36. Spring Plains Nature Conservation Reserve

Spring Plains Nature Conservation Reserve is a 1315 ha band of native forests. It lies along a line of hills and ridges formed from rocks much older than the rest of Mitchell Shire. To the east are McIvor Creek and a ridge of younger rocks in the Heathcote-Graytown National Park. The forest is recovering from mining and timber collection but is rich in native plants and animals. Numerous access tracks run off the Northern Highway from Hardings Lane near Tooborac north to the back of Heathcote. These lead to a network of old tracks good for walking and an old aqueduct between Heathcote and Tooborac to be explored. The Reserve's northern half is in Greater Bendigo City.

This reserve is on the land of the Taungurung People, and many of the valleys running through the Reserve are areas of Aboriginal cultural heritage sensitivity. We acknowledge their Elders past and present and emerging, and their care of Country over many millennia. We ask that all people respect this ancient heritage and care for the land we now share.

Directions

Spring Plains Nature Conservation Reserve has a main road artery up the middle of the Reserve with links to the Northern Highway and a confusing network of tracks in various conditions with some signposts (see notes below the map). In these Notes, the Reserve has been divided into three sections and the notes trace the main arterial and access routes.

Northern section: between Spring Flat Road, Argyle to Dairy Flat Road: *Hedley Dam Track* starts on *Spring Flat Road* 1.2 km from the Northern Highway in Heathcote. The start is in a bare area of gravel with the main route running south into the forest. The track follows the heavily mined Long Gully, past Hedley Dam and over several steep ridge before arriving at *Dairy Flat Road* opposite Caledonia Gully Reservoir. Return 3.0 km to the Northern Highway at Argyle.

Central Section: Dairy Flat Road to Newlans Lane: *Spring Plains Track* is the arterial route through this section. It begins on *Joes Road* 1.2km off the Northern Highway or 0.9km off Dairy Flat Road. The track runs mostly south with many tracks to the east and west. Of these, *White Reef Track* and *Peters Gully Track* are reliable exits to *Peters Gully Road* and the *Northern Highway*. Peters Gully is now the focus of the Spring Plains Watershed Repair Project by Biolinks Alliance. Spring Pains Track ends at *Newlan(s) Lane* that can be followed 1.7 km to the *Northern Highway*.

Southern section: Newlans Lane to Hardings Lane, Tooborac: Rather than returning to the Northern Highway from the central section, turn right (west) and follow *Newlans Lane* across and around farmland, where it becomes *Newlan(s) Track* running south through the forest. At the next intersection, *Sniggers Track* runs left (east) past Sniggers Dam. **Note**: Officially *Campbells Track* includes *Sniggers Track* and the main route from there to *Campbells Lane* but signposts only refer to *Sniggers Track* and *Newlan Track* through to Campbells Lane.

Sections of an aqueduct can be found adjacent to and west of the main route, with *Tunnel Track* branching off to a site where a short tunnel carried water under a ridge. *Newlan/Campbells Track* ends at an intersection with *Campbells Lane* leading down to the *Northern Highway*.

From here the main route south is along *Mundy Gully Road*. *Tunnel Track* crosses a steep hill and rejoins the main route south of *Campbells Track*.

The road then crosses the aqueduct. The vegetation changes about here, with Ironbarks disappearing and the steeper dry ridges dominated by Red Box.

Mundy Gully is marked by two small dams on the right below an area of reef mines and mullock heaps. From there the route crosses a few more hills and gullies then undulates close to the main dividing ridgeline between McIvor Creek to the east and Wild Duck Creek to the west. The route finally descends to Hardings Dam and *Hardings Lane* 3.4 km from the *Northern Highway*.

Other reserves near the southern end of Spring Plains include:

Tooborac Bushland Reserve near Tooborac: see Natural Treasures No. 35.

Spring Plains Bushland Reserve: a small (4.0ha) patch of bushland further west of Tooborac, on Dairy Flat Road 400m south from the junction with Hardings Lane. It is unfenced and mostly cleared land with a network of stock tracks.

Walking Tracks

Spring Plains Nature Conservation Reserve has no designated walking trails. However, the network of vehicle tracks provides some good long walks with many loops. Note that some unofficial vehicle tracks are used but not mapped. For suggestions, see AllTrails.

