



Plan of Management



Back River Nature Reserve and Tomalla Nature Reserve

**BACK RIVER NATURE RESERVE AND
TOMALLA NATURE RESERVE**

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

December, 2011

This plan of management was adopted by the Minister for the Environment on 12 December 2011.

Acknowledgments

The National Parks and Wildlife Service acknowledges that Back River and Tomalla Nature Reserves are in the traditional country of the Aniwan Aboriginal people.

This plan of management is based on a draft plan prepared by the staff of the Hunter Region of the NSW National Parks and Wildlife Service, part of the Office of Environment and Heritage, Department of Premier and Cabinet. Valuable information and comments were provided by neighbours, staff, and other agencies.

FRONT COVER: Treefern in Tomalla Nature Reserve, by Catherine Watt, NPWS.

For additional information or inquiries about Back River and Tomalla Nature Reserves or this plan of management, contact the NPWS Upper Hunter Area Office, 137 Kelly Street, Scone or by telephone on (02) 6540 2300.

Published by:
Office of Environment and Heritage
59–61 Goulburn Street
PO Box A290
Sydney South 1232

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ISBN 978 1 74293 470 9

OEH 2012/0053

Printed on recycled paper

FOREWORD

Back River Nature Reserve and Tomalla Nature Reserve are located approximately 60 kilometres south-east of Tamworth and 70 kilometres north-east of Scone. Both were reserved in January 1999. Back River Nature Reserve has an area of 735 hectares while Tomalla Nature Reserve has an area of 605 hectares.

Back River and Tomalla Nature Reserves form part of a string of reserved lands along the Great Divide and Liverpool Range that assist in maintaining, improving and reconnecting islands of natural vegetation along the great eastern ranges. They contain good examples of ecosystems that are poorly reserved, and are important for the diversity of fauna habitats that they provide. Two endangered and three vulnerable plant species and five vulnerable animal species have been recorded in the reserves.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A draft plan of management for Back River and Tomalla Nature Reserves was placed on public exhibition from 5 November 2010 until 21 February 2011. The submissions received were carefully considered before adopting this plan.

The plan contains a number of actions to achieve the NSW 2021 goal to protect our natural environment, including the implementation of actions to assist the recovery of threatened species, monitoring for phytophthora and actions to control its spread, and control of introduced plants and animals. The plan also provides for recreation activities such as bushwalking and bird watching in the reserves.

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

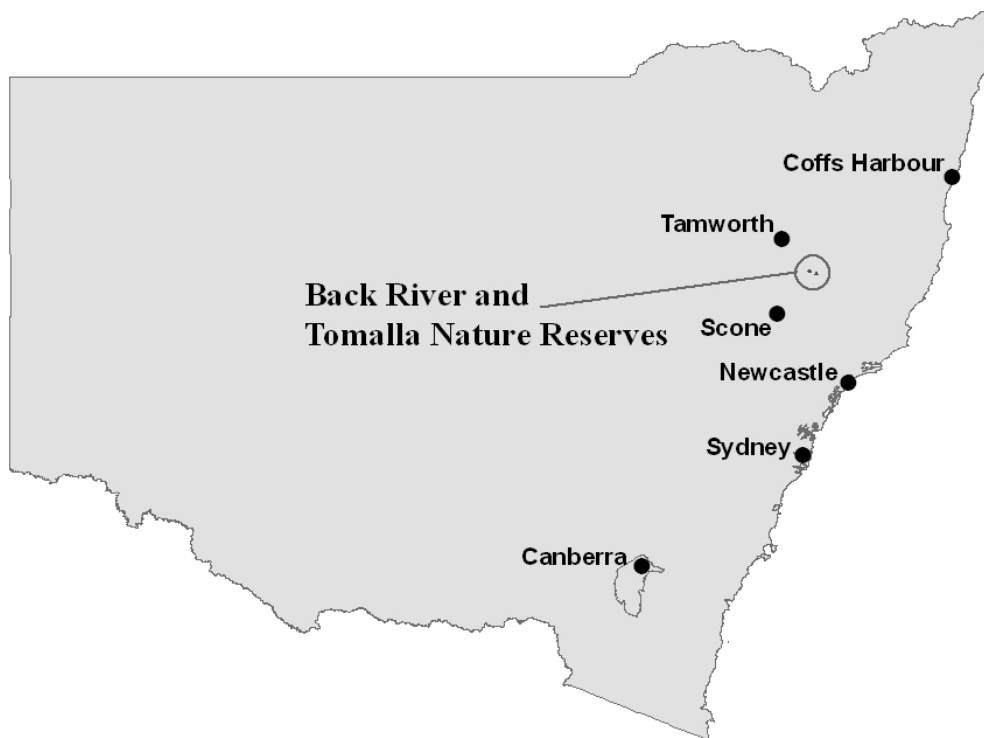


Robyn Parker MP
Minister for the Environment

1. LOCATION, GAZETTAL AND REGIONAL CONTEXT

Back River and Tomalla Nature Reserves (the Reserves) are located approximately 60 kilometres south-east of Tamworth and 70 kilometres north-east of Scone as shown below (see also Maps 2 and 3 on pages 3 and 4). Back River Nature Reserve is approximately 16 kilometres east of the township of Nundle and covers an area of 735 hectares. Tomalla Nature Reserve is 7 kilometres east of Back River Nature Reserve and covers an area of 605 hectares.

MAP 1. STATE LOCATION MAP



The North East NSW Regional Forest Agreement (RFA) provided for major additions to the park system, including the Reserves which were gazetted on 1st January 1999. RFAs are one of the principal means of implementing the National Forest Policy Statement of 1992, under which the Commonwealth, State and Territory governments agreed to work towards a shared vision for Australia's forests which provides for, among other things, ecologically sustainable forest management.

The majority of land surrounding the Reserves is forested and managed for native timber and pine plantation production by Forests NSW. Back River Nature Reserve adjoins Nundle State Forest to the north and Hanging Rock State Forest to the north and west, and was previously part of the Hanging Rock State Forest. Tomalla Nature Reserve was previously part of Tomalla State Forest. Private property surrounding the Reserves includes forested areas that are used for grazing and timber production, and cleared areas west of Tomalla Nature Reserve that are used for grazing.

