliffe. 2. Include no camping information and signage as appropriate.

Fishing

Marroning is a popular seasonal fishing activity in the Northcliffe area, including the Gardner River, which flows through Northcliffe Forest Park. The Common Marron (*Cherax caneii*) is a large freshwater crayfish endemic to the extreme south west of Western Australia; the name 'marron' is a Noongar word for this animal (Bindon and Chadwick 1992).

Marroning and all recreational fishing is managed by the Department of Primary Industries and Regional Development throughout WA, in accordance with the Fish Resources Management Act. Marroning requires a licence for a short open season usually over summer; the 2019 open season was from 12 noon on January 8 until 12 noon on February 5 (DPIRD 2018).

Other recreational fishing in the Gardner River may include for the native Freshwater Cobbler (*Tandanus bostocki*), and the introduced Brown Trout (*Salmo trutta*) and Rainbow Trout (*Oncorhynchus mykiss*) that have been introduced into the river in the past and may be still present in small numbers.

The section of the Gardner River in Northcliffe Forest Park is not accessed extensively for marroning and other fishing, although unmanaged access to fishing sites can cause environmental degradation of riverbanks and foreshores, and sometimes lead to litter and other problems associated with the activity. Notwithstanding, the marroning season is short and the section of the Gardner River in the Park is small, such that problems are likely to be minimal.

Objective

Support sustainable marroning and fishing on the Gardner River in Northcliffe Forest Park such that it does not lead to environmental degradation.

Management Actions

1. Northcliffe Forest Park Management Committee to monitor the access by people fishing along the Gardner River for signs of damage or other problems.
2. Liaise with the Department of Primary Industries and Regional Development regarding the management of recreational fishing in the Park.

Swimming

The Northcliffe Town Dam holds a water body that may be deep enough for swimming, however the dark water is not necessarily inviting and may hide snags and other underwater obstacles. The remainder of the Gardner River in the Park is narrow and often fast running, which does not lend to swimming. Given these constraints, swimming as a recreational activity is discouraged. However, if the restoration plan for the water body found that swimming and other activities were acceptable, they could be considered (see section 16 *Hydrology, Catchment and Water Quality*).

Objective

Discourage swimming in the Gardner River as a recreational activity.

Management Actions

1. Signpost the Northcliffe Town Dam displaying the 'no swimming' symbol.

- | |
|---|
| 2. Include no swimming advice in public information about Northcliffe Forest Park and the Town Dam. |
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Canoeing

The only water body potentially suitable for canoeing in the Park is the Town Dam on the Gardner River. The remainder of the Gardner River is too narrow and snag-filled to offer suitable or attractive canoeing or kayaking.

Many high-quality canoeing and kayaking waterways exist in the area surrounding Northcliffe, principally in State forest and national parks including the Warren and Donnelly Rivers, Lower Gardner River, Lake Maringup and Lake Jasper. These waterways should be conveyed to the community and visitors as most suitable for canoeing and kayaking experiences.

Objective
Discourage canoeing and kayaking in the Gardner River as recreational activities.
Management Action
Provide no canoeing or kayaking advice in public information about Northcliffe Forest Park and the Town Dam, include better alternative options near Northcliffe.

Special Events

Northcliffe Forest Park is an ideal venue for special events. Some popular and acclaimed scheduled events already occur, including the Karri Cup mountain bicycle event and the Understory Art and Nature experience.

Northcliffe Forest Park's proximity to Northcliffe town, Northcliffe Recreation Grounds and with good access around and through, lends availability and atmosphere to special events.

Special events with nature conservation, nature-based recreation and cultural history themes aligned with Park values, and carried out with Park values and other Park users in mind, are deserving of support.