An interesting walk would be to follow and map the aqueduct running through the Reserve.

	Some tracks are rough or wet in places, and many are slowly stabilising and revegetating. Please stay on the major routes through the Reserve.
	Tracks are rough and not suitable for all abilities.
	No picnic facilities are available in the Reserve.
	The Reserve has no toilets.

Landform and Geology

The complex geological story of this area goes way back into deep time when eastern Australia was created.

Spring Plains NCR is along a low range of rocky hills running north-south. To the west, gullies run into Wild Duck Creek and Lake Eppalock. To the east, gullies cut through another series of low hills to McIvor Creek that also runs north south. Opposite is the higher McIvor Range also running north south.

All these features run parallel to the Mount William Fault Zone. This fault zone lies immediately west of the Northern Highway and McIvor Creek, separating the younger Silurian and Devonian

rocks that are across most of Mitchell Shire from the older Cambrian and Ordovician rocks to the west.

The older rocks in the region were laid down in the ocean on the edge of what was then the coast of Australia (Gondwana). Deep-sea basalts (greenstone) and hard cherts (formed from silica) were laid down during the Cambrian period (540-495 million years ago), and sands and silts during the Ordovician (490-450 mya). Around 445 to 425 mya, the rocks west of the Mount William Fault were lifted above the seabed and folded.

A sea basin remained through the centre of Victoria east of the fault and gradually accumulated sediments from the surrounding land over the Silurian and early Devonian period. Finally, this basin was also uplifted around 390 to 380 mya to complete the land surface of Victoria.

Tectonic forces uplifted and distorted all the rock layers, bringing the oldest rocks closer to the surface adjacent to the Mount Willian Fault Zone.

The oldest Cambrian rocks form a distinctive band including the Mount William Range to the south and Mount Camel Range running north from Heathcote. In places, the basalt in these rocks for rich soils particularly around Mount Emu. The Cambrian greenstones were mined and traded by Aboriginal people as stone implements, particularly at the National Heritage site at Mount William. The intrusion of Pyalong granite displaced the rocks between these two ranges.

The Pink Cliffs in Heathcote and the line of low hills scattered in a north-south line immediately east of the Northern Highway are also part of this band of ancient Cambrian rock but without the basalt and greenstone. These ancient rocks are inside the Reserve in hills north and south of Newlans Lane.

Most of the country immediately west of the Cambrian belt are on Ordovician sediments. This includes the main ridgeline running through the Spring Plains NCR.

The tectonic movements that folded and uplifted the rock layers and initiated the intrusion of the granites also heated the water deep in these rock layers. This hot water carried dissolved silica and minerals into faults and cracks in the overlying rocks. The silica crystallized as quartz veins with deposits of gold, particularly in the Ordovician rocks west of the Mount William Fault. The long period of erosion since then has exposed the quartz veins, leaving bits of broken quartz veins on the surface and carrying the finer materials into swales and creeklines.

The Reserve has many places where alluvial and deeper reef mining was carried out during from the 1850s, and the forests were felled for mine props and fuel for several decades.

Vegetation

The vegetation matches the terrain in Spring Plains NCR. The higher and often rocky slopes on the western side of the Reserve and the southern end of the Reserve south from Campbells Lane are mostly Heathy Dry Forest with Grassy Dry Forest on some eastern (sheltered) slopes. Red Box is the most common tree with scattered Red Stringybark. Silver-topped Wallaby-grass is abundant in many places, with a diversity of shrubs in rocky sites and grasses in sheltered areas.

Where the slopes from the ridgeline flatten out over most of the Reserve north of Campbells Lane, the vegetation merges into Box Ironbark Forest with the distinctive stems of Mugga Ironbark in pure stands and mixed with Red Box, Red Stringybark and some Yellow Gum.

In the gullies, the vegetation includes Valley Heathy Forest (status Vulnerable) with patches of sedges, Valley Grassy Forest further down the gullies, and Creekline Grassy Woodland (Endangered) along the larger streams such as Long Gully, Caledonia Gully and Peters Gully. These three gullies have been extensively disturbed by alluvial mining.