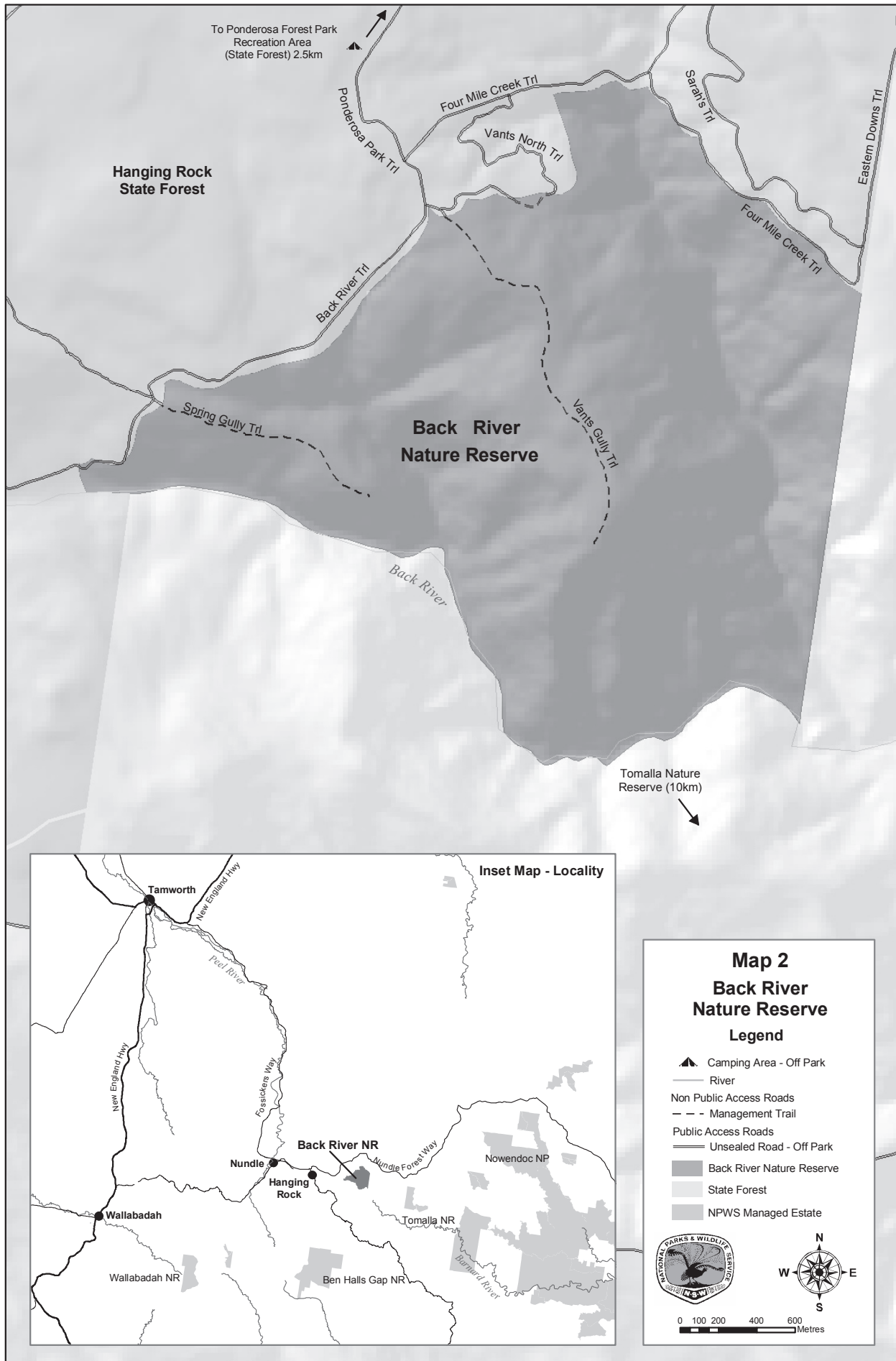
The Reserves are situated on the southern edge and fall of the Walcha Plateau subregion of the New England Tablelands bioregion. This southern edge forms the boundary between the New England Tablelands bioregion and the Tomalla subregion of the NSW North Coast bioregion, with the south-eastern part of Tomalla occurring within the NSW North Coast bioregion.

As well as the Reserves, the area covered by this plan includes a small section of Tomalla Forest Way, which is vested in the Minister under Part 11 of the NPW Act to ensure a continuation of access arrangements to neighbouring state forest (refer to Reserve Map 3).

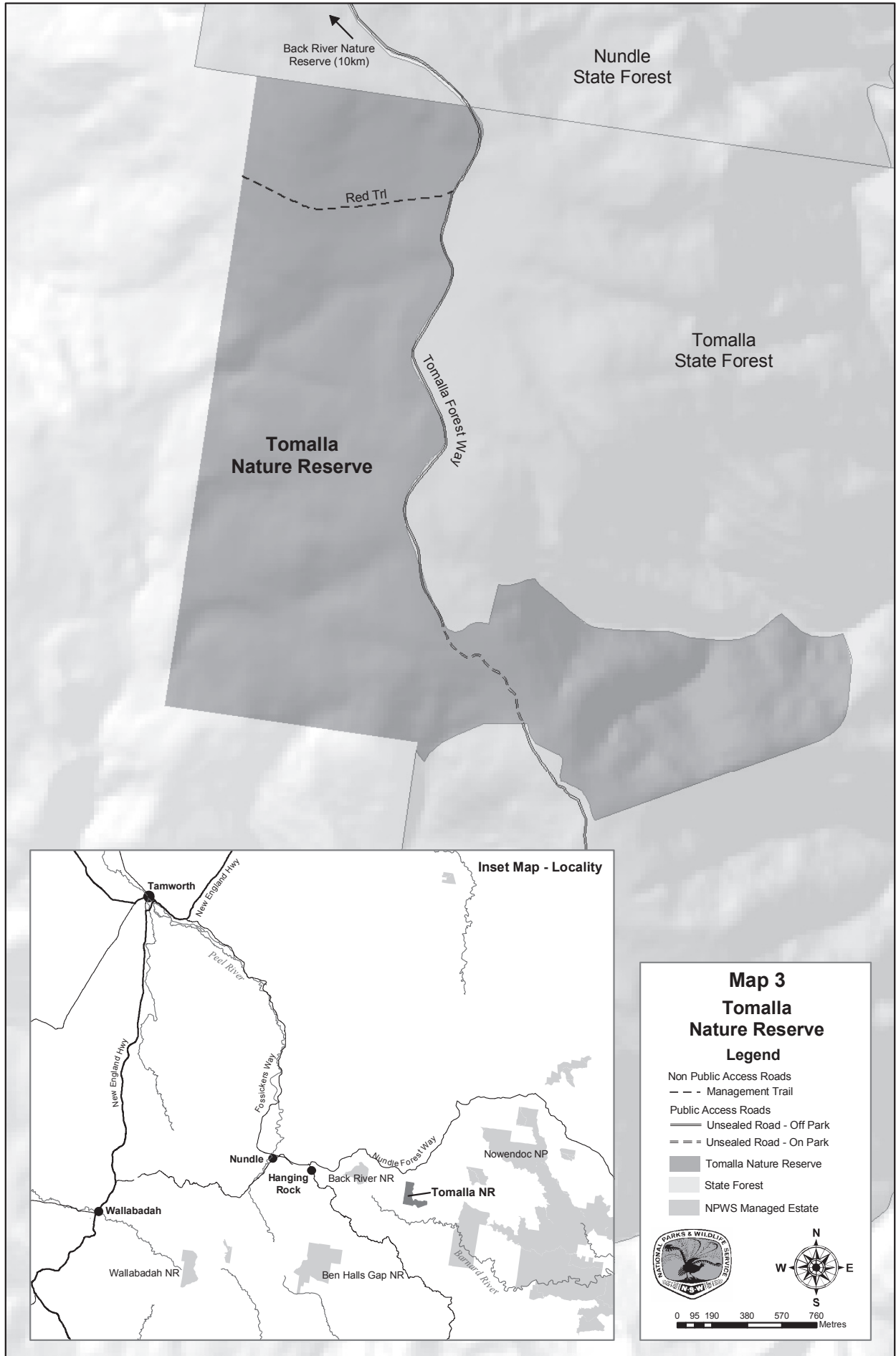
The Reserves contain good examples of ecosystems that are poorly reserved, and are important for the diversity of fauna habitats that they provide. They form part of a string of reserved lands along the Great Divide and Liverpool Range that assist in maintaining, improving and reconnecting islands of natural vegetation along the great eastern ranges. These lands include Crawney Pass, Ben Halls Gap, Nowendoc and Curracabundi National Parks, Wallabadah, Tuggolo Creek and Ngulin Nature Reserves, and a nearby Voluntary Conservation Area.

The Reserves are within the geographical area of the Tamworth Regional Council (formerly Nundle Shire), the Hunter-Central Rivers Catchment Management Authority, and the Nungaroo Local Aboriginal Land Council.

MAP 2. BACK RIVER NATURE RESERVE



MAP 3. TOMALLA NATURE RESERVE



2. MANAGEMENT CONTEXT

2.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of nature reserves in NSW is in the context of a legislative and policy framework, primarily the NPW Act, the NPW Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the NPWS.

