

# Nerang Area

Incorporates: Nerang National Park, Nerang Conservation Park and Nerang State Forest



## Draft Management Plan

2023

Not Government Policy



This management plan has been prepared and co-designed with the Danggan Balun (Five Rivers) Native Title Claim representatives, Ngarang-Wal Aboriginal Association and Queensland Parks and Wildlife Service (QPWS), Department of Environment and Science (DES).

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Front cover photo: A photo taken from the banks of the Coombabah Creek in Nerang National Park. © Mark Patenaude, DES, Queensland Government.

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*The department is committed to respecting, protecting and promoting human rights, and our obligations under the Human Rights Act 2019.*

*This management plan does not intend to affect, diminish or extinguish native title or associated rights.*

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# Public consultation on planning documents

Good planning is an important part of effective park management: it helps us understand where we are now, where we want to be, and how we are going to get there. It is the first step in the Values-Based Management Framework, an adaptive management cycle used by the Queensland Parks and Wildlife Service (QPWS) for setting the goals, strategic direction and priorities for park management. The cycle incorporates phases of monitoring, evaluating and reporting to inform how we are performing and where we need to adapt management to achieve our goals and good outcomes for Queensland's parks, forests and reserves.

Planning for each park is brought together and communicated through several planning documents: management plans and statements, resource information, thematic strategies and action plans. The hierarchy and purpose of these documents are shown in Figures 1 and 2.

For the Nerang Area, the following planning documents are available:

- draft management plan
- draft resource information document
- draft visitor strategy.

## An invitation to comment

Organisations and members of the public are encouraged to have a say on the management of the Nerang Area: you are invited to review the management plan and resource information document and put forward a submission.

Written submissions on the draft management plan can be made via the Queensland Government's **Get Involved** website [www.getinvolved.qld.gov.au](http://www.getinvolved.qld.gov.au).

The Minister will consider all submissions when finalising the management plan.

For further information on the draft management plan or the planning process, please visit the Department of Environment and Science website [www.des.qld.gov.au](http://www.des.qld.gov.au).

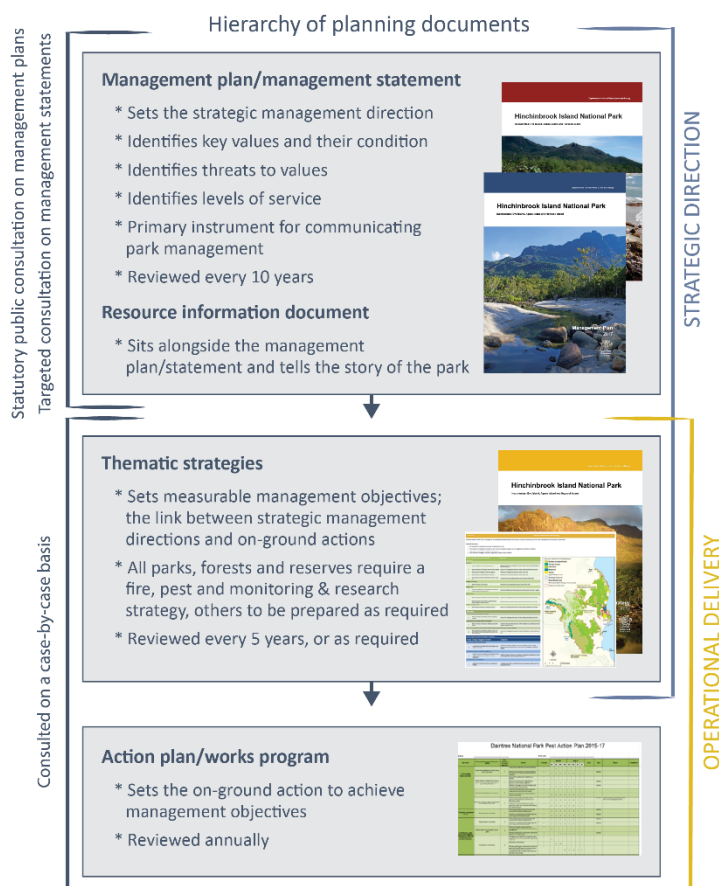


Figure 1. Hierarchy of planning documents and their purpose

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# 1. Introduction

The Department of Environment and Science recognises, respects and values First Nations peoples and cultures. We recognise First Nations rights and interests in the Country on which we walk, work and live. We are committed to progressing self-determination by working in genuine partnerships with First Nations peoples to incorporate their priorities and perspectives across our decision-making and operations. The *Gurra Gurra Framework 2020–2026* prioritises and accelerates this commitment, guiding the agency to embed Country and people at the centre of all that we do.

## 1.1 Approach to best practice management

Queensland's parks, forests and reserves are places we want to protect for future enjoyment and wellbeing. What makes these places special are the presence and diversity of natural, cultural, social and economic values. These areas experience natural cycles – they live and breathe – and therefore our management needs to be dynamic too. The Queensland Parks and Wildlife Service (QPWS), within the Department of Environment and Science (DES), applies a contemporary management process that is based on international best practice and focuses management towards the most important features of each park – their **key values**.

The **Values-Based Management Framework** (VBMF) is an **adaptive management** cycle that incorporates planning, prioritising, doing, monitoring, evaluating and reporting into all areas of our business. This enables the agency to be more flexible and proactive and to improve management effectiveness over time. We want to keep our parks, forests and reserves healthy by:

- managing and protecting the things that matter most – our key values
- strategically directing management effort towards priorities
- delivering our custodial obligations as a land manager
- setting a **level of service** (LoS) for all parks, forests and reserves
- building systems that support decision-making for adaptive management
- building support for what we do through accountability and transparency
- striving for improvement through structured learning and doing.

As a land manager, QPWS has a **custodial obligation** to ensure our estate is managed to provide appropriate and safe access, protect life and property, be a good neighbour and work cooperatively with partners across the landscape. The agency does this as part of setting an LoS for each park. LoS is a management standard that considers an area's values, **threatening processes**, custodial obligations, risks and overall management complexity.

By assessing an area's key values and LoS, QPWS can prioritise management efforts, balancing the importance of values and **threats** with our custodial obligations. Each year, we track work programs, monitor the condition of values and evaluate our performance across all aspects of management. The evaluation process documents how efficiently and effectively we are working toward achieving the objectives we set for managing parks, forests and reserves, and how the condition of key values is changing in response to our management efforts. This evaluation supports transparent and accountable reporting, enabling us to continuously improve park management and demonstrate outcomes to the community.

Figure 2 illustrates phases of the VBMF cycle for management planning. A glossary of the key concepts (in **bold**) used throughout the document is listed in Appendix 1.