The ECC Box Ironbark Report notes that most of these forests and woodlands were heavily logged and very little of the original structure remains. The report notes the presence of one large old tree site in the Reserve (location not specified) and remnants of endangered Creekline Grassy Woodland. The Reserve has few large old trees and the dense regrowth of younger trees and coppices is associated with low shrub and ground cover and extensive areas of bare ground and leaf litter.

Two ecological management trials have been established in the Reserve to create a healthier forest by reducing the competition for moisture and light and reducing water runoff. This has involved ripping the ground, thinning the trees and leaving logs lying across the slope.

In 2003, universities and government agencies established a series of thinning trial plots in four goldfields reserves including the southern section of Spring Plains NCR east of Mundy Gully Track up to the Mundy Gully Diggings (Piggott at al. 2010).

In 2022, Biolinks Alliance set up an ecological trial across the catchment of Peters Gully, with a control area to the catchment of White Gully to the north (see Biolinks Alliance). Monitoring is continuing but early analysis shows significantly more understorey plants and more birds, reptiles and invertebrates, and greater growth of trees in the 2003 treatment areas measured after 10 years. These projects are all helping slow nature to recover – slowly over generations.

The Victorian Biodiversity Atlas lists 73 species (65 native species) to January 2024. Studies by Biolinks Alliance and others will add to this list. Plant lists are in preparation.

Wildlife

The large area of the forest, the diversity of plants and plant communities, and even the few large old trees provide habitat for many species. Around 90 birds have been listed in the Victorian Biodiversity Atlas and probably more have been seen by bird observers. This list includes seven threatened species such as the highly endangered Swift Parrot that feeds in Ironbarks over winter, Powerful Owl, Speckled Warbler and Diamond Firetail. The list also includes two endangered inland species (the Chestnut-rumped Heathwren and Crested Bellbird) and two endangered raptors (the Little Eagle and Square-tailed Kite) that underline the importance of the Heathcote forests.

The Victorin Biodiversity Atlas also lists six mammals (two threatened), five reptiles and five amphibians (two threatened).

Current studies in the forest will add to these lists. A species list is in preparation.

Aboriginal history

The Reserve is on the land of the Taungurung People. They managed the land for millennia, using fire to maintain the open woodlands. The Reserve has many sites of Aboriginal cultural heritage sensitivity including most waterways and the band of Cambrian rocks along the eastern boundary of the Reserve.

History after colonisation

Major Mitchell's exploration of the region from 1836 was quickly followed by squatters bringing in sheep and cattle to take over the land. By 1848 most of the land was parcelled into squatters runs. In 1853, the gold rush began in Heathcote.

Hedley's Water Race (listed on the Victorian Heritage Inventory) (photo on left) was constructed in 1865 by McIvor Hydraulic and Gold Mining Co for sluicing operations. The aqueduct followed a contour "through the known auriferous country from Tooborac to Heathcote". The aqueduct allowed sluicing operations from Hayes Gully south of the Reserve through to the site of Caledonia Gully Reservoir and north to the Pink Cliffs in Heathcote. Sluicing created

sludge downstream, and the Sludge Inquiry Board sat at the Heathcote Town Hall in November 1886.

In 1888, the building of the rail from Heathcote Junction to Bendigo allowed further exploitation of the forests for timber and firewood. It is estimated that 85% of the original forest cover was removed. During the 1930s, men were employed to remove more trees in the forests and, more recently, the One-eye, Argyle and Spring Plains forests (then grouped as Argyle State Forest) were available for firewood and posts under licence.

In 2001 the Environment Conservation Council's (now VEAC's) Box Ironbark Forests and Woodlands Investigation recommended the creation of Spring Plains Nature Conservation Reserve in the southern sections of these forests. The recommendation was accepted and enacted by the Government. Northern sections of the forests remain as Argyle State Forest (officially mapped as One-eye State Forest).

Management

The Reserve is Crown land managed by Parks Victoria.

The Reserve contains many sites with reef mines, sluicing operations and aqueducts listed on the Victorian Heritage Inventory.

The Crown land in the Reserve is included in the Land Use Activity Agreement, a part of the Taungurung Recognition and Settlement Agreement.

Following the creation of the Reserve, Parks Victoria funded the 2003 Ecological Thinning Trial and Biolinks Alliance established the 2023 Ecological Restoration Trial. Results will be coming back from these trial for many years and will inform future management.