Objective
Support special events in Northcliffe Forest Park, which are sustainable and planned and conducted according to Park values and mindful of other user groups.
Management Actions
1. Support events subject to approval by the Northcliffe Forest Park Management Committee in addition to the Karri Cup and Understory Arts and Nature events.
2. Ensure events approved are held in areas appropriate for the sustainability of Park values and considerate of other Park users.
3. The Northcliffe Forest Park Management Committee to liaise with the Noongar community to develop Noongar theme events that use the meeting place and expression of Noongar culture.
4. Consider formalising the meeting place and Community and Visitor Centre as an education and events precinct of Northcliffe Forest Park.

30 Park User Safety

The Shire of Manjimup takes the safety and security of visitor and community users of its parks and reserves seriously. It has a responsibility to consider the safety of Park users, and aims to minimise the potential for injuries and misadventure. This responsibility is balanced with the need to maintain the natural appeal and conservation values of the Park such that the experiences and enjoyment of nature are not diminished.

The Shire of Manjimup Risk Management Policy is designed to achieve best practice in the management of all risks that may affect the Shire, its customers, people, assets, functions, objectives, operations or members of the public (Shire of Manjimup 2015a). Northcliffe Forest Park as a public place and its facilities and associated risks to users will be managed according to this policy and the associated Shire of Manjimup Emergency Arrangements Plan (Shire of Manjimup 2013).

Visitor facilities as access roads, tracks, trails, day use and picnic sites, buildings, signage and other infrastructure will be planned, designed and developed with visitor safety and security in mind. Issues such as bushfire and other infrequent natural disasters will be managed and coordinated with other agencies and organisations including the Department of Fire and Emergency Services, WA Police Service, Department of Biodiversity, Conservation and Attractions, Northcliffe Bushfire Brigade and St John Ambulance.

Feral European Honey Bees (*Apis mellifera*), Bull and Jack Jumper Ants (*Myrmex spp.*), Kangaroo Ticks (*Amblyomma triguttatum*), Dog Ticks (*Rhipicephalus sanguineus*) and March Flies (Family *Tabanidae*) are common in the natural bushlands of the south west of Western Australia, including Northcliffe Forest Park. These invertebrates are capable of stings and bites that may adversely affect some people through allergic reaction, which in severe cases can be life threatening, as such precautions should be made by Park users.

Mobile phone coverage is excellent in most parts of the Park, with some of the river valley being diminished. This brings communication ability to most Park users, which can assist in the reporting and management of incidents.

<p>Objective</p> <p>Minimise risk to Park user safety and security, while maintaining a range of experiences of the Park's values.</p>
<p>Management Actions</p> <ol style="list-style-type: none">1. The Northcliffe Forest Park Management Committee to audit roads, tracks, trails, recreation site infrastructure, building signage and other facilities to gauge conformity with risk management policy and standards.2. Apply industry standards and appropriate expertise and quality of materials in the design and construction of facilities and structures.3. Provide information on natural hazards and risks associated with the Park to help users plan and conduct their recreation activities, such as river and Town Dam hazards, bushfire danger, feral bees, snakes and ticks.4. Consider the welfare of Park users in the event of a bushfire or other emergency.

5. Consider the development of an emergency Management Strategy for Northcliffe Forest Park, within the framework of the Shire's Emergency Management Arrangements.
6. Liaise with WA Police Service, Department of Fire and Emergency Services, Department of Biodiversity, Conservation and Attractions, Northcliffe Bushfire Brigade and St John Ambulance on procedures in the event of emergencies in the Park. Liaise with WA Police Service, Department of Fire and Emergency Services, Department of Biodiversity, Conservation and Attractions, Northcliffe Bushfire Brigade and St John Ambulance on procedures in the event of emergencies in the Park.

31 Visitor Fees

The use of the Park for the enjoyment of its values by community and visitors is free, and fees do not apply. This free use meets the Park vision and the wishes of the Shire of Manjimup.

Objective

Maintain the Park as a free day-use recreation destination for the benefit of the community and visitors.