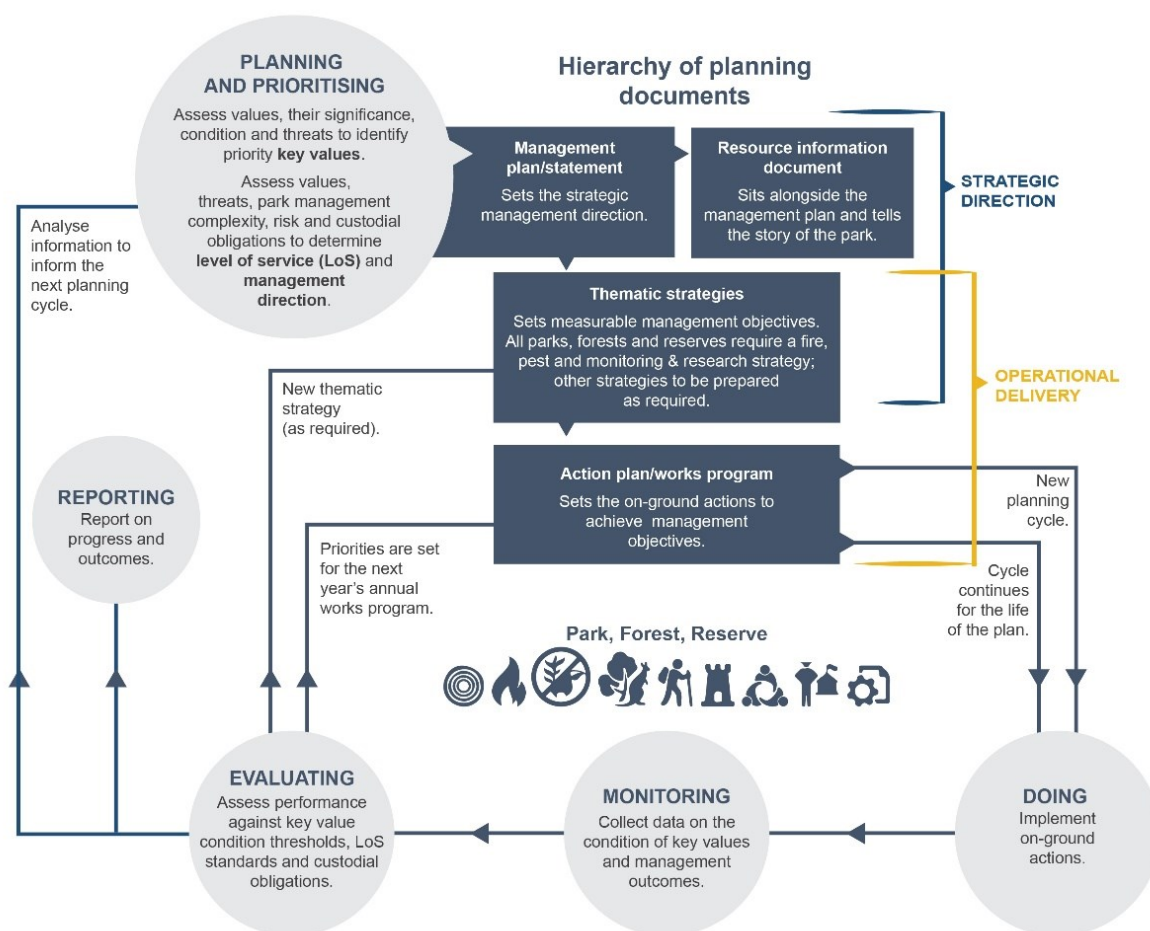


Figure 2. Phases of the VBMF cycle for planning and the hierarchy of planning documents

## 1.2 Management planning

This management plan has been developed through a process of research, assessment and consultation to establish priorities and set **strategic management direction** for the planning area. It is a legislative requirement under the *Nature Conservation Act 1992* (Qld) (NCA). The plan is prepared in keeping with the NCA's management principles, supporting regulations, government policies and procedures, and international agreements. QPWS's planning for protected areas is brought together and communicated through a hierarchy of planning documents:

- Management plans/statements provide the high-level strategic direction for managing an area's key values, levels of service and custodial obligations. They are statutory documents and are generally reviewed every 10 years.
- Resource information documents support management plans and statements and provide a compendium of park information that tells the story of the park. These documents accompany management plans and management statements, providing contextual information. They support information provided in the plan but do not provide management direction.
- Thematic strategies provide specific objectives to achieve the strategic management directions identified in the management plan. While all parks and forests require a fire strategy, a pest strategy and a monitoring and research strategy, others are developed based on a protected area's management requirements and priorities. Thematic strategies are generally reviewed every three to five years to enable adaptive management.
- Action plans outline the work program for delivering on-ground actions.

Further information on the VBMF, copies of management plans/statements and resource information documents are available on the department's website at [www.des.qld.gov.au](http://www.des.qld.gov.au).

## 2. Yugambah (Kombumerri) cultural landscape and elements

The Nerang Area is the traditional lands and waters of the Kombumerri People, which is a part of the broader area of the Yugambah speaking people. Parts of the park are within the Danggan Balun (Five Rivers) People's native title claim area.

The traditional custodians of the area have held an unbroken and ongoing connection to the Nerang Area since time immemorial. The suburb and national park name are derived from the Ngarahngwal word *Neering*, meaning shovelnose shark/ray. The Kombumerri People are strongly connected to *jagun* (Country) and have always been 'saltwater people'. The Nerang River is recognised as a highly significant feature of the landscape due to the connection it brings of instilling life to the whole area. The Kombumerri People occupied camps along the banks of the river, used the many food and medicinal resources that the river provided and utilised the river as a transport passage to the saltwater. The banks of the Nerang River are the location of the last known occupied camp for Kombumerri People.

Coombabah Creek played a similar role in the landscape, with the headwaters now situated within the national park. The protection of this area as the 'heart and lungs' of the ecosystem, due to the way it breathes and pumps life into the surrounding landscape, is of the utmost importance.

***'Our belief is that if country is healthy, people are healthy.'***

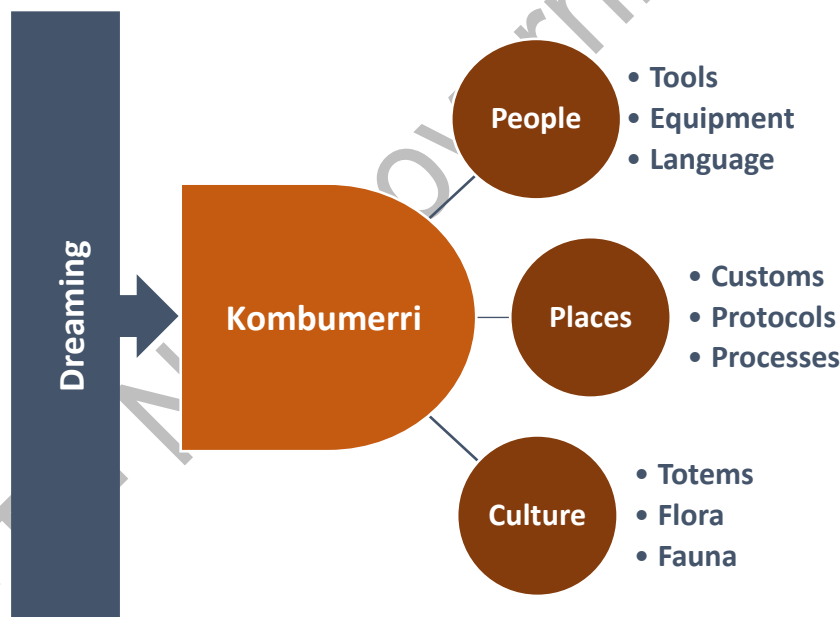


Figure 3. Kombumerri connection diagram

### Threats

**Primary threat:** The illegal construction of mountain bike tracks throughout the Nerang Area is having an impact on vegetation communities, altering drainage systems (erosion), and resulting in a loss of ecosystem function. These impacts have a direct impact on Country and culture as they are all intrinsically interconnected as part of the Kombumerri biocultural landscape. In addition to disturbing ecosystems and the intangible elements of *jagun*, illegal trail construction is impacting tangible features, including stone artefacts and scar trees, by disturbing or potentially destroying these features.

**Secondary threat:** Low intensity, mosaic burning practices were used to protect Country and fire-sensitive species, and also to promote the regeneration of food trees for Kombumerri People and fauna such as the *borobi* (koala). The lack of cultural burning practices across the Nerang Area post-settlement has meant a change away from fire frequencies that benefit flora and fauna species, including totems. The potential for high-intensity bushfire due to inadequate mosaic burning also presents a significant threat for keystone species such

as sugarbag bees that nest in cavities of trees and logs. The difficulty in applying cultural burning practices to a landscape fragmented by mountain bike and management trails is also recognised as a linked indirect threat to the cultural landscape.

**Other threat:** Official records show the original inhabitants have continually resided in the Nerang Area for 20,000+ years; however, over the last 250 years (since European settlement), there has been continual pressure to remove people from Country, resulting in a loss of access to Country and connection to the spiritual and cultural ties held within Country. The Nerang Area remains an important place for young Kombumerri People to connect with Country and culture.

**Other threat:** Introduced pest plants, including lantana, are outcompeting native species of cultural significance, and these pest plants change the landscape, particularly in the context of fire.

**Other threat:** Feral animals are impacting on culturally significant species and sites through predation and disturbance. In particular, hard-hooved species such as deer can disturb artefacts and destroy scar trees through ringbarking. Cats are also having an impact on culturally significant species through predation across the park.

### Desired outcome and strategic management direction

| Desired outcome   |          |
|---|----------|
| The relationship with the Nerang Area of the Yugambeh People, and the protection of their cultural heritage, will be managed by improved knowledge and partnership, recognising their connection to Country and their role in managing the park's key values. |          |
| Strategic management direction  | Priority |
| Minimise visitor impacts, including preventing illegal works or activities, that may disturb or destroy Kombumerri cultural artefacts, places and totems (culturally significant species).  | 1        |
| Strengthen access to Country for Yugambeh People through providing opportunities and support to get back on Country.  | 1        |
| Develop works and services arrangements with the Narang-wal Indigenous Ranger Program.  | 1        |
| Increase visitor awareness of Yugambeh cultural protocols regarding discovery of cultural sites and artefacts.  | 1        |
| Recognise and support Yugambeh cultural customs in decision-making through the establishment of working together protocols.   | 2        |
| Support the re-establishment of traditional practices, including cultural burning, by incorporating them into park management.  | 1        |
| Improve knowledge of Yugambeh culture by incorporating language into culturally relevant visitor communication materials and the development of a culturally significant species list.  | 1        |



## 3. Nerang Area

### 3.1 Management plan and thematic strategies

The *Nerang Area Draft Management Plan* provides the strategic management direction for managing its keys values (Section 4) and meeting our custodial obligations across eight **management themes** (Section 5). The plan is supported by the *Nerang Area Draft Resource Information* document, a compendium of park information that tells the story of the park. The strategic management direction set out in this management statement link to a set of thematic strategies that detail management objectives, providing the connection between high-level strategies and on-ground operations. The complexity of a park's values and custodial obligations determine the requirements for specific strategies. The Nerang Area has four thematic strategies:

- fire
- pest
- monitoring and research
- visitor.