Further information

Parks Victoria: Parks Victoria can be contacted on 13 1963 or go to https://www.parks.vic.gov.au/contact-us. Websites for Black Spring Flora Reserve (Tooborac I19 Bushland Reserve is at https://www.parks.vic.gov.au/places-to-see/parks/spring-plains-nature-conservation-reserve. It contains only general information on visiting reserves (at 30/6/2023).

Discovery Guides to Heathcote's Forests: Geology, Historical Note, Eucalypts, Understorey, Wildflowers, Animals, Birds and *Insects* are available from the Heathcote Information Centre. The valuable information in these Guides has been used in this note.

Taungurung Land and Water Council at https://taungurung.com.au/. Taungurung Recognition and Settlement Agreement at https://www.justice.vic.gov.au/your-rights/native-title/taungurung-recognition-and-settlement-agreement

Environment Conservation Council/Victorian Environment Assessment Council Box-Ironbark Forests and Woodlands Investigation—Resources and Issues Report and Final Recommendation. https://veac.vic.gov.au/investigations-assessments/previous-investigations/investigation/box-ironbark-forests-woodlands-investigation-ecc-2001

Pigott, J.P., Palmer, G.P., Yen, A.L., Tolsma, A.D., Brown, G.W., Gibson, M.S. & Wright, J.R. (2010). *Establishment of the Box-Ironbark Ecological Thinning Trial in north central Victoria*. Proceedings of the Royal Society of Victoria 122(2): 111-122. ISSN 0035-9211. https://www.publish.csiro.au/rs/pdf/rs10020

Brown, G.W., A, Murphy, B. Fanson, A. Tolsma (2019). The influence of different restoration thinning treatments on tree growth in a depleted forest system. Forest Ecology and Management Volume 437, 1 April 2019, Pages 437: 10-16. https://www.sciencedirect.com/science/article/abs/pii/S037811271831956X?via%3Dihub

Biolinks Alliance (2024). Spring Plains Watershed Repair Project. https://biolinksalliance.org.au/spring-plains

Victorian Heritage Inventory. Information on Hedley's Water Race at https://vhd.heritagecouncil.vic.gov.au/places/11658/download-report

Goulburn Broken CMA Revegetation Guide: information on different ecological vegetation communities, plant communities and plants in the Goldfields zone at https://www.gbcma.vic.gov.au/revegetation/zones/goldfields