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also applies in relation to actions that may impact on threatened species listed under the EPBC Act.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within Back River or Tomalla Nature Reserves except in accordance with the plan. The plan will also apply to any future additions to Back River or Tomalla Nature Reserves. Should management strategies or works be proposed for the Reserves or any additions that are not consistent with this plan, an amendment to the plan or a new plan will be prepared and exhibited for public comment.

2.2 MANAGEMENT PURPOSES AND PRINCIPLES

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

Under the NPW Act (section 30J), nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

Nature reserves differ from national parks in that they do not have the provision of recreation as a management principle.

2.3 STATEMENT OF SIGNIFICANCE

Back River Nature Reserve is significant as it forms part of a major regional corridor linking the Mount Royal Range to the Great Dividing Range. Tomalla Nature Reserve is significant as it forms part of a regional corridor that links Back River Nature Reserve and Ben Halls Gap National Park and also provides linkages to the Hanging Rock/Nundle/Dungowan and Tuggolo areas.

The Reserves are also considered to be of significance for a number of Biological Values:

- They occur near the junction of three bioregions: Nandewar, New England Tablelands and NSW North Coast;
- They contain threatened plant and animal species listed under the TSC Act and ecosystems occurring near the edge of their range; and
- They contain key habitat areas for a range of species.

2.4 SPECIFIC MANAGEMENT DIRECTIONS

In addition to the general principles for the management of nature reserves (refer section 2.2), the following specific management directions apply to the management of the Reserves:

- Control, and where possible eradicate, introduced plant and animal species;
- Protect and monitor threatened and biogeographically significant species and communities;
- Involve Aboriginal people in the management of cultural heritage values;
- Protect water catchment values;
- Implement fire regimes to protect life and property and maintain the diversity of vegetation communities;
- Engender greater public awareness and appreciation for the values and management of the Reserves; and
- Maintain good working relationships with neighbours, local council authorities, government departments and other agencies to enhance the protection and viability of the Reserves.

Weeds, pests and fire are fundamental management considerations for the Reserves. Maintenance of a system of management trails for NPWS access to the Reserves is essential to enable NPWS to carry out core management functions.

3. VALUES

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness, various aspects of natural heritage, cultural heritage, threats and on-going use are dealt with individually, but their inter-relationships are recognised.

3.1 GEOLOGY, LANDSCAPE AND HYDROLOGY

Geologically, both Reserves are part of the New England Fold Belt, which was subject to widespread folding and faulting during the late Permian period. The result of this was extensive metamorphism of the existing rocks and led to the rock types found today, including cherty argillite, limestone, schist, slate, amphibolite and jasper.

The Reserves are dominated by two major landforms, the high elevation plateau of the New England Tableland in the northern and western parts and the steep river gorges associated with the dissected folds of the Great Escarpment to the south and east. The Reserves range from 1300 metres in elevation on the plateau to less than 800 metres in the river valleys with slopes of over 30 degrees.

Back River Nature Reserve is relatively small, containing rugged, inaccessible terrain with two ridges rising steeply from the creeks and Back River. Vants Gully Creek and Four Mile Creek dissect Back River Nature Reserve, draining into Back River which forms the Reserve's southern boundary. Back River drains east into the Barnard River which forms part of the Manning River catchment.

Although the majority of Tomalla Nature Reserve is high elevation plateau country, the western falls form catchments for a number of un-named tributaries, which drain into Back River to the south. The eastern falls drain into Tomalla Creek, which also drains south into the Barnard River.

Most soils in Back River Nature Reserve are low quartz sedimentary Chichester Colluvials of the Escarpments and Ranges Province. A narrow strip of ultra basic-basic Guyra Residual soils of volcanic and hypabyssal origin runs along the ridgeline on which Vants Gully Trail is located. A small area south of Spring Gully in the south-west of the Reserve is ultra basic-basic Ant Hill Colluvials of the Liverpool Ranges Province.

Most of Tomalla Nature Reserve is Ant Hill Colluvials, while the very steep section to the east of Tomalla Forest Way is Chichester Colluvials. Ant Hill Colluvials of the Murrurundi 1:100,000 mapsheet are subject to widespread erosion hazards, with localised rock outcrop, mass movement hazard, rockfall hazard, high run-on, sodicity / dispersion and shallow soils (McInnes-Clarke, 2002).

A report that evaluated the soil capabilities of the Reserves identified them as having a low to moderate erosion hazard (ERM Mitchell McCotter Pty Ltd, 1995). The most likely sites for erosion within the Reserves are on roads and trails. To mitigate the risk of

erosion in the Reserves best practice guidelines are followed e.g. use of roads is discouraged during wet weather.

Illegal vehicle access exacerbates the risk of erosion in the Reserves (refer to section 4). Unauthorised vehicle and trail bike access are managed to reduce the risk of erosion.

3.2 NATIVE PLANTS

Few floristic surveys have been undertaken in the Reserves. Broad forest type mapping undertaken by Forests NSW (Chapman and Binns, 1995) exists for the Reserves as well as some vegetation plot data. Forest ecosystems were also modelled as part of the Comprehensive Regional Assessment (CRA) process for the Lower North East of NSW. A brief vegetation survey of Back River Nature Reserve has been undertaken (Copeland, 2006).

Dry Sclerophyll Forest with a mainly grassy understorey is the dominant vegetation type occurring in both Reserves, where it occurs with a mainly grassy understorey. Small sections of Rainforest also occur along the major drainage lines.

Back River Nature Reserve

Copeland (2006) describes three dominant vegetation communities and lists 218 vascular plant species, including several threatened plant species.

The majority of the Reserve is a Layered Open Forest community dominated by narrow-leaved peppermint (*Eucalyptus radiata* subsp. *sejuncta*), messmate stringybark (*E. obliqua*) and mountain ribbon gum (*E. obliqua*). Tall mountain ribbon gum is most common in the more sheltered gullies, whilst on the plateau and ridge tops narrow-leaved peppermint is dominant. Scattered throughout this community are also individuals of New England blackbutt (*E. campanulata*), silver-top stringybark (*E. laevopinea*) and diehard stringybark (*E. cameronii*).

The shrub layer in the layered open forest is usually fairly dense and is dominated by broom heath (*Monotoca scoparia*), lance-leaf beard-heath (*Leucopogon lanceolatus* var. *lanceolatus*) and, in moister areas pepper bush (*Tasmannia stipitata*). The ground layer is dominated by spiny mat-rush (*Lomandra longifolia*) and bracken fern (*Pteridium esculentum*) which often forms a thick layer beneath which is snow grass (*Poa sieberiana*) usually grows.

Riparian Shrub Thicket community occurs along many of the drainage lines on the plateau. These dense thickets are dominated by common tea tree (*Leptospermum polygalifolium* subsp. *transmontanum*). Emerging through the dense canopy are occasional individuals of mountain ribbon gum and white banksia (*Banksia integrifolia* subsp. *monticola*). Beneath the tea tree thicket are many ferns including the tall, conspicuous soft treefern (*Dicksonia antarctica*). Fishbone water-fern (*Blechnum nudum*) and mother shield-fern (*Polystichum proliferum*) forms a second fern layer. *Austrolina pusilla* is particularly abundant in Back River Nature Reserve, but is fairly restricted and uncommon on the Northern Tablelands.