### 3.2 Park overview

The Nerang Area is located in the Gold Coast lowlands. It is in the state electorate of Gaven and the local government area of Gold Coast City Council (Figure 4).

Nerang National Park and Nerang Conservation Park are valued for the conservation of biodiversity, community engagement in park management and ecologically sustainable recreation. The parks have a high level of biodiversity and ecosystems of conservation significance. Nerang National Park is the largest (1,614 ha) remnant of bushland in the Gold Coast lowlands. Together with Nerang Conservation Park (113 ha), it provides important local green space and catchment protection for the headwaters of several streams, including Coombabah Creek.

The parks provide important recreational opportunities for nearby communities due to their relative size and central location on the edge of Gold Coast's suburbs.

### 3.3 Key management considerations

An area of Nerang National Park falls within the nationally listed Coombabah Lake wetland, which includes tributaries, inlets, a tidal lake, marshes, swamps and streams joining in a marine plain. The ecological features of the headwaters, being Coombabah Creek in Nerang National Park, play a critical role in preventing increased sedimentation to the tidal lake that is considered to be of significant wildlife value and refugia habitat. Coombabah Lake is of international significance under the Ramsar Convention (part of the Moreton Bay Ramsar site). It is also a declared Fish Habitat Area and a marine national park zone under the *Marine Parks (Moreton Bay) Zoning Plan 2019*.

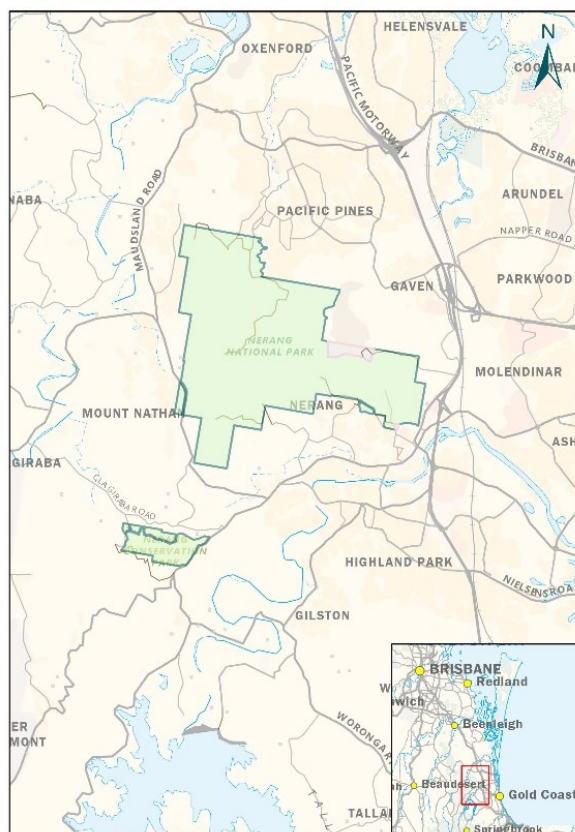


Figure 4. Nerang Area locality map





















## 4. Key values

All parks, forests and reserves have an array of natural, cultural, social or economic values that are important, and contribute to the state's comprehensive and representative protected area and forest estate. The VBMF supports a process for identifying and protecting the most important values, the key values, and this directs the allocation of resources.

In this section, a **key value statement** is provided for each key value, identifying the current **condition and trend** and a desired condition. The main threatening processes are identified and rated from high to low. A strategic management direction provides a broad strategy to address the threatening process to achieve the **desired outcome** over time. Each strategic management direction is prioritised according to the need for action to prevent further decline, stabilise current condition, or restore and enhance the value (refer to **priority rating** in Appendix 1). The condition of all key values is (or will be) assessed through regular **health checks** or other monitoring. The monitoring and research strategy outlines opportunities and needs for scientific monitoring and research programs that will enhance our knowledge. Any change to a key value's condition will be identified through health checks or monitoring, enabling QPWS to act quickly, applying best practice adaptive management.

### Summary of key values

A summary of the key values for the Nerang Area is detailed below. The location of each key value is shown in Map 1. Figure 5 provides a key to interpreting the condition and trend icons used in this section.

|  | Current condition   | Confidence in condition assessment  | Current trend   | Confidence in trend assessment  | Desired condition   |
|--|---|---|---|---|---|
| 4.1 Lowland rainforest   |  |  |  |  |  |
| 4.2 Nationally significant wetland – Coombabah Lake wetland area |  |  |  |  |  |
| 4.3 Open forests and woodlands                                   |  |  |  |  |  |
| 4.4 Mountain bike riding experience                              |  |  |  |  |  |












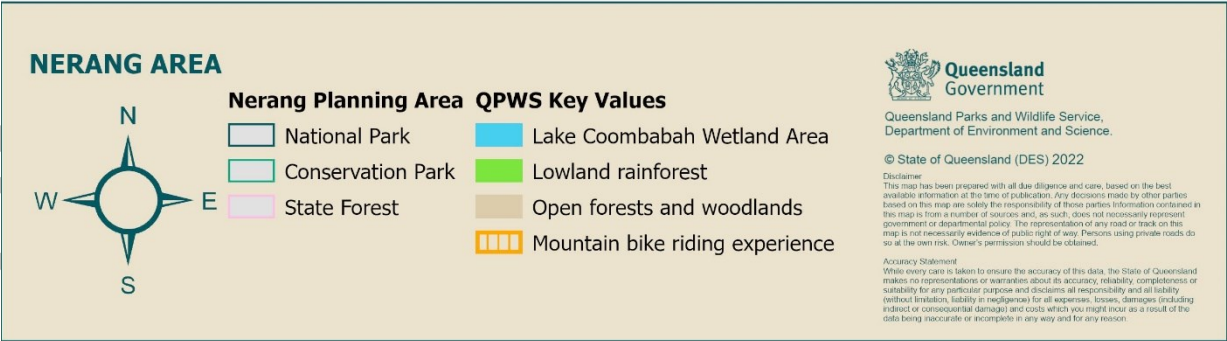
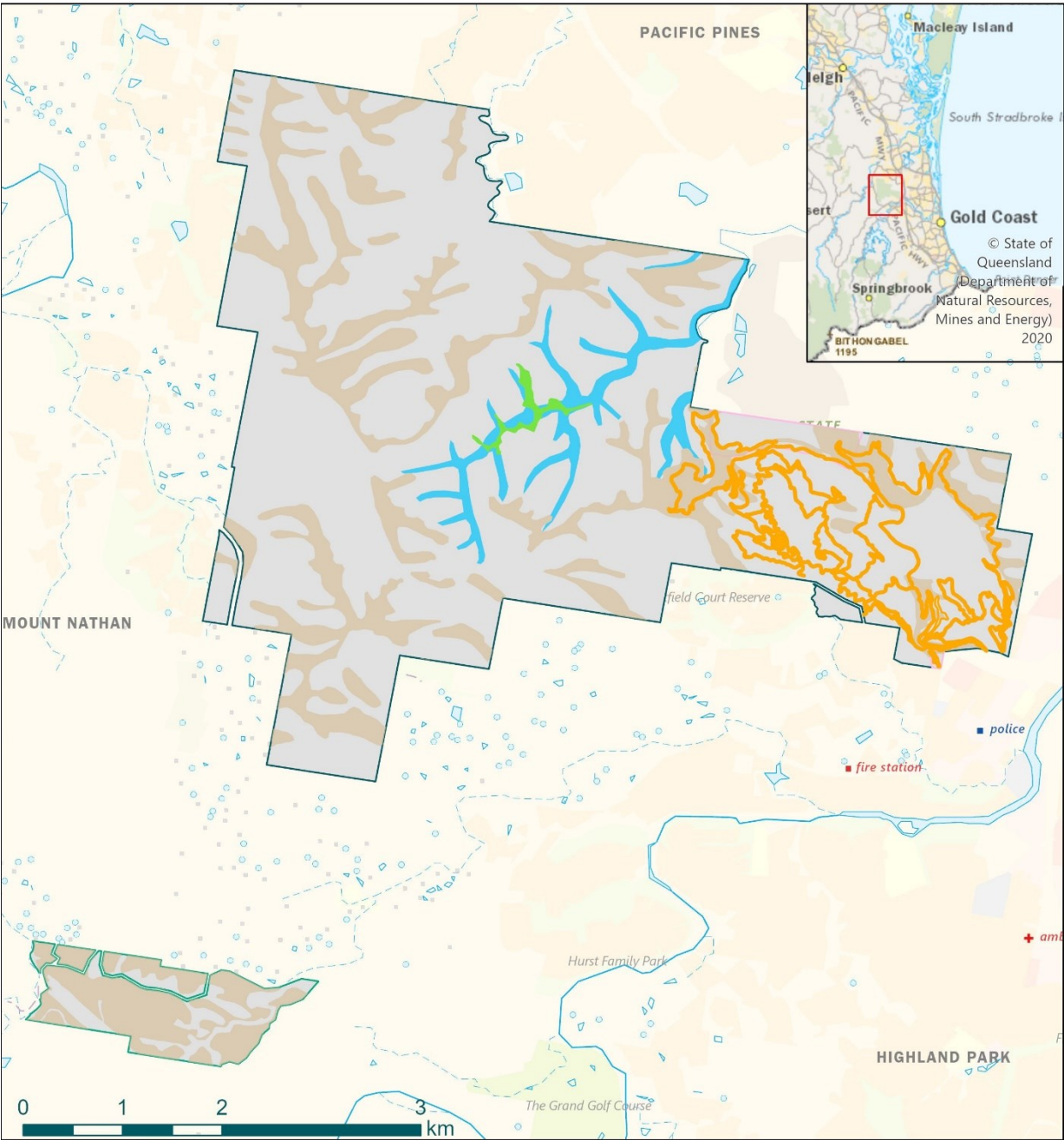
| Condition of key value    | Good<br>   | Good with some concern<br>                    | Significant concern<br>   | Critical<br>                           |
|---------------------------|---|--|---|---|
|                           | The value is in good condition and is likely to be maintained for the foreseeable future, provided that current measures are maintained | The value is likely to be maintained over the long term with minor additional conservation measures to address existing concerns | The value is threatened by a number of current and/or potential threats. Significant additional conservation measures are required to preserve the value over the medium to long term | The value is severely threatened. Urgent additional large-scale conservation measures are required or the value may be lost |
| Trend rating of condition | Improving<br>  | Stable<br>                                    | Deteriorating<br>  | No consistent trend<br>                |
| Confidence in assessment  | Inferred<br>   | Limited<br>                                   | Adequate<br>   |   |