Acknowledgements

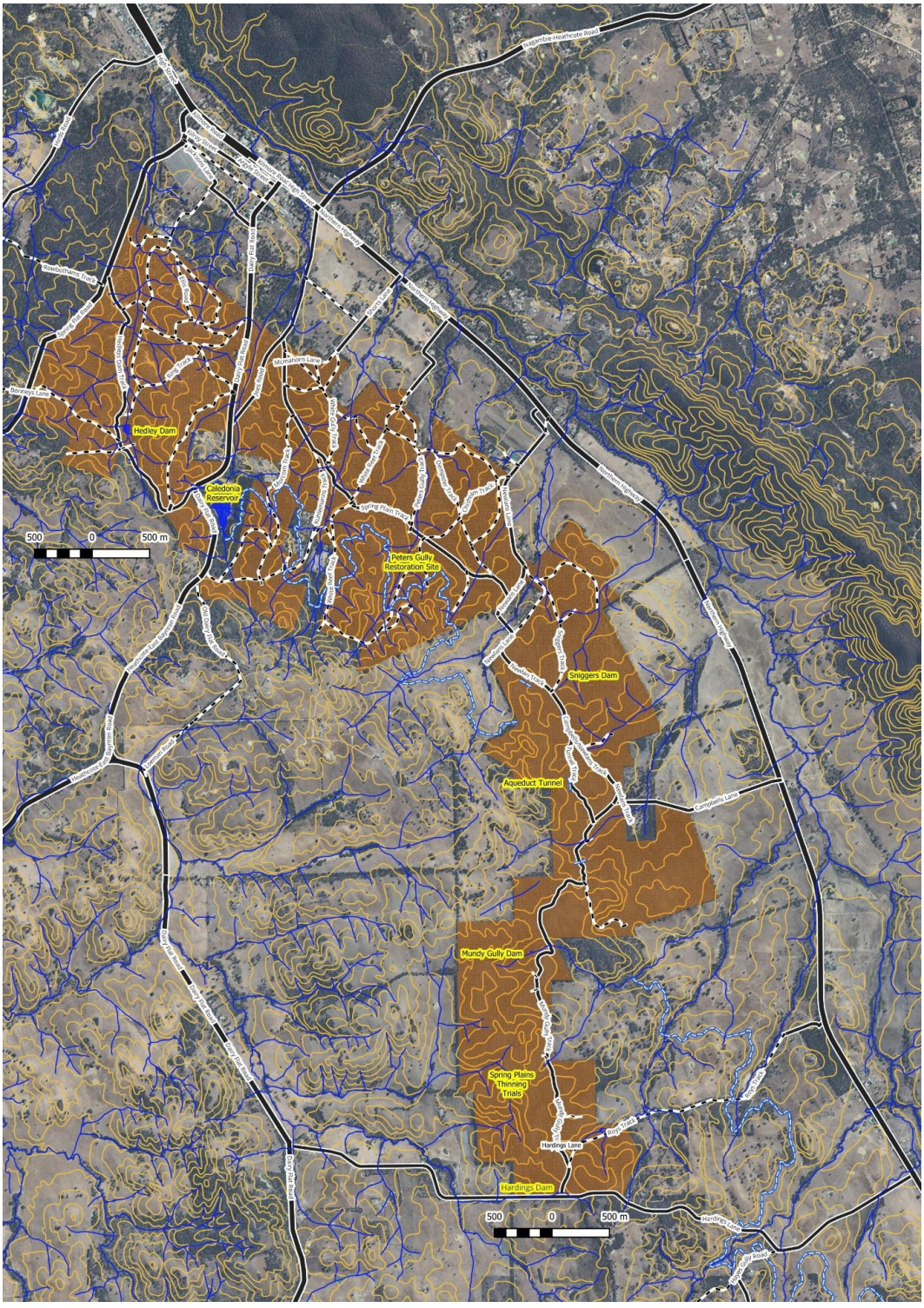
This Reserve Note was prepared by BEAM Mitchell Environment Group. Thanks to Mitchell Shire Council for their assistance and support. Biolinks Alliance provided information for these Notes.

Author: Peter Mitchell

Version: 1 19 May 2024

These notes are a work in progress. If you have any comments or additional information on the nature and ecological history of Spring Plains NCR, please contact us at https://www.beam.org.au/contact,