Gallery Rainforest community up to 50 metres wide occurs along the major drainage lines below the escarpment of Back River, Vants Gully, Spring Gully and Four Mile

Creek. This well-developed rainforest community is dominated by sassafras (*Doryphora sassafras*) intermixed with occasional emergents of mountain ribbon gum towering above the white banksia, possumwood (*Quintinia sieberi*) and black olive-berry (*Elaeocarpus holopetalus*). A tall shrub layer of tree lomatia (*Lomatia arborescens*) is usually just beneath the canopy while tree violet (*Hymenanthera dentata*) often forms a thick layer two metres above the ground. In comparison with other rainforest communities, the gallery rainforest in Back River Nature Reserve is relatively depauperate in tree and shrub species. Epiphytes and vines are rare with the notable exception of kangaroo fern (*Microsorium pustulatum*) which is very common on lower tree trunks and exposed rock faces. The ground layer is often covered by a range of smaller ferns with fishbone water-fern, gristle fern (*Blechnum cartilagineum*), shield-fern (*Arachniodes aristata*) and trim shield-fern (*Lastreopsis decomposita*) being the most common.

A number of species are of conservation significance, as summarised in Table 1.

Table 1: Threatened and significant plant species recorded in Back River Nature Reserve.

Common name	Scientific name	TSC Act Status	Conservation significance	Occurrence
Tall velvet sea-berry	<i>Haloragis exalata</i> ssp. <i>velutina</i>	V*#	^3VC-	Known in Reserve
Dungowan starbush	<i>Asterolasia</i> sp. 'Dungowan Creek'	E*	Regionally Significant	Known in Reserve
	<i>Chiloglottis sphyrnoides</i>		^3KC-	Known in Reserve
Elegant greenhood	<i>Pterostylis elegans</i>	V*	Regionally Significant	Known in Reserve

* Status under TSC Act (V = vulnerable, E = endangered)

Also listed as vulnerable under the EPBC Act

^ Denotes species listed as a Rare or Threatened Australian Plant (ROTAP) according to Briggs and Leigh (1996). ROTAP codes:

3 = geographic range in Australia greater than 100 km

K = Poorly Known.

C = Reserved. At least one population in National Park or other proclaimed reserve(s).

V = Vulnerable.

- = Reserved population size is not adequately known.

Tomalla Nature Reserve

Tomalla Nature Reserve predominantly contains Diehard Stringybark-New England Blackbutt and Dry Silvertop Stringybark-Apple communities. The eastern sections of the Reserve, in the steep and rugged rocky outcrops/scree slope topography of the gorge, contain Dry Grassy Stringybark and Dry Silvertop Stringybark-Apple forest ecosystems. Diehard Stringybark-New England Blackbutt forest ecosystem is likely on the rim of the gorge. Rainforest is present along the creeks on the northern edge of the eastern arm of the Reserve. Cool Moist Messmate and Messmate-Mountain Gum forest ecosystems are likely to occur on the plateau where soils are shallower or sites are colder and more exposed.

The grassy forests of Tomalla Nature Reserve are typically tall and open with a sparse shrub layer and a dense herb and grass understorey. Commonly found tree species are silvertop stringybark (*Eucalyptus laevopinea*), diehard stringybark (*E. cameronii*), narrow-leaved peppermint (*E. radiata* ssp. *sejuncta*), New England blackbutt (*E.*

campanulata), messmate (*E. obliqua*), ribbon gum (*E. nobilis*), New England stringybark (*E. caliginosa*) and mountain gum (*E. dalrympleana*). Where present, sparse shrub layers are dominated by broad-leaved hickory (*Acacia falciformis*), *Leucopogon lanceolatus* var. *lanceolatus* and narrow-leaved geebung (*Persoonia linearis*). A number of fern and grass species make up the thick understorey including bracken (*Pteridium esculentum*), spiny-headed mat-rush (*Lomandra longifolia*), snowgrass (*Poa sieberiana*) and Paroo lily (*Dianella caerulea*).

Old growth forest in Tomalla Nature Reserve is confined to the rugged topography in the far eastern section of the Reserve. The high plateau country to the west has previously been logged and has few mature trees.

Approximately 90 flora species have been recorded in Tomalla Nature Reserve (NPWS, 2004). Eleven of these are of conservation significance, as summarised in Table 2.

Table 2: Threatened and significant plant species recorded in the Tomalla Nature Reserve area.

Common name	Scientific name	TSC Act Status	Conservation significance	Occurrence
Barrington wattle	<i>Acacia barringtonensis</i>	-	^3RCA	Known in Reserve
Wedge-leaved guinea flower	<i>Hibbertia hermanniifolia</i>	-	^3RCA	Known in Reserve
Bendemeer white gum	<i>Eucalyptus elliptica</i>	-	^3KC-	Modelled Habitat
New England bush-pea	<i>Pultenaea campbellii</i>	Former V*	^3K; Bioregional Endemic	Known in Reserve
White-flowered wax plant	<i>Cynanchum elegans</i>	E*	Endangered	Known in Reserve
Blush daisy bush	<i>Olearia myrsinoides</i>	-	Rare	Known in Reserve
-	<i>Olearia sp. aff. erubescens</i>	-	Critically Threatened Endangered, Bioregional Endemic	Known in Reserve
-	<i>Olearia covenyi</i>	-	Regionally Significant Rare, Disjunct	Known in Reserve
Ground orchid	<i>Pterostylis torquata</i>	-	-	Modelled Habitat
Barrington Tops Ant Orchid	<i>Chiloglottis platyptera</i>	V*	-	Known in Reserve
Waxy bluebell	<i>Wahlenbergia ceracea</i>	-	Regionally Significant	Within 10km of Reserve

* Status under TSC Act (V = vulnerable, E = endangered)

Also listed as vulnerable under the EPBC Act

^ = Denotes species listed as a Rare or Threatened Australian Plant (ROTAP) according to Briggs and Leigh (1996). ROTAP codes:

3 = geographic range in Australia greater than 100 km.

R = rare.

K = Poorly Known.

C = Reserved. At least one population in National Park or other proclaimed reserve(s).

A = 1000 plants or more are known to occur within a conservation reserve(s).

- = Reserved population size is not adequately known.

Under the TSC Act, a Threatened Species Priorities Action Statement has been prepared which identifies actions and strategies to promote the recovery of threatened species populations and ecological communities. Priority actions and recovery plans will be used to guide management of threatened species in the Reserves. Often priority actions apply to a number of threatened species.

The CRA and RFA for the Lower North East determined a number of forest communities to be of conservation significance including rainforest, peppermint and cool moist messmate. Peppermint is recognised as being a vulnerable ecosystem that has been more than 70% cleared and is poorly reserved. Cool Moist Messmate, Messmate-Mountain Gum and Messmate ecosystems have also been heavily cleared and are poorly reserved.

Old growth forests are considered to be of high conservation value because they contain many structural and compositional attributes that provide important fauna habitat.

Introduced plant species, pest animals and inappropriate fire regimes are considered threats to native plants in both Reserves (refer to section 4 for further information).

3.3 NATIVE ANIMALS

The Reserves contain a wide diversity of habitats for a range of forest fauna. Key habitats, which are areas of predicted high conservation value for forest fauna, have been mapped along the major north-south ridge in the centre of the Back River Nature Reserve, and along the entire eastern boundary and the central southern portion of Tomalla Nature Reserve.

All of Back River Nature Reserve is part of a major, regional fauna and flora corridor from Ben Halls Gap to Hanging Rock, as is a strip along the eastern boundary of Tomalla Nature Reserve. It establishes vegetation connectivity from the North Coast and New England Tablelands west to the North-west Slopes and Plains via corridors and stepping stones. It is one of the most important locations for east-west connectivity in north-east NSW (NPWS, 2004).

Over 30 native vertebrate fauna species have been recorded within Back River Nature Reserve. These include one vulnerable species listed under the TSC Act and three regionally significant species (NPWS, 2004).

Table 3. Threatened and significant animal species recorded in Back River Nature Reserve.