Figure 5: Key to condition, trend and confidence icons



Map 1: Nerang Area key values

## 4.1 Lowland rainforest

### Key value statement

| Description  |                       | Current condition  | Current trend  | Desired condition   |
|--|-----------------------|--|--|---|
| Nationally listed critically endangered lowland rainforest ecosystem | Condition and trend   | 2021<br>    |             |  |
|  | Assessment confidence | Limited<br> | Limited<br> |   |

A small area of notophyll vine forest with *Araucaria cunninghamii* occurs on metamorphic rock in the centre of Nerang National Park (Regional ecosystem (RE) 12.11.10, Broad Vegetation Group (BVG) 2a). While listed as 'not of concern' in Queensland, this regional ecosystem is included in the EPBC listed Lowland Rainforest of Subtropical Australia 'Critically Endangered' ecological community.

Prior to gazettal as national park, the area of this ecosystem was protected from harvesting as a Scientific Area under the *Forestry Act 1959* to preserve plant species considered rare or threatened or not adequately preserved in the area, and to protect plant species at the limit of their geographical range. Plant species recorded of importance in this value include finger lime *Citrus australasica*, long-leaved tuckeroo *Cupaniopsis newmanii*, *Meiogyne stenopetala* and brush muttonwood *Myrsine howittiana*.

The ecosystem is high in species diversity despite its size and historic impacts of inappropriate fire. Exclusion of fire from the area is critical for the ongoing regeneration of rainforest canopy species. This area of riparian vegetation buffers and protects the river systems of the Coombabah Lake wetland, which is also listed as a key value for Nerang (Appleton 2021).

### Threats

**Primary threat:** The illegal construction of mountain bike tracks through critically endangered lowland rainforest areas is causing the following direct and indirect impacts as substantiated by other mountain bike trail impact research across the world (Lathrop 2003, Marion & Wimpey 2007, Quinn & Chernoff 2010): effects on soils, including compaction, incision, erosion and trail widening to avoid muddied or puddled areas; effects on vegetation, including vegetation removal, trampling and facilitation of encroachment by invasive species and pathogens (Pickering & Hill 2007); effects on wildlife, including stress and disturbance leading to area avoidance and changes in community composition, reduced breeding success, collision mortality and alteration of habitat (Miller 1998, Davis et al. 2010, Burgin & Hardiman 2012, Thompson 2015, Botsch et al. 2018); and effects on water, including increased sedimentation and turbidity, and introduction of nutrients, pollutants or pathogens. **Threat rating: High**


**Secondary threat:** Bushfire incursion into rainforest margins due to inappropriate fire regimes in surrounding eucalypt forest. **Threat rating: Low**

**Other threat:** Pest plants including lantana *Lantana camara*, fishbone fern *Nephrolepis cordifolia* and other scrambling vines are impacting on the lowland rainforest by outcompeting native understorey species and preventing canopy species recruitment. Biocondition assessments completed in 2021 suggest this threat is primarily focused in disturbed or periphery areas.

**Threat rating: Low**








**Desired outcome and strategic management direction**

| Desired outcome   |   |          |
|---|---|----------|
|  | The lowland rainforest of Nerang National Park will be improved from <i>significant concern</i> to <i>good</i> through strategic visitor management, including the prevention of illegal trail construction, the targeted application of fire in adjacent communities and the treatment of pest plants. |          |
| Threatening processes   | Strategic management directions   | Priority |
| Recreation  | Prevent illegal track construction within the lowland rainforest community through compliance, community education and communication.   | 1        |
|   | Restore lowland rainforest community impacted by clearing through decommissioning of recreational trails and restricting future recreational access by working with conservation groups to facilitate natural regeneration.   | 1        |
| Introduced weeds  | Prevent the establishment of devil's fig <i>Solanum torvum</i> in the lowland rainforest communities.   | 2        |
|   | Reduce the impacts of lantana <i>Lantana camara</i> , fishbone fern <i>Nephrolepis cordifolia</i> and other woody weeds and scrambling vines.   | 2        |
| Bushfire  | Protect lowland rainforest communities through appropriate fire management in adjacent fire adapted woodland communities.   | 3        |

See Appendix 1. Glossary for priority rating definitions.

## 4.2 Nationally significant wetland – Coombabah Lake wetland area

### Key value statement

| Description  |                       | Current condition  | Current trend  | Desired condition   |
|--|-----------------------|--|--|---|
| Catchment area for headwaters of nationally significant wetland – Coombabah Lake wetland | Condition and trend   | 2021<br>    |             |  |
|  | Assessment confidence | Limited<br> | Limited<br> |   |

Nerang National Park protects the catchment for the headwaters of several streams, including Coombabah and Saltwater creeks. These creeks rise within the park, make up the upper watershed of the wetland, and flow from the sub-coastal hills down to Coombabah Lake. Coombabah Lake wetland is listed in the Directory of Important Wetlands and includes tributaries, inlets, a tidal lake, marshes and swamps that are contiguous with the Moreton Bay wetland. Coombabah Lake wetland area is important as it is the most southerly lake and coastal swampland in the bioregion that provides some of the only remnant wildlife refugia in the area due to extensive clearing and edge effects (Department of Climate Change, Energy, the Environment and Water 2019). The protected area is listed as an important conservation measure for maintaining the health of this wetland. The wetland meets the following three out of six eligibility criteria for listing as a nationally important wetland:

2. It is a wetland that plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex.
3. It is a wetland that is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail.
5. The wetland supports native plant or animal taxa or communities which are considered endangered or vulnerable at the national level.

Tree clearing alters hydrology and is listed as a significant threat to the health of this wetland. Therefore, the protection of riparian vegetation and adjacent woodlands in the national park are critical for the function of this overall wetland complex. Additionally, the Coombabah wetland system has a small catchment, approximately 15 km from its headwaters in the national park. The wetland therefore does not get large volumes of water flushing through it. Being a relatively shallow lake naturally (average depth is less than 1 m), increased sedimentation is a significant concern for the impacts that further shallowing may have in the context of climate change, particularly on aquatic biota (Department of Environment and Science 2021).

Other creeks in the park are also important, such as Mooyumbin Creek, which is further east than Coombabah Creek. Mooyumbin Creek has riparian vegetation that includes the near threatened birdwing butterfly vine *Pararistolochia praevenosa*, which is the lowland food source for larvae of the vulnerable Richmond birdwing butterfly *Ornithoptera richmondia*.