Management Actions

There are no management actions for this section

32 Commercial Operations

Commercial operations compatible with Park values and not impacting other Park users are supported. Such operations include small coach and 4x4 tours, use of day use sites for small groups, commercial use of the Bibbulmun Track and Munda Biddi Trail, mountain bicycle tours, education groups, the Understorey Arts and Nature Experience, and horse-riding tours.

Quality commercial operations have the ability to contribute to the local economy and experiences of local communities and visitors. Development of increased tourism opportunity is important to the communities of the southwest and Warren Blackwood Regions and the Shire of Manjimup (Shire of Manjimup 2017a).

The Shire of Manjimup considers commercial operations, with permission sought in writing. The Northcliffe Forest Park Management Committee working with the Shire will need to develop clear policy and guidelines that are adopted by Council in order to guide management, expenditure and revenue resulting from any commercial operation within the Park. Commercial operations are to adhere to the Shire of Manjimup policies and this management plan.

Objective

Support commercial tourism and cultural activities that are compatible with Park values and do not impact upon other Park users, to extend the range of nature-based recreational experiences provided by the Park and the Shire of Manjimup.

Management Actions

1. Consider commercial operations that can enhance visitor experiences and are compatible with Park values.

33 Domestic Animals

Domestic animals are generally not permitted in Northcliffe Forest Park, with the exception of dogs on leads or under the immediate control of an owner, guide and care dogs, and horses under the control of a rider. Domestic animals, mainly dogs, for the purposes of exercising off-lead are not permitted. Horses and domestic dogs are not permitted on walking tracks and bicycle trails.

Dogs and cats, feral or unmanaged domestic, can impact and disrupt people's enjoyment of the natural environment by directly preying on native animals, leaving scents that repel native animals, leaving faeces in sensitive places, and interfering with other park visitors (DEC 2012).

Guide and care dogs are of vital importance to some people; their impact on park values and people's enjoyment is limited if at all. Their presence in the Park is welcomed when accompanying owners.

Objective

Protect the Park and visitors from the problems associated with domestic animals.

Management Actions

1. Permit dogs on leads, guide or care dogs accompanying owners, and horses under the control of riders, in recreation sites and on vehicle roads and firebreaks only, not walking tracks or bicycle trails.
2. Prohibit all other domestic pets from the Park.

PART F. RESOURCE USE

34 Basic Raw Materials and Minerals

Basic raw materials such as gravel, quartz aggregate and sand are commonly taken from bushland areas, principally from gravel reserves in Manjimup Shire.

Mining for minerals has not occurred in Northcliffe Forest Park. However, minerals (principally mineral sands) do occur in other parts of the greater Northcliffe area and have been subject to exploration activities (DEC 2012).

As a Shire vested non-A Class Reserve, Northcliffe Forest Park could be subject to mineral exploration and mining under the *WA Mining Act 1978*. However, prospective mineralisation is unlikely given the Park's geological and landscape position, which together with its significance to the community, limits the likelihood of mineral exploration and mining.

Gravel and quartz aggregate for road making has been sourced from the Park in the past, from an extraction pit adjacent to Acacia Dve in the southern section of the Park. This site has been rehabilitated (P Owens pers. comm.). The site is infested by phytophthora dieback disease (Shire of Manjimup 1999), reinforcing the requirement for its closure to access and restoration.

<p>Objective Minimise the impacts of raw materials and mineral exploration and extraction from the Park.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. In the unlikely event of mineral exploration being proposed, provide formal advice to the Environmental Protection Authority and Department of Mines, Industry Regulation and Safety. 2. Ensure that any mineral exploration or mining activities that might occur are subject to Government Acts and policies and are strictly adhered to for proper operating procedures.

35 Public Utilities and Services

Public utilities include telephone, electricity, gas and water services provided to public and private properties adjacent to and near the Park. The utilities usually follow public roads within road reserves, and this the case along Muirillup Rd, Boorara Rd and Windy Harbour Rd adjacent to the Park.