Common name	Scientific name	Status
Powerful owl	<i>Ninox strenua</i>	Vulnerable*
Greater glider	<i>Petauroides volans</i>	Regionally significant
Platypus	<i>Ornithorhynchus anatinus</i>	Regionally significant
Common wombat	<i>Vombatus ursinus</i>	Regionally significant

* Status under TSC Act.

The availability of suitable tree hollows provides nesting areas for greater gliders (*Petauroides volans*), common ringtail possums (*Pseudocheirus peregrinus*) and the mountain brushtail possum (*Trichosurus caninus*). These tree dwellers are some of the

favoured prey of the powerful owl (*Ninox strenua*). Other mammal species found in the Back River Nature Reserve include the eastern grey kangaroo (*Macropus giganteus*), red-necked wallaby (*Macropus rufogriseus*), common wallaroo (*Macropus robustus*), short-beaked echidna (*Tachyglossus aculeatus*), yellow-footed antechinus (*Antechinus flavipes*) and bush rat (*Rattus fuscipes*).

Over 180 native vertebrate fauna species have been recorded within a 10 kilometre radius of Back River Nature Reserve. This includes eight species listed as vulnerable under the TSC Act and seven regionally significant species (NPWS, 2004).

High quality habitat has been predicted within Back River Nature Reserve for over 40 threatened and significant species and lower quality habitat is predicted for a further 40 threatened and significant species (NPWS, 2004; Spark, P. 2004, pers. comm.).

Threatened species listed under the TSC Act considered most likely to occur in Back River Nature Reserve are those that have been recorded within a 10 kilometre radius and for which there is also high quality habitat predicted within the Reserve. These include the vulnerable glandular frog (*Litoria subglandulosa*), eastern false pipistrelle (*Falsistrellus tasmaniensis*), common bent-wing bat (*Miniopterus schreibersii*), sooty owl (*Tyto tenebricosa*), koala (*Phascolarctos cinereus*) and yellow-bellied glider (*Petaurus australis*). Regionally significant species include the white-lipped snake (*Drysdalia coronoides*), bibron's toadlet (*Pseudophryne bibronii*), alpine meadow-skink (*Eulamprus kosciuskoi*), forest raven (*Corvus tasmanicus*), montane sunskink (*Lampropholis caligula*), white-striped freetail bat (*Nyctinomus australis*) and brush bronzewing (*Phaps elegans*). The crested shrike-tit (*Falcunculus frontatus*) and three-toed skink (*Saiphos equalis*) are considered biodiversity indicator species and are found within the 10 kilometre radius and have significant areas of potential habitat.

Over 25 native vertebrate fauna species have been recorded within Tomalla Nature Reserve. These include four vulnerable species listed under the TSC Act and two regionally significant species (NPWS, 2004).

Table 4. Threatened and significant animal species recorded in Tomalla Nature Reserve.

Common name	Scientific name	Status
Squirrel glider	<i>Petaurus norfolcensis</i>	Vulnerable*
Koala	<i>Phascolarctos cinereus</i>	Vulnerable*
Spotted-tailed quoll	<i>Dasyurus maculatus</i>	Vulnerable*
Brown treecreeper	<i>Climacteris picumnus victoriae</i>	Vulnerable*
Greater glider	<i>Petauroides volans</i>	Regionally significant
Common wombat	<i>Vombatus ursinus</i>	Regionally significant

* Status under TSC Act.

Approximately 160 native vertebrate fauna species have been recorded within a 10 kilometre radius of Tomalla Nature Reserve including nine threatened species (all listed as Vulnerable under the TSC Act) and seven regionally significant species.

High quality habitat has been predicted in Tomalla Nature Reserve for over 30 threatened and significant species and lower quality habitat for a further 25 threatened

and significant species is also predicted to occur (NPWS, 2004; Spark, P. 2004, pers. comm.).

Threatened species listed under the TSC Act considered most likely to occur in Tomalla Nature Reserve are those that have been recorded within a 10 kilometre radius and for which there is predicted high quality habitat within the Reserve (NPWS, 2004). These species include the vulnerable eastern false pipistrelle (*Falsistrellus tasmaniensis*) and glandular frog (*Litoria subglandulosa*). Regionally significant white-lipped snake (*Drysdalia coronoides*), bibron's toadlet (*Pseudophryne bibronii*), white-striped freetail-bat (*Tadarida australis*), common bent-wing bat (*Miniopterus schreibersii*) alpine meadow-skink (*Eulamprus kosciuskoi*), montane sunskink (*Lampropholis caligula*) and forest raven (*Corvus tasmanicus*) are also predicted to occur.

Introduced plant species, pest animals, inappropriate fire regimes and illegal hunting are considered threats to native plants in both Reserves (refer to section 4 for further information).

3.4 ABORIGINAL HERITAGE

Aboriginal communities have an association and connection to the land. The land and water within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

The Reserves are part of the traditional area of the Aniwan people. The word 'Aniwan' means 'home of the sweet water' (natural springs) (Morris, G. 2004 pers. comm.). Aboriginal camp sites and art sites are known to occur locally and it is likely that the animals found in the Reserves would have provided a food resource to Aboriginal groups residing or travelling through the area (Morris, G. 2004 pers. comm.). Back River would have been an important source of freshwater and associated resources. Today the Reserves are located in the Nungaroo Local Aboriginal Land Council area.

3.5 HISTORIC HERITAGE

The Reserves are located in a region that is well-known for its gold. Reef gold was first discovered at Nundle in 1852, with alluvial gold possibly discovered as early as 1849. The field yielded eight tonnes of alluvial gold and two tonnes of reef gold. Many of the mines were situated between Nundle township and the village of Hanging Rock. Mine names such as Brown Snake Reef, Opossum Gully Reef, Cemetery Hill and Rip and Tear are typically descriptive of the times and experiences of the gold fields. Just north of Hanging Rock "Ruzickas Reef, Lady of the Mountain" may have been paid such a respectful title in homage to its rich lode of over 20 kilograms of gold in one small patch, found virtually at the surface of the ground (NPWS, 2002; Bayley, 1988). Mining and fossicking may also have occurred in the Reserves.

Vast forests of valuable timber existed in the ranges east of Hanging Rock at the head of the Manning and Barnard Rivers in the 1850s. These forests lay untouched until 1874 when the zig-zag road was constructed to Hanging Rock. It then became possible to carry the logs down to Wilberforce Brothers' mills along the river where the

timber was milled for use in railway construction. Sawmills were established in Tamworth, Walcha and Nowendoc by 1875. The *Forestry Act* passed in 1916 led to large areas of land being dedicated as State Forests, with Hanging Rock State Forest declared in 1918. Local small sawmills continued hardwood logging through the 1900s. More recently extensive pine plantations have been established in lands contained within Hanging Rock, Nundle and Tomalla State Forests (NPWS, 2002; Bayley, 1988).

The rugged terrain found within Back River Nature Reserve protected much of the Reserve from heavy logging operations and consequently many older trees remain. However, in Tomalla Nature Reserve only a small portion of steeply sloping upper valley in the south east of the Reserve, that drains into Tomalla Creek, contains old growth trees. Old logging tracks, snig tracks and log dumps are evident in the Reserves. No formal surveys have been undertaken, in either Reserve, which could provide evidence of timber getting or fossicking. Vegetation structures in the Reserves provide evidence of timber getting however, signs of early European use are not expected and would be hard to identify due to the steep and rugged terrain.

3.6 VISITOR USE, EDUCATION AND RESEARCH

Visitation to the Reserves is currently low and consists mainly of activities such as bushwalking and bird watching. No visitor facilities are provided in the Reserves.