### Threats

**Primary threat:** The illegal construction of mountain bike tracks through wetland and riparian areas are causing the following direct and indirect impacts as substantiated by other mountain bike trail impact research across the world (Lathrop 2003, Marion & Wimpey 2007, Quinn & Chernoff 2010): effects on water, including increased sedimentation and turbidity, and introduction of nutrients, pollutants or pathogens; effects on soils, including compaction, incision, erosion and trail widening to avoid muddied or puddled areas; and effects on vegetation, including vegetation removal, trampling and facilitation of encroachment by invasive species and pathogens (Pickering & Hill 2007). **Threat rating: Very high**


**Secondary threat:** Increased sediment loads are occurring in the tributary creeks as a result of erosion from adjacent authorised vehicle management trails and unauthorised single tracks. The deposition of sediment loads is contributing to changes in water quality downstream. Recent studies have also indicated that Coombabah Lake is becoming more shallow in parts due to sedimentation, and deeper in parts due to channelisation. These changes can reduce flow through the system and provide a positive feedback loop for further sediment deposition in the system. The areas of Coombabah Creek downstream of the park also appear to be increasingly affected by siltation, which is increasing colonisation by mangrove species (Department of Environment and Science 2021). **Threat rating: Medium**

**Other threat:** Bushfire incursion into riparian corridor margins due to inappropriate fire regimes in surrounding eucalypt forest. **Threat rating: Low**

**Other threat:** Pest species including lantana *Lantana camara*, camphor laurel *Cinnamomum camphora* and devil's fig *Solanum torvum* are outcompeting native riparian vegetation. Non-native species in the riparian zone alter the amount of organic matter naturally entering the waterway, reducing the diversity of native invertebrate communities, which in turn impacts on food sources for fish and can change the channel structure of waterways, increasing erosion and impacting on water quality. Invasive vines such as cat's claw creeper *Dolichandra unguis-cati* and fishbone fern *Nephrolepis cordifolia* occur in other areas of the park and surrounding properties.

**Threat rating: Low**






#### Desired outcome and strategic management direction

| Desired outcome  |   |          |
|--|---|----------|
|  | The condition of the wetland areas will be improved to <i>good with some concern</i> by reducing the impacts of recreation, bushfire and pest species.  |          |
| Threatening processes  | Strategic management directions   | Priority |
| <b>Recreation</b>  | Prevent illegal track construction within the wetland areas through compliance, community education and communication.  | <b>1</b> |
| <b>Work or other activities</b>  | Restore wetland community impacted by clearing through decommissioning of recreational trails and restricting future recreational access by working with conservation groups to facilitate natural regeneration.                          | <b>1</b> |
|  | Monitor water quality as an indicator of restoration success.   | <b>2</b> |
|  | Improve the Coombabah Lake wetland area by controlling fine sediment inputs from erosion of authorised vehicle management tracks in surrounding areas.  | <b>2</b> |
| <b>Bushfire</b>  | Protect riparian vegetation of the wetland through appropriate fire management of adjacent fire adapted woodland communities to limit encroachment of high-intensity fire.  | <b>3</b> |
| <b>Introduced weeds</b>  | Reduce impacts of lantana <i>Lantana camara</i> in the riparian zones of the nationally significant wetland area.   | <b>4</b> |
|  | Prevent the establishment of fishbone fern <i>Nephrolepis cordifolia</i> , cat's claw creeper <i>Dolichandra unguis-cati</i> , camphor laurel <i>Cinnamomum camphora</i> and devil's fig <i>Solanum torvum</i> in the riparian corridors. | <b>3</b> |

See Appendix 1. Glossary for priority rating definitions.

## 4.3 Open forests and woodlands

### Key value statement

| Description   |                       | Current condition   | Current trend  | Desired condition   |
|---|-----------------------|---|--|---|
| Low altitude open forests and woodlands dominated by white leaved mahogany and spotted gums | Condition and trend   | 2021<br>    |             |  |
|   | Assessment confidence | Limited<br> | Limited<br> |   |

Nerang National Park and Conservation Park protect some of the last contiguous stands of lower altitude open forests and woodlands in the Gold Coast area. These particular forest types have been extensively cleared and fragmented outside of protected areas as urban development in South East Queensland continues to expand.

The open forests and woodlands are comprised of two regional ecosystems (RE 12.11.24 (BVG 9g) and 12.11.25 (BVG 10b)). These ecosystems are dominated by canopy tree species including mahoganies, bloodwoods and stringybarks (*Myrtaceae* family). They are home to a number of threatened fauna species including koalas *Phascolarctos cinereus*, greater gliders *Petauroides volans*, grey-headed flying foxes *Pteropus poliocephalus*, powerful owls *Ninox strenua* and glossy black cockatoos *Calyptrorhynchus lathami*.

Recent surveys of the southern greater gliders have identified they are somewhat confined to the central and southern areas of open forests and woodlands of the park. Habitat suitable for the greater gliders, specifically the presence of large hollow bearing old growth trees with diameter at breast height (DBH) of 50 cm or greater can be found right across the park. The need for DBH greater than 50 cm on these old growth trees is to support multiple hollows where the gliders like to nest. It is predicted that increased human disturbance in some areas has caused a behavioural change in the glider population, restricting them to areas that are likely to have less human presence. Historical logging throughout the park has also reduced the occurrence of old growth trees suitable for nesting.

Prior to gazettal as national and conservation parks, the area was subject to timber logging.

### Threats

**Primary threat:** Illegal building of mountain bike tracks throughout the open forests and woodlands is causing loss of vegetation cover, altering surface runoff, increasing erosion and disturbing features that support faunal biodiversity. Changes to vegetation structure and diversity can also result in a loss of ecosystem resilience and changes in species assemblages.

**Threat rating: Very high**

**Secondary threat:** The park's fire history suggests in the 1980s the forests within the Nerang Area were regularly subjected to bushfires equating to nearly three-quarters of the park being impacted by escaped neighbour burns, predominantly throughout the open forests and woodlands. Since the late 1990s, arson has increased due to encroaching urban and peri-urban interface. Fire management efforts are now focused on managing the threat of bushfire by promoting low-intensity mosaic burning throughout the open forests and woodlands in accordance with the fire regime groups.

**Threat rating: Low**

**Other threat:** Pest species including lantana *Lantana camara*, camphor laurel *Cinnamomum camphora*, devil's fig *Solanum torvum*, crofton weed *Ageratina Adenophora*, cat's claw creeper *Dolichandra unguis-cati*, cocos palm *Syagrus romanzoffiana*, umbrella tree *Schefflera actinophylla*, cobbler's pegs *Bidens pilosa* and balloon cotton bush *Gomphocarpus physocarpus* are invasive and outcompete native ground cover and mid-stratum vegetation. Other non-native species in these strata also impact the recruitment of canopy species and alter fire regimes. Invasive plant species can also change habitat availability for fauna species. **Threat rating: Low**




**Other threat:** Illegal motorised access occurs across parts of the Nerang Area where vehicle fencing is yet to be established. This access causes increased degradation of trails, spread of footprint and subsequent vegetation clearing. **Threat rating: Low**

**Other threat:** Deer *Cervus* sp. are having observable impacts on the open forests and woodlands, particularly in the western sections of the park. These impacts include ringbarking, over-browsing and soil compaction throughout the forests. These impacts are also likely to be causing changes in fauna species diversity and abundance. **Threat rating: Low**

**Other threat:** Illegal domestic dog walking is an issue that has been identified to be on an upward trend due to the increasing urbanisation occurring in the surrounds of Nerang National Park. The introduction of domestic dogs within the Nerang Area is likely to be impacting on the behaviour of native wildlife. This threat has also been highlighted under the *Southeast Queensland Koala Conservation Strategy*. **Threat rating: Low**

#### Desired outcome and strategic management direction






| Desired outcome   |  |          |
|---|--|----------|
|  | The condition of open forests and woodlands will be improved to <i>good</i> through the targeted application of fire and management of feral animals and pest plants.                      |          |
| Threatening processes   | Strategic management directions  | Priority |
| <b>Recreation</b>   | Prevent illegal trail construction throughout open forests and woodlands through compliance, community education and communication.  | <b>1</b> |
|   | Minimise visitor impacts throughout open forests and woodlands in Zones* 3, 4 and 5 associated with recreational access such as mountain biking.   | <b>1</b> |
|   | Minimise visitor impacts, including vegetation clearing and damage, associated with illegal motorised access.  | <b>2</b> |
| <b>Work or other activities</b>   | Restore open forests and woodlands in Zone* 2 impacted by clearing by decommissioning mountain bike tracks, including working with conservation groups to facilitate natural regeneration. | <b>1</b> |
| <b>Changed fire frequency or intensity</b>  | Maintain structural elements and age class variation of open forests and woodlands, and particularly ecotone areas through the targeted application of fire.                               | <b>3</b> |
| <b>Introduced weeds</b>   | Reduce the impacts of lantana, camphor laurel, cocos palms, umbrella trees, cat's claw creeper, crofton weed, cobbler's peg and cotton balloon, including along the powerline.             | <b>2</b> |
| <b>Introduced animals</b>   | Reduce impacts of deer in the open forests and woodlands.  | <b>3</b> |
|   | Prevent illegal domestic dog walking throughout the open forests and woodlands through community education and maintaining interpretation material.  | <b>4</b> |

See Appendix 1. Glossary for priority rating definitions.<sup>1</sup>

\* Zoning references in this document relate to the *Nerang Area Visitor Management Strategy* and can be identified in Section 3, Map 1.