Northcliffe Town Dam on the Gardner River has old water delivery piping and electricity cabling present along the river downstream from the facility, within Northcliffe Forest Park. As it is no longer needed for water delivery due to the dam being decommissioned, liaison with the Shire and Department of Water and Environment Regulation will help decide whether it is retained for potential alternative uses or removed.

<p>Objective Minimise the impact of public utilities and services on Park values.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Apply Shire of Manjimup planning, development and community consultation processes in the assessment of any utilities or services proposed in the Park. 2. Northcliffe Forest Park Management Committee to liaise with the Shire regarding the need and potential removal of utilities and services for Northcliffe Town Dam. 3. Ensure that services are placed below ground and in existing utilised road reserves wherever possible.

36 Beekeeping

No formal commercial keeping of European honey bees (*Apis mellifera*) or apiary sites exist within the Park. Beekeeping may occur on private properties adjacent to the park, with bees travelling to and from the Park for nectar and pollen from adjacent hives.

While important for commercial and amateur honey production, European honeybees are capable of stinging and injecting venom. Some people are allergic to bee stings, which often cause severe or even life-threatening responses requiring emergency medical care.

Commercial and private beekeeping by the use of hives in the Park is not compatible with Park values due to the potential for impacts on native flora pollination and the well-being and safety of Park users.

Feral European honeybees occupy hollows in large trees with feral hives common in forests and woodlands across the southwest. This occupation is direct competition for nesting and roosting spaces by native mammals, birds and in some cases native bees. European honeybees are an introduced pollinator, competing with native vertebrate and invertebrate pollinators for nectar and potentially interrupting complex pollination systems (Scheltema 1981; DEC 2012).

<p>Objective</p> <p>Minimise the impacts of introduced honeybees on Park values and Park users.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Prohibit the keeping of European honeybees or hives in the Park. 2. The Northcliffe Forest Park Management Committee seek funding and/or resources that will monitor the use of tree hollows by honeybees in the Park. 3. Consider the control or removal of feral honeybee hives in tree hollows where feasible.

37 Timber, Firewood and Plant Material Use

Fallen leaves, branches, timber and dead plants form a vital natural part of the forest ecosystem. They provide mulch and biomass used and consumed by plants, animals and fungi, as key components and functions including as moisture saving mulch, and contribution to the carbon cycle.

The removal of timber, firewood and plant material from the Park is generally prohibited, with some exceptions:

- for road, trail, firebreak or fence maintenance works that require the removal of standing or fallen timber in line with *Environmental Protection Act 1986* as amended and its Regulations;
- the removal of exotic plants as approved by the Shire of Manjimup;
- as part of hazard reduction and prescribed burning; and
- the use of branch material removed as part of asset maintenance above as brushing and mulch for site rehabilitation.

<p>Objective</p> <p>Protect Park values from the removal of timber, firewood and plant material.</p>
<p>Management Actions</p> <ol style="list-style-type: none"> 1. Support the removal of fallen and standing plants where needed as part of road, track, trail, firebreak, fence and recreation site maintenance, as listed above, according to best practice and <i>Environmental Protection Act 1986</i> as amended and Regulations.

2. Allow the removal of exotic plants to maintain the natural integrity of the Park, as approved by the Shire of Manjimup and the Northcliffe Forest Park Management Committee.
3. Allow the use of native plant branch material removed as part of maintenance works for rehabilitation of degraded sites as part of rehabilitation works by or approved by the Northcliffe Forest Park Management Committee.

38 Water Resources

The Department of Water and Environment Regulation is responsible for water resource protection, management and licensing (DEC 2012), the Gardner River, although in Northcliffe Forest Park, falls within this jurisdiction. The Water Corporation of WA is responsible for the supply of water to the community and industry in Western Australia.