Public access to Back River Nature Reserve is via Hanging Rock State Forest on Ponderosa Park and Back River Trails, which are managed by Forests NSW. No public vehicular access is provided within Back River Nature Reserve. Public access to Tomalla Nature Reserve is via Tomalla or Nundle State Forests on Tomalla Forest Way which is managed by Forests NSW. A small section of this road traverses the Reserve to link Nundle and Tomalla State Forests and is the only public vehicle access in the Reserves.

The Reserves provide research opportunities to enhance the knowledge and management of the planning area.

Educational use is appropriate where it does not conflict with conservation. Whilst public access is currently not promoted, Discovery Programs may be developed for the Reserves to compliment low impact visitation and associated education. Such programs could include a variety of activities such as walks, plant and animal surveys, spotlighting for arboreal mammals and talks about Aboriginal culture by members of the local Aboriginal community. Emphasis will be placed on interpretation of the high conservation values of the Reserves.

A range of outdoor or natural area based tourist attractions and recreational areas occur in close proximity to the Reserves. Ponderosa Forest Park Recreation Area is located approximately 2.5 kilometres north of Back River Nature Reserve off Nundle Forest Way and 10 kilometres west of Tomalla Nature Reserve. This park has picnic tables, toilets, barbecues, and water (bore water). The Sheba Dams precinct, located approximately five kilometres south-east of Back River Nature Reserve, has toilets, barbecues, picnic tables, walking trails and camping opportunities. It also provides fishing and fossicking opportunities. Chaffey Dam just off Lyndsay Road is located approximately 40 kilometres north-west of Back River Nature Reserve. Chaffey Dam has picnic tables, barbecues, camping and bird watching opportunities as well providing for a range of water sports.

4. ISSUES

4.1 VISITOR IMPACTS

Evidence of trail bike riding and pig hunting is present in the Reserves. Anecdotal evidence indicates pig hunters frequent the Reserves. Vehicle use has caused erosion and degradation to the Reserves, and in particular to the northern boundary trails in Back River Nature Reserve.

Hanging Rock, Nundle and Tomalla State Forests, immediately adjacent to the Reserves, have been declared hunting areas under the *Game and Feral Animal Control Act 2002*. Hunting is not permitted in the Reserves. 'No hunting' signs have been installed in some places, but additional identification and hunting restriction signage is required to cover all entrances to the Reserves and clearly delineate them from the State Forest hunting areas.

4.2 WEEDS AND PEST ANIMALS

Whilst the Reserves are small and relatively undisturbed, introduced plant species as well as pest animals are considered a threat to both Reserves. To be successful, the control of pests and weeds needs to be undertaken in the context of the surrounding landscape.

Wild dogs have been recorded in the Reserves as well as the wider area. Wild dogs, including dingoes, have been declared as pest animals under the *Rural Lands Protection Act 1998* (RLP Act) throughout NSW.

Unquantified but small pig (*Sus scrofa*) populations are also believed to be present in the Reserves. Feral pigs cause damage by selectively feeding on plant communities, causing soil erosion and spreading weeds.

The European fox (*Vulpes vulpes*) has been observed in the Reserves. Foxes have a devastating impact on small to medium sized ground-dwelling and semi-arboreal mammals as well as ground-nesting birds.

Weed species are not a major problem in the Reserves. Blackberry (*Rubus fruticosus*) and other exotic weeds, including prickly pear (*Opuntia* species), are known to be present in the Reserves at low levels. Weeds are easily introduced via vehicular traffic and the focus of monitoring and control efforts is along existing trails as well as disturbed areas such as disused logging roads, snig tracks and log dumps. Adjoining landholders to the east and south of Back River Nature Reserve and west of Tomalla Nature Reserve have grazing stock which are considered a potential source of weed spread. Fencing agreements have been or will be entered into to prevent stock accessing the Reserves.

The Hunter Region Pest Management Strategy 2008-2011 (NPWS 2008a) identifies regional priorities for pest animal and plant control which forms the basis of an annual works program.

Phytophthora cinnamomi is a potential issue within the Reserves. *P. cinnamomi* occurs within Barrington Tops National Park and State Conservation Area, which are located in the same management area as the Reserves. *P. cinnamomi* is a water mould that thrives in warm moist soils. It attacks the roots of plants causing them to rot so they are unable to absorb enough water and nutrients. The disease causes the dieback of affected trees and plants. There are species within the Reserves known to be susceptible to *P. cinnamomi*. Vehicle wash down procedures are followed when moving plant and equipment onto the Reserves.

4.3 FIRE

The primary fire management objectives of the NPWS are to protect life and property and community assets from the adverse impacts of fire, whilst managing fire regimes to maintain and protect biodiversity and cultural heritage (NPWS, 2007).

Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the TSC Act.

The NPWS uses a zoning system for bushfire management which is compatible with the zoning used by the Tamworth Bush Fire Management Committee (BFMC) in its bushfire risk management plan.

The northern and western boundaries of Back River Nature Reserve adjoin significant native forest and pine plantations managed privately and by Forests NSW. Forests NSW manages pine plantations two kilometres north of Tomalla Nature Reserve as well as hardwood forests to the east. Private land bounds the western and southern edges of Tomalla Nature Reserve. Residential and agricultural assets are relatively close to the north-western boundary.

Wildfire burnt a small area on the northern boundary of Tomalla Nature Reserve in the 2002-2003 wildfire season and an escaped hazard reduction incident burnt a small area on the north western boundary in 2004. Evidence of past fires can be seen in Tomalla Nature Reserve that corroborates anecdotal evidence that the northern part of the Reserve (from Red Trail) was burnt in the early 1980s, the southern part of the Reserve was burnt in the 1965-1966 fire season and the entire Reserve was burnt in the early 1950s. In addition to this, numerous hazard reduction activities along the western boundary have occurred. There have been no recorded wildfires within Back River Nature Reserve, however, evidence of fire can be seen in the reserve which supports anecdotal evidence of a fire in the 1970s that burnt the entire reserve.

Separate (map-based) Reserve Fire Management Strategies (RFMS) have been prepared for the Reserves (NPWS, 2008b; NPWS 2008c). RFMS include the recent fire history of the Reserves, key assets within and adjoining the Reserves including sites of natural and cultural heritage value, fire management zones which may include asset protection zones, and fire control advantages such as management trails and water supply points. Hazard reduction programs, ecological burning proposals and fire trail works are submitted annually to the Tamworth Bush Fire Management Committee (BFMC).

RFMS incorporate bushfire risk management strategies which have been developed to reduce risk to neighbouring assets, specifically Forests NSW pine plantations to the north, and reduce the risk of fire entering the Reserves. RFMS have been developed in collaboration with Forests NSW.

NPWS maintains cooperative arrangements with surrounding landowners and Rural Fire Service brigades and is actively involved in the Tamworth BFMC. Cooperative arrangements include approaches to fuel management, support for neighbours' fire management efforts and information sharing.

4.4 ISOLATION AND FRAGMENTATION

The Reserves are part of an important regional corridor, but the broader landscape of the region has been extensively cleared, resulting in a high loss of biodiversity and fragmentation of habitat. Long term conservation of biodiversity depends upon the protection, enhancement and connection of remaining habitat across the landscape, incorporating vegetation remnants on both public and private lands. Nearby vegetated areas contribute to the habitat values of the Reserves and provide ecological corridors to other forested areas. Maintaining the integrity of the remaining habitat within the Reserves and, where possible, linking this to adjacent areas of bushland to facilitate wildlife corridors is important in ensuring the long term viability of the Reserves' biological values.

On a broader national context, the Great Eastern Ranges conservation corridor extends for 2800 km from the Australian Alps north of Melbourne, Victoria to the Atherton Tablelands to the west and north of Cairns in far north Queensland. The Great Eastern Ranges Initiative has been established to strengthen conservation management and connectivity of natural lands to mitigate the impacts of climate change, and other threats. Back River and Tomalla Nature Reserves lie in this corridor.