Spring Plains Nature Conservation Reserve



Notes on roads in Spring Plains NCR

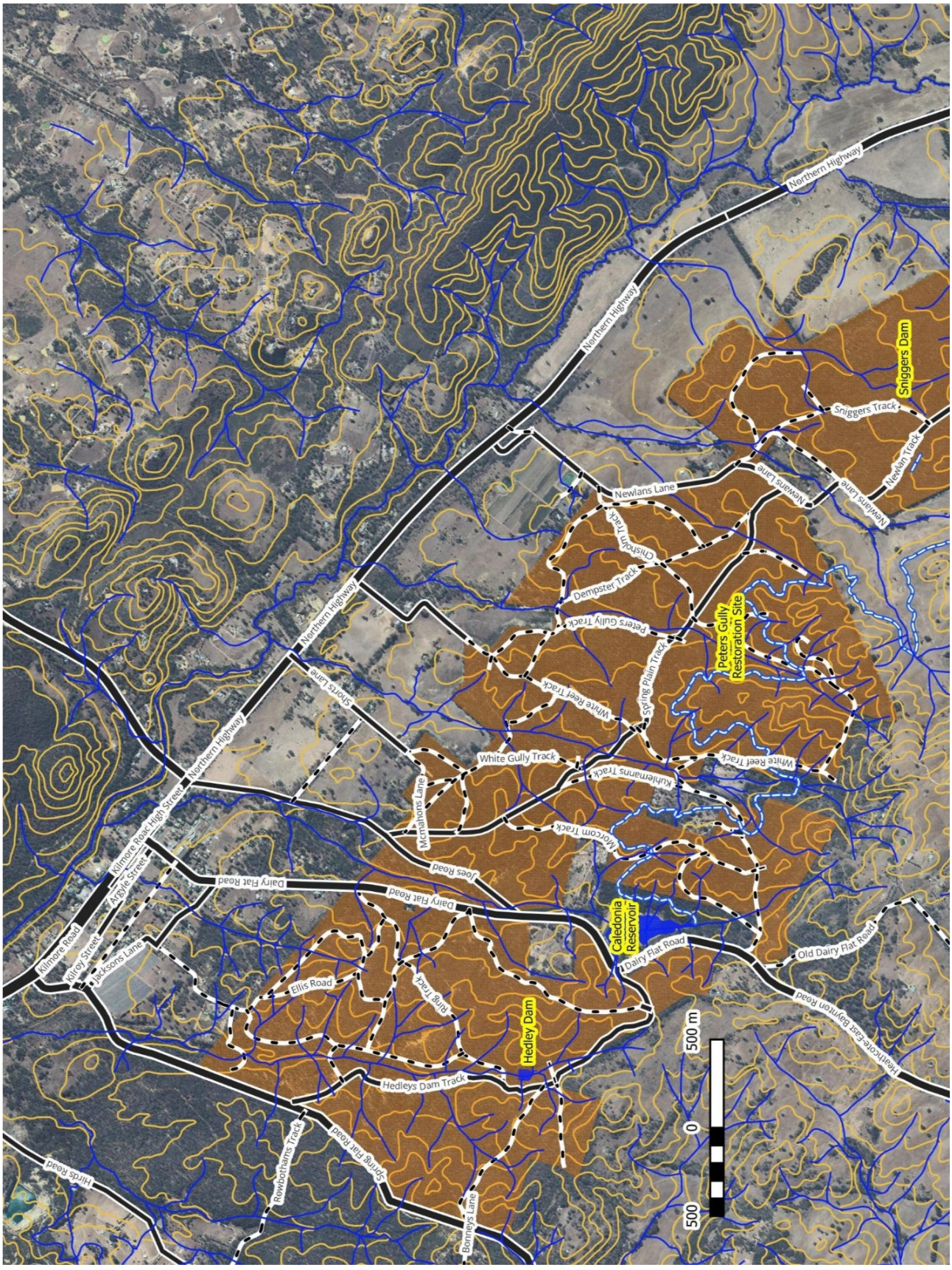
Some but not all roads were checked in the preparation the maps in this Reserve Note. Roads were classed as:

- *Main roads*: wide and mostly sealed and well maintained.
- *Routes through forest*: main route through the Reserve and access roads into the Reserve. Narrow mostly single lane roads but generally dry and passable. Does have some steep short rocky sections and may be wet patches after rain.
- *Tracks*: vehicle tracks, mostly in the Reserve. Variable, but may be rough with rocky and steep sections and some shallow washouts. Some are overgrown and a few have bogs unsuitable for most vehicles. The map shows tracks that were marked on official maps (such as MapShare). Many of the tracks were checked, at least where they branched from the main routes and often by driving the tracks or checking where they were visible on aerial photos. There are also several unmarked and unmapped tracks that were noted where they left the main routes.

Note: All roads and tracks are subject to changes due to water, erosion, fallen trees and road closures by Parks Victoria.

Road signs: some intersections have signposts often in poor condition. Some of the names on these signs differ from the names on official maps (see Directions above).