The Northcliffe Town Dam on the Gardner River provided the Northcliffe town water supply up until the 1960's (K McKeough pers. comm.). However, due to the dark colour of water caused by tannins and siltation, its use was discontinued as a potable water supply (Shire of Manjimup 1999), and a new spring-fed water resource was established a little to the east of the town dam (K McKeough pers. comm.), although this new resource has since proved unsuitable and also decommissioned (Government Printer 2016). Water for Northcliffe town is now trucked in from Pemberton (Water Corporation 2015).

Northcliffe Town Dam infrastructure remains as cultural history of interest to the Northcliffe Community and visitors, which will require ongoing management and maintenance for safe access and interpretation (see 16 *Water Catchment and Hydrology*).

Water resources for town water supply as controlled by the Water Corporation are unlikely to be a concern due to the closure of the source and unsuitability of the river water for domestic use. However, the water body of the dam does dry out during extended dry periods, which may lead to remedial works being required such as repair or maintenance of the weir to help maintain water depth.

Objective

Minimise the impact to Park values by water resource use.

Management Actions

1. Liaise with the Department of Water and Environment Regulation regarding the ongoing use and maintenance of the Town Dam weir and water body.
2. Request that the Department of Water and Environment Regulation and the Water Corporation of WA liaise with the Shire of Manjimup regarding any changes to the status of the water supply from the Northcliffe Town Dam or other sections of the Gardner River or Forest Park streams, should they occur.
3. Maintain quality access to the Town Dam weir and water body for recreational use.

PART G. COMMUNITY INVOLVEMENT

39 Information, Interpretation and Education

Northcliffe Forest Park provides a valuable opportunity to engage the community and visitors in its wonders. The availability of the Park, visibly adjacent to Northcliffe townsite and accessible through road and trail access, presents many ways to learn about its landforms, forests, wetlands and river ecosystems as well as cultural heritage and creative interpretation of nature.

Effective information, interpretation and education materials and programs are vital to enrich people's experiences, provide effective messages to help people's use of the Park, present the community and Shire of Manjimup as quality stewards of the natural environment, and to help achieve park management objectives.

A significant public information, interpretation and education asset is the Northcliffe Visitor Centre, which sits in the Park directly across from town. This asset is a prime base for physical and philosophical access to the Park through adjacent trail and tracks and information, interpretation and education.

The process of information, interpretation and education delivery consists of three parts (DEC 2012):

1. Information. Provides details of Park access, facilities, activities, features and regulations. Includes off-site promotion, websites, social media and brochures directly about the Park or references to it where the focus is on an indirect feature – e.g. Bibbulmun Track.
2. Interpretation. Explains natural and cultural features, and management activities designed to enrich community and visitor experiences. Includes signs, information shelters, artworks, installations, explanatory brochures and guided activities.
3. Education. Provides resources and programmes designed to suit various ages and types of educational groups, includes teacher's resource packs, student worksheets and other support materials.

Information will focus on access and facility signage, activities and events, Northcliffe Visitor Centre functions related to the Park, and off-site promotion through websites and social media.

Interpretation will focus on natural features of Northcliffe Forest Park through panels at sites and along tracks and trails, artworks, the role of the Park as part of the Southern Forests and Valleys Region and guided activities.

Education will focus on the role of the Northcliffe Visitor Centre programmes, special interest events and programmes and involvement of schoolchildren.

Signage as a key subset of Information

Current signage is a mixture of styles and formats that lacks necessary consistency, message delivery and quality. The development of a new sign family and style is needed for a number of reasons:

- to deliver a range and clarity of messages across different situations, needs, places and themes;
- effective framing of the Park as a high-quality conservation and recreation reserve;
- to evoke a sense of appreciation and inspiration in Park users;
- to support the sustainable use of the Park;
- to project a sense of the community's appreciation and attachment; and
- to reflect positively on the Northcliffe Forest Park Management Committee and Shire of Manjimup as caring and responsible managers.