4.5 CLIMATE CHANGE

Climate change has been listed as a key threatening process under the TSC Act. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, elevated CO₂, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, reduced river runoff and water availability, regional flooding, increased erosion and ocean acidification.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition, and altering the geographical extent of habitats and ecosystems. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from feral animals. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Programs to reduce the pressures arising from other threats, such as habitat fragmentation, invasive species, bushfires, pollution and urban expansion, will help reduce the severity of the effects of climate change.

5. MANAGEMENT OPERATIONS AND OTHER USES

The Reserves have a limited management trail network. Vants Gully Trail and Springs Gully Trail follow the two major ridges in Back River Nature Reserve (see Map 2). A small section of Vants Gully North Trail from Hanging Rock State Forest also occurs on the northern boundary of the Reserve.

Red Trail traverses Tomalla Nature Reserve in an east-west direction from Tomalla Forest Way to the western neighbour (see Map 3). Access for park management purposes is also available via private property on the southern and western boundaries.

Tomalla Forest Way is a 'ministerial road'. It is not located on the road easement and was designated as a ministerial road under the *Forestry and National Parks Estate Act 1998* to ensure that the access arrangements which existed immediately before the Reserve's creation (primarily for timber hauling and private property access) could continue. The management of this road is subject to the provisions of this plan, the NPW Regulation and the requirements of the EPA Act. NPWS will maintain the road to dry-weather four wheel drive standard, which is the standard required for the management of the Reserve. Maintenance or development of ministerial roads by the land holder or their contractor may only be carried out subject to written agreement between the land holder and the NPWS.

Preliminary discussions have occurred with Forests NSW and neighbours to negotiate access agreements for management purposes to both Reserves. Main entrances to the Reserves are identified with signage.

There are no boundary fences on Back River Nature Reserve. The northern and north-western boundary is with State Forests, with Back River forming the southern boundary. The eastern boundary is on steep, forested country where incursion by domestic stock is an occasional issue.

Tomalla Nature Reserve is unfenced, except for the western boundary which adjoins private property and is covered by a fencing agreement. Fences have been installed in line with the Boundary Fencing Policy.

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7. IMPLEMENTATION

Current Situation	Desired Outcomes	Management Response	Priority*
<p>6.1 On-Park Ecological Conservation</p> <p>Although there is a broad understanding of the vegetation and habitat value of the Reserves, detailed knowledge of the plants and animals is limited.</p> <p>The Reserves exist within the broader context of forests and private lands that provide corridors of native vegetation and links for native fauna, however community awareness of the Reserves' values is limited.</p> <p>The Reserves are in the upper reaches of the Manning River catchment. Preservation of water quality within this area will contribute toward water quality of the catchment.</p>	<p>Improved knowledge of the threatened and significant plants and animals and their ecology and habitat requirements.</p> <p>Native plant and animal species are conserved.</p> <p>The diversity of habitats occurring in the Reserves is preserved.</p> <p>Soil erosion is minimised.</p> <p>Water quality and health of streams is maintained or improved.</p> <p>The effects of climate change on natural systems are reduced.</p>	<p>6.1.1 Undertake or encourage fauna and flora surveys, targeting in the first instance threatened species listed as known or likely to occur.</p> <p>6.1.2 Avoid disturbance activities in old-growth forest areas.</p> <p>6.1.3 Implement relevant strategies in the Priorities Action Statement and recovery plans for threatened species.</p> <p>6.1.4 Protect known or potential habitat of threatened fauna species.</p> <p>6.1.5 Liaise with neighbours, including Forests NSW, regarding the distribution of threatened fauna within and adjacent to the Reserves, associated threats and appropriate management practices.</p> <p>6.1.6 Liaise with neighbours, catchment management authorities, local council and other agencies to encourage retention, and where possible expansion, of areas of native vegetation close to the Reserves.</p> <p>6.1.7 Undertake all works in a manner that minimises erosion and water pollution.</p> <p>6.1.8 Continue to support the Hunter-Central Rivers Catchment Management Authority to maintain and improve water quality in the catchments.</p> <p>6.1.9 Continue existing fire, pest and weed management</p>	<p>Medium</p> <p>Ongoing</p> <p>Medium / Ongoing</p> <p>Medium / Ongoing</p> <p>Medium/ Ongoing</p> <p>Medium / Ongoing</p> <p>Ongoing</p> <p>Medium / Ongoing</p> <p>High/</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p>6.2 Cultural Heritage</p> <p>The Reserves are part of an area traditionally belonging to the Aniwani people.</p> <p>Recent history has seen the region become well known for its timber and mineral resources.</p> <p>No cultural heritage sites have been identified within the Reserves.</p> <p>No formal surveys have been undertaken in the Reserves.</p>	<p>Aboriginal places and values are identified and protected.</p> <p>Aboriginal people are involved in the management of Aboriginal cultural values in the Reserves.</p> <p>Negative impacts on Aboriginal and historic heritage values are stable or diminishing.</p> <p>Historic heritage is identified and protected.</p>	<p>programs to increase the ability of native flora and fauna to cope with future disturbances, including climate change.</p> <p>6.2.1 Consult and involve Aniwani elders and the Nungaroo Local Aboriginal Land Council in the assessment and management of the Aboriginal cultural heritage values of the Reserves.</p> <p>6.2.2 Encourage research into the Aboriginal and historic cultural heritage values of the Reserves.</p>	<p>Ongoing</p> <p>Medium / Ongoing</p> <p>Medium</p>
<p>6.3 Visitor Use and Services</p> <p>Nature reserves are established to conserve areas containing outstanding, unique or representative ecosystems. The Reserves protect wildlife, natural environments and significant cultural features, and provide for scientific research.</p> <p>Outdoor and natural area recreational opportunities occur in close proximity to the Reserves (e.g. Ponderosa Forest Park Recreation</p>	<p>Minimal impact recreational and visitor use is appropriate and ecologically sustainable for example, bush walking.</p> <p>The Reserves' conservation values are</p>	<p>6.3.1 No visitor facilities will be provided in the Reserves.</p> <p>6.3.2 Conduct patrols to identify and quantify illegal activities in the Reserves.</p> <p>6.3.3 Develop and implement strategies with neighbours, Forests NSW, NSW Police and other stakeholders to stop illegal behaviour. Strategies may include, but not be limited to, the installation of gates and fencing.</p>	<p>Ongoing</p> <p>Medium / Ongoing</p> <p>Medium / Ongoing</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p>Area and the Sheba Dam Precinct).</p> <p>NPWS information, including information about the Reserves, has been erected at Sheba Dams, a popular recreation area near Hanging Rock.</p> <p>Visitation levels are currently low and consist of activities such as bushwalking and bird watching. No visitor facilities are provided.</p> <p>Public access to the Reserves is via Forest NSW trails. No public vehicular access is provided within the Reserves.</p> <p>Evidence of trail bike riding is present. Anecdotal reports indicate that the Reserves are frequented by pig hunters.</p>	<p>promoted.</p> <p>Negative impacts of visitors on park values are stable or diminishing.</p> <p>No visitor facilities will be made available within the Reserves.</p> <p>Illegal activities including pig hunting, unauthorised vehicle and trail bike access are managed.</p>	<p>6.3.4 Work with Forests NSW and NSW Police on law enforcement for the Reserves if required.</p> <p>6.3.5 Liaise with neighbours / Forests NSW to address illegal access to Reserves.</p> <p>6.3.6 Liaise with Police and other relevant NSW government agencies to manage illegal hunting.</p>	<p>Ongoing</p> <p>Medium / Ongoing</p> <p>Medium / Ongoing</p>
<p>6.4 Community Programs and Education</p> <p>Community awareness of the Reserves' values is limited.</p>	<p>The local community is aware of the significance of the Reserves and management programs.</p> <p>Educational use is appropriate and does not conflict with conservation values of the Reserves.</p>	<p>6.4.1 Develop and run programs, such as open days or Discovery in consultation with Aniwan elders and the Nungaroo Local Aboriginal Land Council, to highlight the conservation values of the Reserves to the local community.</p> <p>6.4.1 Review and update interpretative material as required.</p>	<p>Medium / Ongoing</p> <p>Medium / Ongoing</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p>6.5 Weeds and Pest Animals</p> <p>The Hunter Region Pest Management Strategy has been prepared that prioritises pest species programs.</p> <p>An annual fox/dog baiting program is carried out in conjunction with the New England Livestock Health and Pest Authority District and the Wild Dog Association indicates ongoing presence of these pest animals in the Reserves.</p> <p>The Reserves have a known pig population. The Reserves are relatively small and largely surrounded by areas of forested land. Pest control needs to be considered at a landscape scale to be effective.</p> <p>Minimal weed numbers are evident on boundary tracks and trails. Scotch broom and tree of heaven are regional issues although not identified in the Reserves to date.</p> <p><i>P. cinnamomi</i> is a potential issue within the Reserves because it occurs within Barrington Tops National Park and State Conservation Area.</p>	<p>Introduced plants and animals are controlled and where possible eliminated.</p> <p>Negative impacts of weeds and pest animals on park values are stable or diminishing.</p> <p>Pest control programmes are undertaken where appropriate in consultation with neighbours.</p> <p>Species are controlled as required using pest management techniques.</p> <p>Prevent the introduction of <i>P. cinnamomi</i> to the Reserves.</p>	<p>6.5.1 Implement pest control activities in line with the Hunter Region Pest Management Strategy, targeting introduced predators in areas with known or potential habitat for threatened or significant fauna species.</p> <p>6.5.2 Continue to work with neighbours and the New England Livestock Health and Pest Authority District to monitor and implement vertebrate pest programs in and around the Reserves including baiting programs for species including foxes, dogs and pigs. Implement reactive baiting if required.</p> <p>6.5.3 Target weed control efforts on Reserve management trails and park roads, former logging roads and snig tracks, especially in Tomalla Nature Reserve.</p> <p>6.5.4 Monitor for dieback caused by <i>P. cinnamomi</i> in prone New England Peppermint and Messmate vegetation communities and manage as necessary (see 6.5.5, 6.5.6 and 6.5.7).</p> <p>6.5.5 Adhere to wash down procedures for vehicles and plant (wash down of all plant and vehicles prior to entering the Reserves, especially if they have been in areas known to have <i>P. cinnamomi</i>) to prevent the spread of <i>P. cinnamomi</i>.</p> <p>6.5.6 Any materials imported from outside the Reserves should be tested for <i>P. cinnamomi</i> (eg sand and gravel which is used for road maintenance and mound baiting).</p>	<p>Medium / Ongoing</p> <p>Medium / Ongoing</p> <p>Medium</p> <p>Medium / Ongoing</p> <p>High / Ongoing</p> <p>High / Ongoing</p>