## 4.4 Mountain bike riding experience

### Key value statement

| Description  |                       | Current condition  | Current trend   | Desired condition   |
|--|-----------------------|--|---|---|
| Regionally significant mountain biking experience. | Condition and trend   | 2021<br>     |              |  |
|  | Assessment confidence | Inferred<br> | Inferred<br> |   |

Nerang National Park provides a regionally significant mountain biking experience. Three international standard mountain bike trails were constructed for the Gold Coast Commonwealth Games held in 2018. These new trails led to a doubling of trail use to almost 140,000 users per year by 2020, and use is still increasing. Visitors can experience 20 approved trails (34 km) in the south-eastern corner of the park. The mountain biking experience within Zone\* 3 includes cross-country and touring trails, while Zones\* 4 and 5 offer more challenging riding opportunities with the technical features established as part of the Commonwealth Games. This spread of opportunity provides for diverse visitors, including beginners, families and mountain biking enthusiasts. The Commonwealth Games trails have also facilitated national and international level mountain-bike events in the park, including the National Schools Championships, Pan Pacific Masters Games, a stage of the Shimano World Enduro Series, as well as regular Gold Coast Mountain Bike Club events. The number of club social ride events is also increasing.

### Threats

**Primary threat:** Illegally constructed tracks (including some with elevated structures) that do not meet International Mountain Bicycling Association or construction standards are a potential safety risk to visitors. **Threat rating: Very high**

**Secondary threat:** Illegally constructed trails are impacting on the quality of experience for visitors when they cannot differentiate between approved trails and poorly designed or maintained illegal trails. **Threat rating: Very high**


**Other threat:** Poorly maintained and inappropriate drain spacing of management and fire tracks results in significant concentrated runoff, subsequently causing gully erosion and the transport of suspended and coarse sediments from the track surface, table drains and gullying from drain outlets. This impacts on the ability to maintain mountain bike trails in surrounding areas. **Threat rating: High**

**Other threat:** Deteriorated trails requiring maintenance, upgrades and signage are subsequently resulting in environmental impacts and reduced rider experience. **Threat rating: Medium**

**Other threat:** A lack of clear entry and trail head facilities in the mountain biking precinct, particularly in Zone\* 5, or adjacent to Zone\* 5 on Council lands, is reducing the experience for users of the park. **Threat rating: Low**

\* Zoning references in this document relate to the *Nerang Area Visitor Management Strategy* and can be identified in Section 3, Map 1.

**Desired outcome and strategic management direction**

| Desired outcome   |   |          |
|---|---|----------|
|  | The mountain biking experience will be maintained at <i>good with some concern</i> in the long term through the enhancement of trail design in Zones 4 and 5 of the park, the establishment of sustainable trail maintenance regimes and the prevention of risks to visitor safety. |          |
| Threatening processes   | Strategic management directions   | Priority |
| <b>Inappropriate facilities</b>   | Enhance the mountain biking experience by exploring a range of opportunities within Zones* 4 and 5, including improving track design, alignment, flow patterns and orientation of approved tracks.  | <b>2</b> |
|   | Enhance the visitor experience in the mountain biking precinct by working with Gold Coast City Council to improve entry, orientation and trail head facilities in Zone 5.   | <b>2</b> |
| <b>Loss of experience</b>   | Maintain the mountain bike trails throughout Zones* 3, 4 and 5 through appropriate management and resourcing.   | <b>2</b> |
| <b>Risk to visitor safety</b>   | Enhance the visitor safety of the mountain biking experience by decommissioning tracks, trails and bridges that are not part of the approved track network.   | <b>2</b> |

See Appendix 1. Glossary for priority rating definitions.

















## 5. Management direction

QPWS manages protected areas and forests to preserve their values and deliver our custodial obligations as a land manager. LoS assessment allows QPWS to consider the management of each park in a state-wide context and determine desired levels of management effort for each park in a consistent and equitable way. LoS assessment lets QPWS staff and the public know what type or level of management activity to expect on each park, forest and reserve. There are five LoS ratings ranging from 'acceptable' to 'exceptional': an acceptable rating is the minimum standard required to deliver good management and meet our legislative and custodial obligations.

The key areas for management in the Nerang Area are supporting the aspirations of the Danggan Balun (Five Rivers) People to manage their traditional Country, as well as fire, visitor and community interests. This section provides a **management direction statement** for each management theme, identifying its current LoS, desired LoS and the strategic management direction.

### Summary of management direction

A summary of the current and desired LoS for the Nerang Area is shown below; Figure 6 provides a key to the LoS icons.

|  | Current LoS  | Desired LoS  |
|--|--|--|
| 1. Fire management                             |  Very high   |  Very high   |
| 2. Pest management                             |  High       |  Very High  |
| 3. Natural values management                   |  Acceptable |  Very High  |
| 4. Post-contact cultural heritage management   |  Acceptable |  Acceptable |
| 5. Visitor management                          |  Medium     |  Very high  |
| 6. Community, partnerships and other interest  |  High       |  Very high  |
| 7. Field management capability                 |  Medium     |  High       |
| 8. Operational planning and management support |  High       |  Very High  |






|  |   |   |   |   |
|--|---|---|---|---|
| Acceptable   | Medium  | High  | Very high   | Exceptional   |
|   |  |  |  |  |
| <p>Based on an assessment of values, risks and threats, community interface challenges, custodial obligations and requirement for special management intervention, best practice management is achievable at either an 'acceptable', 'medium', 'high', 'very high' or 'exceptional' LoS.</p> |   |   |   |   |

Figure 6. Key to LoS icons



## 5.1 Fire management

### Management direction statement


| Description                     | Current level of service  |
|---------------------------------|---|
| Fire management for Nerang Area |  |

Fire management is core business for QPWS to protect life and property, mitigate wildfires and maintain natural diversity in accordance with the NCA and the *Fire and Emergency Services Act 1990* (Qld) for the control and prevention of fires. QPWS works cooperatively with First Nations peoples, state and local government agencies, rural fire brigades, adjoining landholders and local communities to manage fire across the landscape.

The strategic management direction in this management statement, combined with the Yugambah People's knowledge of traditional burning practices and the Queensland Government's *Planned Burn Guidelines: South East Queensland Bioregion*, will guide the formation of the *Nerang Area Fire Strategy*.

The strategy details QPWS's custodial obligations for protecting life and property, and fire management objectives for maintaining key values through the use of fire management zones.

### Desired level of service and strategic management direction

| Desired level of service  |  |
|---|--|
|    | Fire is managed to a <i>very high</i> level of service by maintaining knowledge, data collection and operational capacity. |
| Strategic management directions   | Priority   |
| <b>Custodial obligations</b>  |  |
| Protect to the highest possible extent neighbouring properties from bushfire impacts.   | 1  |
| <b>Level of service</b>   |  |
| Maintain current approach to fire management based on fire requirements of key values and regional ecosystems mapping, guided by the planned burn guidelines. | 3  |
| Maintain current level of consultation with neighbours, Queensland Fire and Emergency Services and relevant stakeholders.                                     | 3  |
| Maintain current priority of fire management to protect life and property and improve the condition of key values.  | 3  |

KEY: Priority ratings: Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.2 Pest management

### Management direction statement

| Description                     | Current level of service  |
|---------------------------------|---|
| Pest management for Nerang Area |  |

Pest management is core business for QPWS to mitigate the threats to biodiversity in accordance with the NCA. QPWS has a responsibility under the *Biosecurity Act 2014* (Qld) to take all reasonable and practical steps to minimise the risks associated with plant and animal pests on lands under our control. Recognising that effective management of pests across the landscape is a shared responsibility, QPWS works cooperatively with First Nations peoples, other state and local government agencies, landholders and natural resource management groups.

The strategic management directions in this management statement will guide the formation of the *Nerang Area Pest Strategy*. The strategy details pest management objectives for preventing and mitigating pest impacts on key values and QPWS's custodial obligations for managing pests and priority pest species.