A signage family and style that has a simple and evocative character in fitting with the Southern Forest and Valleys Region would likely be best suited. Such a style would be based on the signature characteristics of the area's natural elements, our ideal impression of the bush and desire to explore it, the use of a local sustainable resource, and the expression by architectural style of the Northcliffe area's natural, cultural and rural history.

The use of local stone, timber, shapes, tones, colours and traditional uses help define the materials and styles best to use for effective signage. This style also applies to the materials and attributes of the infrastructure and facilities for recreation sites (see *Day-use and Picnicking* in section 29 *Activities*).

Specifically, the style would be based on an extensive use of Jarrah timber as the primary sign material, along with natural stone plinths and forms in key places, and anodised alloy panels for specific messaging and interpretation. The Jarrah timber infrastructure elements used at the Boorara Tree site in nearby Lane Poole National Park, and some of the infrastructure at The Hollow Butt and Acacia sites in Northcliffe Forest Park are excellent examples.

Durable and common Jarrah is ideal for natural and sawn posts and sawn and routed signboards. Basic black print on alloy panels is a suitably simple, subtle, relatively inexpensive medium on which to display detailed information. These elements complement rather than compete with the natural colours and forms of the Park - allowing the nature to speak for itself as a subtle contrast, and these elements complement the style of the recreation site infrastructure materials.

The skills required to construct the timber signage and infrastructure are locally available. The use of timber working skills provides a forest community cultural expression as a sense of place and strong attachment to the Forest Park, which complements the other dimensions delivered by the style.

Objective

Promote awareness, attachment, understanding and conservation of the Park's natural, cultural and recreational values, and its stewardship by the Northcliffe community and Shire of Manjimup.

Management Actions

Information

1. Northcliffe Forest Park Management Committee to review current information as website content, brochures, signs, maps and other information to ensure consistency of content and messages.
2. Northcliffe Forest Park Management Committee sSpecifically review all signage on access points, recreation sites, trails and tracks.
3. From the review, Northcliffe Forest Park Management Committee to develop a common information outline that covers Park size, vesting, purpose, size, origin, management responsibility, features, values, access, recreation opportunities, threats, fire danger periods, community involvement and management objectives.
4. Develop a suitable signage family and style in line with the character of the Shire and Region.
5. Include Northcliffe Forest Park in "Our Places and Spaces" on Shire of Manjimup website, with information as reviewed above.
6. Northcliffe Forest Park Management Committee to ensure inclusion of the reviewed information on Northcliffe community websites.
7. Liaise with other organisations and individuals including Department of Biodiversity, Conservation and Attractions, Tourism WA, southwest region tourism centres, tour operators to ensure information they provide about the Park is consistent with reviewed material.
8. Recognise the Northcliffe Visitor Centre as a primary information point for the Park.

Interpretation

1. Northcliffe Forest Park Management Committee Develop interpretation programmes as part of the functions of the Northcliffe Visitor Centre.
2. Support interpretation projects and the input of individuals and organisations interpreting the Park's features and values.
3. Northcliffe Forest Park Management Committee to seek grants to develop interpretation, information and education facilities, programmes, projects and materials.

Education

1. Northcliffe Forest Park Management Committee to review current educational information material and packages.
2. Northcliffe Forest Park Management Committee to develop education materials based on the Park's values, plants, animals, cultural history, threats, recreation opportunities and management methods as priorities.
3. Northcliffe Forest Park Management Committee to liaise with the Northcliffe School on the development and use of education materials, and the use of the Park as a nature-based education resource.

40 Community Involvement

The Northcliffe community has a long-held connection and passion for protecting the natural environment of the district, and the existence of Northcliffe Forest Park symbolises that connection. The foresight of the late George Gardner OAM and Archie Jackson in establishing the Park further exemplifies the connection.