Current Situation	Desired Outcomes	Management Response	Priority*
		<p>6.5.7 If necessary, develop a management plan to control <i>P. cinnamomi</i>.</p> <p>6.5.8 Monitor for outbreaks of scotch broom, tree of heaven and other noxious weeds known to be regional issues.</p>	<p>Medium</p> <p>Medium / Ongoing</p>
<p>6.6 Fire Management</p> <p>Fire is a natural feature of many environments and is essential to the survival of some plant communities. Inappropriate fire regimes can however lead to loss of particular plant and animal communities. High frequency fires have been listed as a key threatening process under the TSC Act. Fire can also damage cultural heritage, recreation and management facilities and can threaten visitors and neighbouring land.</p> <p>The Reserves adjoin native and softwood forests and much of the access for management purposes is through forest areas.</p> <p>Reserve Fire Management Strategies have been developed for the Reserves. These identify that there should be no fire in rainforest communities found along the creeks and rivers in the Reserves, and most of the Reserves should be managed as Land Management Zones to conserve biodiversity.</p> <p>Strategic Fire Advantage Zones have been identified for specific areas to protect assets.</p>	<p>Life, property and natural and cultural values are protected from fire.</p> <p>Fire regimes are appropriate for conservation of native plant and animal communities.</p> <p>Negative impacts from fire on natural and cultural heritage values are stable or diminishing.</p> <p>Fire records are improved.</p>	<p>6.6.1 Continue to participate in Tamworth BFM. Maintain coordination and cooperation with Rural Fire Service brigades, Council and neighbours with regard to fuel management and fire suppression.</p> <p>6.6.2 Implement the Fire Management Strategies for the Reserves, including hazard reduction activities and ecological burning operations as necessary.</p> <p>6.6.3 Continue to work with neighbours to implement the Reserve Fire Management Strategies for the Reserves.</p> <p>6.6.4 Work with Forests NSW to formalise and implement agreements for access, maintenance of tracks, supply of water and operational hazard reductions.</p> <p>6.6.5 Encourage further research into the ecological effects of fire in the Reserves.</p> <p>6.6.6 Ensure fire regimes protect threatened or vulnerable ecosystems.</p> <p>6.6.7 Exclude fire from sensitive Rainforest communities as far as possible.</p>	<p>High / Ongoing</p> <p>High / Ongoing</p> <p>High / Ongoing</p> <p>Medium / Ongoing</p> <p>High / Ongoing</p> <p>High / Ongoing</p> <p>Medium / Ongoing</p>

Current Situation	Desired Outcomes	Management Response	Priority*
<p>6.7 Infrastructure and Maintenance</p> <p>Access to both Reserves is through State Forest. A section of Tomalla Forest Way is within Tomalla Nature Reserve and part of this road is not located on the road easement.</p> <p>Management trails in the Reserves are used for fire and pest control.</p> <p>Signs, including 'no hunting' signs, have been installed at some entrances to the Reserves.</p> <p>Incursion by domestic stock occurs occasionally on the eastern boundary of Back River Nature Reserve.</p>	<p>Management facilities and operations adequately serve management needs and have minimal impact.</p> <p>Infrastructure and assets are routinely maintained.</p> <p>Existing non-park infrastructure is managed to minimise impacts on cultural and natural values.</p> <p>Cooperative access arrangements with Forests NSW are maintained.</p> <p>Stock is prevented from entering the Reserves.</p>	<p>6.7.1 Map the minor trail heading west from Vants Gully Trail and evaluate for possible inclusion in the management trail network.</p> <p>6.7.2 Maintain the trails shown on maps 2 and 3, and possibly the minor trail mentioned above, for management purposes.</p> <p>6.7.3 Improve sign posting of the Reserves, including track names for use in emergency situations and 'no hunting' signs to clearly identify boundaries.</p> <p>6.7.4 Maintain the section of Tomalla Forest Way within Tomalla Nature Reserve to a four wheel drive standard.</p> <p>6.7.5 Formalise agreements with Forests NSW and neighbours for management access to the Reserves.</p> <p>6.7.6 Investigate the alignment of the survey data for Tomalla Forest Way with the actual position of the road.</p> <p>6.7.7 Liaise with neighbours on relevant management issues, including fencing assistance where required in accordance with the Boundary Fencing Policy.</p>	<p>Medium</p> <p>Medium / Ongoing</p> <p>High</p> <p>Medium / Ongoing</p> <p>High</p> <p>Medium</p> <p>Medium / Ongoing</p>

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

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

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

Ongoing is for activities that are undertaken on an annual basis or statements of management intent that will direct the management response if an issue that arise.