### Desired level of service and strategic management direction

| Desired level of service  |  |
|---|--|
|  | Pests are managed to a <i>very high level</i> of service by maintaining the current approach to pest management. |

| Strategic management directions   | Priority |
|---|----------|
| <b>Custodial obligations</b>  |          |
| Meet custodial obligations under the <i>Gold Coast City Council Biosecurity Management Plan 2019–2024</i> .   | 1        |
| <b>Level of service</b>   |          |
| Maintain the level of knowledge of pests and their impacts on key values, and emerging pest threats.          | 3        |
| Increase current approach to engagement by establishing formal relationship with stakeholders and neighbours. | 1        |
| Prevent the establishment of pests that have the potential to impact on key values of Nerang National Park.   | 1        |

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.3 Natural values management

### Management direction statement

| Description                               | Current level of service  |
|---|---|
| Natural values management for Nerang Area |  |


QPWS manages natural values in accordance with the NCA, *Environmental Protection Act 1994* (Qld), *Environmental Protection and Biodiversity Conservation Act 1999* (Cwlth) and relevant international agreement guidelines.

The Nerang Area has significant values including endangered regional ecosystems, threatened species and species listed in international agreements. The national recovery plans for the grey-headed flying fox and koala will guide the management of the Nerang Area. The *South East Queensland Koala Conservation Strategy* will also provide information for the management of threats in the park. Future recovery plans established for the greater glider and glossy black cockatoo will inform management.

The condition of natural values will be monitored through the implementation of the *Nerang Area Monitoring and Research Strategy*.

Threatening processes will be managed through the implementation of the Nerang Area's fire, pest and visitor strategies.

### Desired level of service and strategic management direction

| Desired level of service   |
|--|
|  <p>Natural values will be managed to a <i>very high</i> level of service through increased knowledge and an increased capacity to monitor and assess the health of key values.</p> |
| Strategic management directions  |
| Priority   |

#### Level of service

|   |   |
|---|---|
| Increase knowledge of all natural area values and how they relate to key values.  | 3 |
| Improve relationships with stakeholders, particularly those involved in the cross-landscape management of Coombabah Lake wetland, including involvement in future research.         | 3 |
| Increase capacity to monitor and assess health of key values through a high level of regional and centric support.  | 4 |
| Improve knowledge of threats to greater gliders, koalas, grey-headed flying foxes and glossy black cockatoos to inform best practice management of these species and their habitat. | 3 |
| Investigate changes in vegetation patterns in Coombabah Lake, creek and adjacent tidal waterway and environs and the relationship to changes in tidal levels.                       | 3 |
| Increase knowledge on the role the Coombabah Creek headwaters play in Coombabah Lake's response to continued and projected changes in the climate.                                  | 4 |


#### Health check monitoring

|  |   |
|--|---|
| Monitor the condition of natural key values through health check monitoring. | 1 |
|--|---|

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).


## 5.4 Post-contact cultural heritage management

### Management direction statement

| Description   | Current level of service  |
|---|---|
| Post-contact cultural heritage management for Nerang Area |  |

No sites are listed on the Queensland Heritage Register or Australian National Heritage List.

### Desired level of service and strategic management direction

| Desired level of service  |   |
|---|---|
|  | Post-contact heritage is managed to an <i>acceptable</i> level of service through continued knowledge transfer on historic sites, values and stories. |
| Strategic management directions   | Priority  |
| <b>Level of service</b>   |   |
| Maintain knowledge of post-contact sites, values and stories.                     | 3   |
| Maintain consultation with stakeholders where relevant.                           | 3   |
| Maintain current approach to post-contact cultural values management.             | 3   |

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).



## 5.5 Visitor management


### Management direction statement

| Description                        | Current level of service  |
|------------------------------------|---|
| Visitor management for Nerang Area |  |

Queensland's parks, forests and reserves provide local communities and visitors from around the world with opportunities to experience our rich natural and cultural heritage, as well as a diverse range of recreational and ecotourism opportunities. QPWS seeks a responsible balance between visitor needs and sensitive park resources in accordance with the NCA and government policies and procedures. Permitted commercial tour activities, agreements and events are administered in accordance with the NCA and other relevant legislation. QPWS will identify, assess and manage hazards to visitor safety in accordance with relevant safety obligations.

The strategic management direction in this management plan guides the formation of the *Nerang Area Visitor Strategy*. The strategy details management objectives for key values and the desired management outcomes for visitor sites through zoning. Zoning and visitor site management objectives consider the physical, social and managerial impacts of the visitor experiences and sustainability of the sites. The strategy also explores visitor opportunities that complement other experiences in the landscape and region. The condition of, and visitor satisfaction with, visitor experiences will be monitored in accordance with the *Nerang Area Monitoring and Research Strategy*.

### Desired level of service and strategic management direction

| Desired level of service  |   |
|---|---|
|  | Visitors will be managed to a <i>very high</i> level of service by maintaining knowledge of visitor use, relationships with commercial operators and frequency of compliance patrols. |
| Strategic management directions   | Priority  |

#### Level of service

|  |   |
|--|---|
| Maintain approach to facilities management through sustainable and contemporary track design for mountain bike trails.   | 1 |
| Improve current knowledge of visitor use impacts by monitoring visitor numbers and regularly assessing the track network.  | 3 |
| Improve the approach to infrastructure management by rationalising the track network and ensuring approved tracks are on the QPWS asset management system to generate maintenance funding. | 2 |
| Increase knowledge of other visitor user groups accessing the park for organised events (particularly running events) that might be resulting in user conflicts.                           | 3 |
| Improve relationship with volunteer groups to ensure track maintenance is consistent with the strategic direction for visitor management at Nerang National Park.                          | 1 |
| Maintain current relationships with commercial tour operators as required.   | 3 |
| Maintain visitor safety on the mountain bike trails by sustaining relationships with track maintenance groups and volunteers.  | 2 |
| Improve current approach to visitor management, including frequency of patrols to discourage unauthorised trail building and use, and to prevent impacts on key values.                    | 1 |
| Support the development of a cycling code of conduct to encourage responsible riding practices.  | 3 |


#### Health check monitoring

|  |   |
|--|---|
| Monitor the condition of visitor key values through health check monitoring. | 1 |
|--|---|

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 5.6 Community, partnerships and other interests


### Management direction statement

| Description  | Current level of service  |
|--|---|
| Community, partnerships and other interests associated with Nerang Area. |  |

Queensland's parks, forests and reserves provide sustainable environmental, economic and social benefits. The agency is committed to working with the community and its partners to ensure activities and infrastructure are ecologically sustainable and continue to benefit Queensland's economic and social wellbeing, as outlined in *Queensland Parks and Wildlife Service's Master Plan* (QPWS 2014). Permitted activities are administered in accordance with the requirements of the NCA and other relevant legislation.

The Nerang Area is an important park for tourism and nature-based activities.

### Desired level of service and strategic management direction

| Desired level of service   |   |
|--|---|
|    | Community, partnerships and other interests will be managed to a <i>very high</i> level of service through improved engagement with park user groups. |
| Strategic management directions  | Priority  |
| <b>Level of service</b>  |   |
| Improve the relationship between QPWS and AusCycling to assist with the management of mountain bike recreation at Nerang National Park.                | 2   |
| Maintain relationship with Queensland Police Service to undertake compliance activities targeting illegal track building through Nerang National Park. | 1   |
| Increase conservation group involvement at Nerang National Park by establishing a 'Friends of Nerang' group.   | 1   |

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).


## 5.7 Field management capability

### Management direction statement

| Description                                 | Current level of service  |
|---|---|
| Field management capability for Nerang Area |  |

Managing natural and cultural areas has varying degrees of complexity. Field management capability is a measure of this complexity and considers the significance of the planning area's values, potential threats, intensity of visitor use and community expectations. It considers the required proximity, frequency and intensity of on-ground management that is needed to manage key values and meet custodial obligations. The rating provides QPWS with a means for gauging resource requirements and staff training needs.

### Desired level of service and strategic management direction


| Desired level of service  |   |
|---|---|
|  | Field management capability will be managed to a <i>high</i> level of service through continued information sharing and on-ground capability, with support from regional and central units. |

| Strategic management directions  | Priority |
|--|----------|
| <b>Level of service</b>  |          |
| Maintain staff knowledge and capacity to manage key values through ongoing training and information sharing with region's specialist staff.  | 3        |
| Improve field management capability by investigating additional resource options that reflect the time and effort required to increase on-ground presence, protect key values and maintain mountain bike trails. | 3        |

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).


## 5.8 Operational planning and management support

### Management direction statement

| Description   | Current level of service  |
|---|---|
| Operational planning and management support for Nerang Area |  |

Operational planning and management support covers all aspects of management direction, including information, assessments, systems, tools and monitoring. As with field management capability, the area's values, potential threats, intensity of visitor use and community expectations are considered when determining the appropriate levels of service.