Community involvement is at the heart of the Park through the Northcliffe Forest Park Management Committee (NFPMC), which consists of members of the Northcliffe community, Manjimup Shire Council elected members and staff, Northcliffe Volunteer Bushfire Brigade and the Department of Biodiversity, Conservation and Attractions.

The community have been involved in the development of this management plan through the NFPMC, and with the added input of a broader section of the interested community as selected by the NFMC. Input was based upon initial discussions with the NPMC, and the consideration and comment on the draft plan.

Ongoing community involvement, by the NFPMC and more broadly, is essential for the successful implementation of this management plan and the protection and enjoyment of the Park by all. Further involvement by Noongar people, tour operators, arts groups, other interest groups and volunteers is important to the wellbeing of the Park and the community.

Objective

Effective community involvement and support for the management, use and conservation of the Park.

Management Actions

1. Manage the park with the support of the Northcliffe Forest Park Management Committee and its Terms of Reference.
2. Maintain the current membership of the Northcliffe Forest Park Management Committee, and approach the Noongar community to seek their inclusion on the Committee.
3. Support the involvement of community members and other interested volunteers in Park management programmes where appropriate. Research and monitoring, interpretation and trail care programmes are particularly suitable.
4. Manage volunteers through a registration and basic training system.
5. Ensure relevant Shire of Manjimup policies are followed for volunteers.
6. Recognise the value of community and other volunteer involvement through recognition of contributions in Park information and awards programmes as appropriate.

PART H. IMPLEMENTING, MONITORING AND RESEARCH

41 Administration, Implementation and Priorities

As the vesting authority, the Shire of Manjimup is responsible for Northcliffe Forest Park (Landgate 2018), with on-ground management through their community-based Northcliffe Forest Park Management Committee.

The implementation of this management plan will be guided by the Shire of Manjimup and Northcliffe Forest Park Management Committee. Implementation will be subject to available resources and an annual works programme developed by the Manager of Parks and Gardens. Assessment of the performance of the plan will be conducted annually by the Forest Park Management Committee and reported to the Shire of Manjimup CEO and Council (see section 11 *Performance Assessment*).

Resourcing for implementation will be required, with the Shire of Manjimup meeting day-to-day management and maintenance costs and some capital works funding. However, larger capital works, conservation and information priorities will require significant additional resources. Resources required will likely come from external sources, including Lotterywest, The WA State Natural Resource Management Programme, the Australian Government National Landcare and related programmes, and other sources as identified and available over the life of the plan. Grants and grant applications are subject to Shire of Manjimup CEO and Council approval.

At the time of the preparation of this plan, the Lotterywest Community Investment Framework is available, suitable, and the Shire of Manjimup and Northcliffe Forest Park Management Committee are eligible. The Community Investment Framework includes the priority areas *Protected Sustainable Ecosystems*, *Connected Cultural Experiences* and *Smart Innovative Society* grant streams (Lotterywest 2018). Several of the objectives and associated management actions of this plan will meet these priorities.

Priorities for initial plan implementation are the access, signage, recreation site infrastructure, information and bushfire management actions that relate to the immediate safety, wellbeing and enjoyment of park users. Secondary priorities are those management actions determined by the Northcliffe Forest Park Management Committee to be in most need of implementation as reviewed annually. The associated document *NFPMP Assessment and Priorities 2019* lists and prioritises management objectives to assist in the implementation and review process.

Objective Implement this management plan with a focus on priorities as reviewed each year, increase resources available for implementation, and report on results.
Management Actions 1. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to develop a list of the first-year objective and management action priorities for implementation, relating to: access, information and signage, recreation site infrastructure and bushfire management that relate to the immediate safety, wellbeing and enjoyment of Park users and neighbours, and conservation of primary values. The associated <i>NFPMP Implementation Performance Assessment and Priorities 2019</i> will assist this process.

2. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to consider budget allocations and requirements to implement priorities.
3. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to develop a works programme to implement priorities.
4. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to liaise and work with Lotterywest to develop grant co-investment applications from their Community Investment Framework programme.
5. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to liaise with the Warren Catchments Council and South West Catchments Council on grant and resourcing opportunities from the State and Australian Government Natural Resource Management Programmes.
6. Consider other grant programmes to seek resources and co-investment to implement priorities.
7. Northcliffe Forest Park Management Committee in consultation with Shires Manager Parks & Gardens to review implementation priorities each year, review budget allocations, resources required, works programmes and grant opportunities to support implementation. Use the associated *NFPMP Implementation Performance Assessment and Priorities 2019* to assist this process.
8. Northcliffe Forest Park Management Committee to report on implementation progress to the Shire of Manjimup CEO and Council, and the community.

42 Monitoring and Research

Monitoring and research are essential to successful management as they objectively inform and improve management methods when done well. They will lead to an improved understanding of the park and its values, its users, how management processes best respond and effective performance assessment.

Monitoring and research undertaken by the Department of Biodiversity, Conservation and Attractions for their management of the national parks, nature reserves and State forests under its care, is of potential value to Northcliffe Forest Park. Discussions regarding the use of existing monitoring and research, and potential for future collaboration, could be of benefit to the Park.

Monitoring is used to measure responses of biological, physical and people's responses to events, episodes or over time such that management and research can be developed or improved. Management supported by interested community groups and community members and other volunteers are best placed to undertake monitoring. Community involvement in monitoring can help engage people in the Park, improve the understanding of its conservation and enjoyment and strategically support the management of the Park.

Research will ideally be undertaken in partnerships with relevant community groups, and other agencies and organisations involved in conservation and recreation land management and tourism. Research can be a very effective medium by which to gain broader involvement in the conservation and enjoyment of the Park.

Monitoring and research priorities are aligned with the management priorities in *41 Administration, Implementation and Priorities*, which are *access, information and signage, recreation site infrastructure and bushfire management that relate to the immediate safety,*

wellbeing and enjoyment of Park users and neighbours and conservation of primary values.

The matching monitoring and research priorities include:

- Firebreak access network effectiveness and its avoidance of sensitive ecosystems;
- Road, track and trail use patterns over time;
- Information types and methods most useful for conveying key messages;
- Plant community mapping;
- Plant community disturbance dynamics;
- Bushfire hazard assessments across plant communities and fuel ages;
- Water availability long term and sustainable access to the Gardner River;
- Recreation site use over time and preferred facilities and allied infrastructure;
- Restoration and use requirements of the Town Dam water body.
- Occurrence of threatened animals and plants.
- Habitat requirements of threatened animals and plants.
- Occurrence of feral animals, dieback disease and invasive weeds.
- Occurrence of cultural sites and artefacts.

Objective

Increase the understanding of plants, animals, natural processes, threats and people's use of the Park for improved management, and to assess the performance of this plan.

Management Actions

1. Northcliffe Forest Park Management Committee to seek funding and resources to develop a monitoring and research programme based on priorities.
2. Northcliffe Forest Park Management Committee to review monitoring and research priorities each year.
3. Include monitoring and research in grant applications to support improvements in understanding park values and management methods, and the involvement of the community and volunteers.
4. Northcliffe Forest Park Management Committee to include priority monitoring in management works programmes.
5. Northcliffe Forest Park Management Committee in consultation with the Shire's Manager Parks & Gardens to liaise and collaborate with community groups, government agencies, organisations and educational institutions on monitoring and research of the Park's primary values.
6. Northcliffe Forest Park Management Committee to encourage the Northcliffe community's involvement in monitoring and research, principally on the animals and plants of the Park. This will build upon the excellent contribution to recording the Park's animals and plants in recent years, and continues the work of George Gardner OAM. Maintain a record of monitoring and research results and related relevant studies in the Northcliffe Visitor Centre.

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