There are more maps on the next two pages.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Sniggers Track
Newlan Track
Newlans Lane
Newlans Lane
Newlans Lane
Chisholm Track
Dempster Track
Peters Gully Track
Peters Gully Restoration Site
Spring Plain Track
White Reef Track
White Reef Track
White Gully Track
Kuhlemanns Track
Motocom Track
McMahons Lane
Joes Road
Dairy Flat Road
Dairy Flat Road
Old Dairy Flat Road
Heathcote-East Baynton Road
Caledonia Reservoir
Dairy Flat Road
Ellis Road
Ring Track
Hedley Dam
Hedleys Dam Track
Spring Flat Road
Rowbothams Track
Bonneys Lane
Hilltops Road
Northern Highway
Northern Highway
Northern Highway
Shorts Lane
Kilmore Road
High Street
Argyle Street
Kilmore Road
Killoy Street
Jacksons Lane
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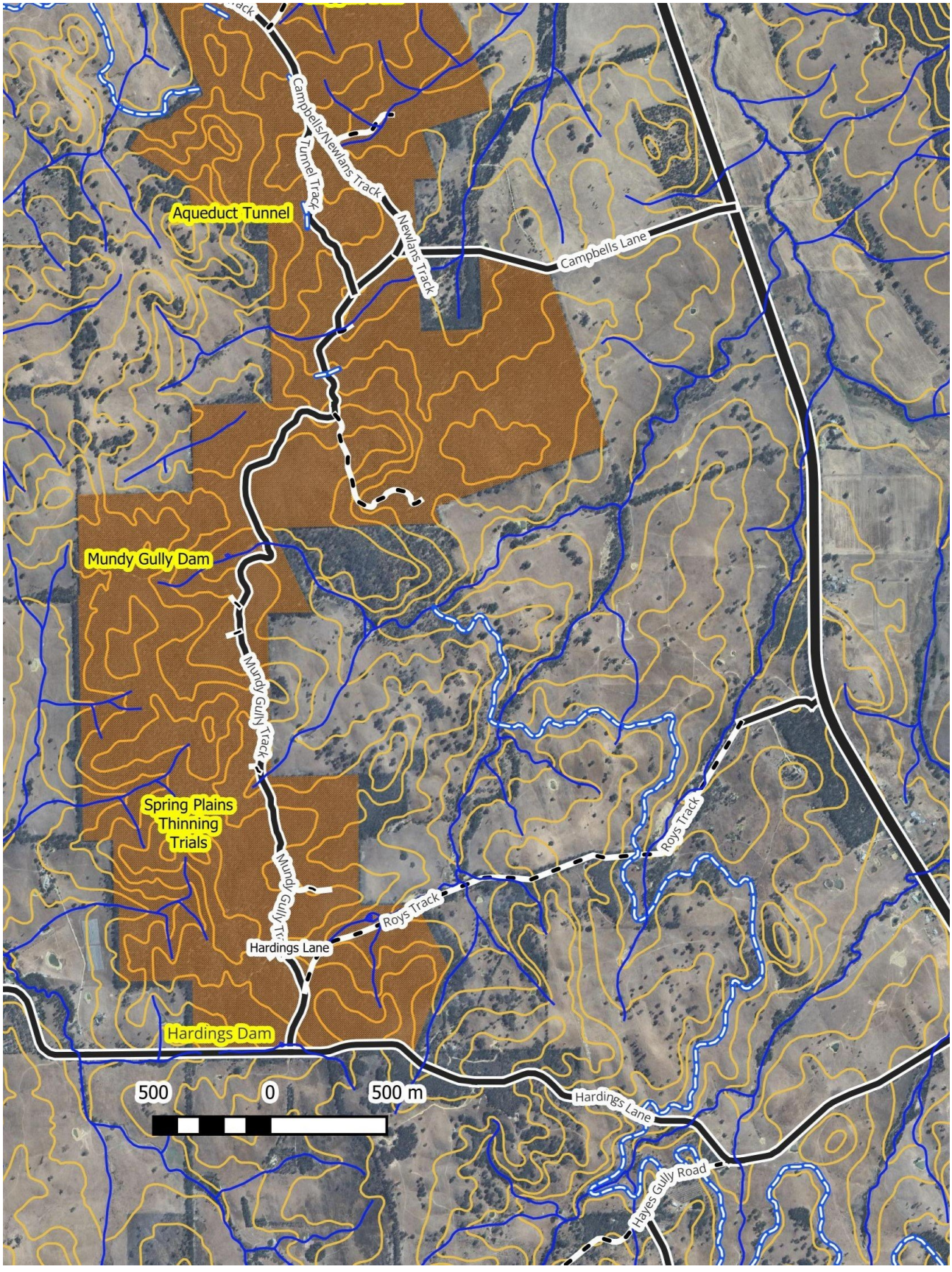
Campbells/Newlans Track
Tunnel Track
Aqueduct Tunnel
Newlans Track
Campbells Lane
Mundy Gully Dam
Mundy Gully Track
Spring Plains Thinning Trials
Mundy Gully Track
Roys Track
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Hayes Gully Road