### Desired level of service and strategic management direction

| Desired level of service  |  |
|---|--|
|    | Operational planning and management support will be managed to a <i>very high</i> level of service through continued regional and central support for planning and service delivery. |
| Strategic management directions   | Priority   |
| <b>Level of service</b>   |  |
| Maintain planning capability through support from regional technical support teams and central units.   | 3  |
| Investigate the appropriateness of tenure actions to convert Zones* 4 and 5 to conservation park to better reflect the intended recreation use for the area under the <i>Nature Conservation Act 1992</i> . | 1  |

**KEY: Priority ratings:** Scale 1 (extremely urgent and extremely necessary) to 5 (optional and not urgent).

## 6. References

Atlas of Living Australia (2021). *Atlas of Living Australia Database*. <https://www.ala.org.au/>. Date accessed: 3 December 2021.

Appleton, J. (2021). Determination of Ecological Values (Desktop Assessment and Biocondition Survey) Nerang National Park. Unpublished report by BAAM PTY Ltd 0027-011.

Botsch, Y., Tablado, Z., Scherl, D., Kery, M., Graf, R.F. & Jenni, L. (2018). Effect of recreational trails in forest birds: human presence matters. *Frontiers Ecology and Evolution*. V.6. <https://www.frontiersin.org/articles/10.3389/fevo.2018.00175>. doi: 10.3389/fevo.2018.00175.

Burgin, S. & Hardiman, N. (2012). Extreme sports in natural areas: looming disaster or a catalyst for a paradigm shift in land use planning? *Journal of Environmental Planning and Management*. 55:7, 921–940. doi: 10.1080/09640568.2011.634228.

Davis, C.A., Leslie, D.M., Walter, D.W. & Graber, A.E. (2010). Mountain biking trail use affects reproductive success of nesting golden-cheeked warblers. *The Wilson Journal of Ornithology*. 122 (3): 465–474. doi: <https://doi.org/10.1676/09-184.1>.

Department of Agriculture, Water and the Environment (DAWE) (2021). *Species Profile and Threats Database*, Department of the Environment, Canberra. <http://www.environment.gov.au/sprat>.

Department of Climate Change, Energy, the Environment and Water (2019). *Directory of Important Wetlands in Australia – Information sheet*. [https://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW&doiw\\_refcodelist=QLD194](https://www.environment.gov.au/cgi-bin/wetlands/report.pl?smode=DOIW&doiw_refcodelist=QLD194). Date accessed: 1 June 2021.

Department of Environment and Science (2021). *Investigating Coombabah Lake and Creek, Gold Coast*. <https://wetlandinfo.des.qld.gov.au/resources/static/pdf/resources/fact-sheets/fs/coombabah-factsheet-19072021.pdf>.

Lathrop, J. (2003). Ecological impacts of mountain biking: a critical literature review, *Wildlands CPC*. June. Pp. 1–5. <http://www.wildlandscpr.org/ecological-impacts/mountain-biking-critical-literature-review>.

Marion, J. & Wimpey, J. (2007). Environmental impacts of mountain biking: science review and best practices. *Managing Mountain Biking, IMBA's Guide to Providing Great Riding*. International Mountain Bicycling Association (IMBA) Boulder, CO, 94-111.

Miller, Scott G. (1998). Environmental impacts: the dark side of outdoor recreation? *Outdoor Recreation: Promise and Peril in the New West (Summer Conference, June 8–10)*. <https://scholar.law.colorado.edu/outdoor-recreation-promise-and-peril-in-new-west/4>.

Pickering, C.M. & Hill, W. (2007). Impacts of recreation and tourism on plant biodiversity and vegetation in protected areas in Australia. *J Environ Manage*. 85(4): 791–800. doi: 10.1016/j.jenvman.2006.11.021. Epub. PMID: 17234325.

Quinn, M. & Chernoff, G. (2010). Mountain biking: a review of the ecological effects. *A Literature Review for Parks Canada*. National Office (Visitor Experience Branch), 1–38.

Thompson, B. (2015). Recreational trails reduce the density of ground-dwelling birds in protected areas. *Environmental Management*. 55, 1181-1190



# Appendix 1. Glossary

## Interpreting key values-based management framework concepts

|  |  |
|--|--|
| <b>Adaptive management</b>                             | The process of adjusting and improving how we manage parks, forests and reserves after assessing the outcomes of previous strategies and on-ground actions.  |
| <b>Condition and trend</b>                             | The condition of a key value is assessed as either good, good with some concern, significant concern or critical. Trend describes what is happening to the condition: is it improving, stable or deteriorating? A key value's current condition is determined during the planning process. A desired condition is a realistic goal for the future condition of the key value. The ongoing condition of key values is assessed with regular health checks, monitoring and scientific assessment.  |
| <b>Custodial obligations</b>                           | The requirements in legislation and government policies that we, as the land management agency, have to ensure QPWS's parks, forests and reserves are lawfully managed and good neighbours. Management provides for the protection of life and property, biosecurity and positive relationships with adjacent communities and landholders, as well as enhancing and protecting our values.   |
| <b>Desired outcome</b>                                 | A statement in the key value and management direction statements about moving from the current status (condition or LoS) to a desired status. The goal for management.   |
| <b>Health check</b>                                    | Basic form of monitoring that uses indicators and visual assessments to regularly evaluate the condition of key values. Regular health checks ensure QPWS can respond quickly to adverse change and redirect management priorities.  |
| <b>Key value</b>                                       | A natural, cultural or social value that is of most significance to that area. It is what makes the area special, and if lost, would diminish what makes the area distinct from others.  |
| <b>Key value statement</b>                             | A statement in the management plan/statement that is developed for each key value. It describes the key value, current condition, desired condition, current threats and threat ratings, strategic management direction and priorities for further thematic strategy planning and on-ground management action.   |
| <b>Level of service (LoS)</b>                          | A planning tool used to identify the acceptable management standard or level of resourcing that is required to maintain an area based on its values, threats and the complexity of management. There are five LoS ratings ranging from 'acceptable' to 'exceptional', noting that an acceptable rating is the minimum standard required to deliver good management and meet our custodial obligations under law as a land manager. A 'current' LoS rating is the level at the time of planning, the 'desired' LoS is where we want to be.  |
| <b>Management direction</b>                            | How we manage each management theme to protect and enhance our key values and meet our custodial management obligations.   |
| <b>Management direction statement</b>                  | A statement in the management plan/statement, developed for each management theme, that describes the current LoS, desired LoS, custodial obligations, strategic management direction and priorities for further thematic strategy planning and on-ground management action.   |
| <b>Management theme</b>                                | QPWS has identified a number of management themes that are common to most of the parks, forests and reserves in our estate: fire management; pest management; natural values management; post-contact cultural heritage; visitor management; community, partnerships and other interests; field management capability; and operational planning and management support.  |
| <b>Priority rating (key value SMDs)</b>                | <p>A rating given to a strategic management direction according to the need for action to prevent further decline, stabilise current condition, or restore and enhance values, with consideration given to legislative obligations, cost, and social, economic and political factors.</p> <p>Critical (1) – Loss or very significant decline in the condition of key value/s is highly likely if action not taken OR significant improvement in the condition of key value/s is highly likely if action is taken.</p> <p>Very high (2) – Significant decline in the condition of key value/s is likely if action is not taken OR significant improvement in the condition of key value/s is likely if action is taken.</p> <p>High (3) – Decline in the condition of key value/s is likely if action is not taken OR improvement in the condition of key value/s is likely if action is taken.</p> <p>Moderate (4) – Some decline in the condition of key value/s is possible if action is not taken OR some improvement in the condition of key value/s is possible if action is taken.</p> <p>Desirable (5) – While decline in the condition of key value/s is not likely in the short term, the action, if taken, would help build long-term resilience of key value/s.</p> |
| <b>Priority rating (LoS SMDs)</b>                      | A rating given to an LoS or custodial obligation strategic management direction. A scale from 1 (extremely urgent) to 5 (not urgent or optional) is assigned, with consideration given to legislative obligations, cost, and social, economic and political factors.   |
| <b>Strategic management direction (SMD)</b>            | A broad strategy aimed at mitigating or removing a threat to a key value and maintaining or improving the condition of a park's value; or addressing the gap between the current LoS and desired LoS for a management theme.   |
| <b>Threat or threatening process and threat rating</b> | Based on IUCN's (International Union for Conservation of Nature) classifications, QPWS has identified threatening processes that have the potential to affect Queensland's values (e.g. natural systems modifications, invasive species). Current threats to key values are identified and given a threat rating based on a combination of the extent of the impact, the severity of the impact, and the urgency of action.  |