

Stage 4 Lesson 9

Oxley Park, Special Place Background document



Oxley Park Reserve, Tamworth – Endeavour Marsupial Park Depot track

3.1 Introduction

Welcome to the 'Special place' pack for Oxley Park Reserve, Tamworth. Until about 400 million years ago, the area where Tamworth is today was in a shallow ocean. Siltstones and sandstones deposited up to this time were changed by the uplift that formed the great diving range, leading to the formation of precious stones to the north and the concentration of gold around Nundle. The rock that you can see is from this time, when Australia was still part of the supercontinent Gondwana. The whole continent enjoyed a humid, mild climate, and rainforest covered Australia.

Australia eventually broke away from Gondwana around 65 million years ago. As it did so, it made its way north, drying as it went. As Australia dried, its rainforests were overtaken by species better adapted to dryer conditions. Small pockets of rainforest can still be seen along the eastern fall of the ranges; you will find and recognise these rainforest remnants right here.

One reason why Oxley Park Reserve site is special because it provides a window to the past 400 million years. Use the activities to learn about ecosystems and why they are there, but more importantly try to capture what your site was like 400 million years ago, and even 200 years ago.

Tasks can be completed as individual or combined components over one day or multiple short trips, depending on student numbers, time constraints and teacher support. For more information on formation of the site, see *A Brief History of the North West*.

Special features of Oxley Park Reserve

- Close proximity to Tamworth city – just 1 km east of the city centre.
- Quiet – a peaceful oasis away from busy roads.
- Free and easy to access (although not suitable for wheelchairs past the parking area).
- Area of over 500 hectares that:
 - includes mature stands of shrubby white box woodland, and high-quality remnants of grassy white box woodland – an endangered ecological community (EEC)
 - contains remnant dry rainforest species
 - is home to threatened species of plants (e.g. *Dichanthium setosum* and *Tylophora linearis*) and animals (e.g. the border thick-tailed gecko, speckled warbler, brown tree creeper and squirrel glider)
 - has a high diversity of plants (native grasses, herbs, shrubs and trees) and animals (birds, mammals and reptiles).

Many of the plants within Oxley Park were used by the Kamilaroi (also known as Gomilaroi and other spellings) tribe as bush tucker, medicines, implements (for food and hunting, and as weapons), twine or rope (for both practical and decorative purposes), dyes and glues (McKemey & White 2011).

The walk along the ridge into the gully starts with exposed north-facing slopes of shrubby and grassy white box woodland, then moves to the gully, where ferns, mosses, and lichens grow among rocks on the protected south-facing slope. Along the less-exposed sections of the trail are remnant dry rainforest species, a reminder of ancient rainforests that once covered inland areas when Australia was part of Gondwana.

Oxley Park became a public reserve of 372 hectares in 1888, and has since expanded to 522 hectares. It is managed by Tamworth Regional Council as trustee on behalf of the Crown Lands Division of the Department of Trade and Investment.

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Figure 3.1: View of the construction of the road to the lookout in Oxley Park during the Great Depression in 1935
Note the grassy woodland to the top of the hill (from Green & Newman 1970).

Figure 3.2: Same scene as in Figure 3.1, but taken in March 2013
Note the thick understorey of native and exotic shrubs.

Flora of Oxley Park Reserve

As explained above, Oxley Park Reserve is predominantly a shrubby woodland dominated by white box (Fig. 3.3) with areas of grassland that fit the description of the EEC 'grassy white box woodland'. The NSW Threatened Species Conservation Act 1995 (TSC Act) defines an ecological community as 'an assemblage of species occupying a particular area'. Ecological communities can be listed under the TSC Act as 'critically endangered', 'endangered' or 'vulnerable', depending on their risk of extinction (OEH 2012).

The reserve is rich in different species, containing at least 243 native plant species (AHD 2013). Common natives include:

- white cypress pine (Fig. 3.4) – growing mainly along the western side of the park
- rough-barked apple (Fig. 3.5) – scattered throughout the park
- blakely's red gum (Fig. 3.6) – found in the long gully behind the marsupial park
- *Dichanthium setosum* (Fig. 3.7).

Figure 3.3: Regenerating grassy white box (*Eucalyptus albens*) woodland within Oxley Park Reserve

Figure 3.4: White cypress pine (*Callitris glaucophylla*) – fire susceptible

Figure 3.5: Rough-barked apple (*Angophora floribunda*) – fire resistant

Figure 3.6: Blakely's red gum (*Eucalyptus*

Figure 3.7: *Dichanthium setosum*

Sheltered gullies within the park support remnant dry rainforest species, such as native olive (Fig. 3.8), kurrajong (Fig. 3.9), ravine bird's eye (*Alectryon forsythii*) and wild orange (*Capparis mitchellii*) (Hosking 1990).

Figure 3.8: Native olive (*Notelaea microcarpa* var. *microcarpa*) habit and foliage; fire-susceptible dry rainforest

Figure 3.9: Kurrajong (*Brachychiton populneus*) habit (A) and foliage (B); fire-susceptible dry and ravine bird's eye, both rainforest remnants.

Common native grasses and herbs include kangaroo and tussock grasses, chocolate lily (*Dichopogon fimbriatus*) and bulbine lily (*Bulbine bulbosa*). Among the threatened plants found in the reserve, both *Dichanthium setosum* and *Tylophora linearis* are listed under the TSC Act and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

As a conifer, white cypress pine is sensitive to fire, unlike the eucalypts and many shrubs that have evolved with fire. Native plants with fire-adapted strategies benefit from fire. For example, mature wattle plants could be killed by fire; however, the wattle seeds will survive in the soil and germinate after fire. The absence of fire favours regeneration of white cypress pine and hop bush (species that are becoming dominant in areas across the north-west slopes that were once cleared for grazing); it also locks up cypress pine, resulting in thick stands of stunted trees that inhibit understorey growth.

A number of introduced (exotic) plants have spread throughout the park; those that have naturalised are concentrated along the park boundary. Threats to grassy woodlands include clearing and modification, fragmentation, firewood cutting, inappropriate burning practices, soil disturbance and acidification, increased nutrient levels, salinity and weed invasion (OEH 2011). Exotic plants invade disturbed roadside areas – *Cotoneaster* (from gardens) and *Pyracantha* (from garden and farm windbreaks) are common weedy examples. Two weeds listed under environmental legislation – bridal veil creeper and coolatai grass (Fig. 3.10) – are seen along Endeavour Drive; both pose serious environmental problems for the park. For example, coolatai grass is resistant to drought and fire, has a high tolerance to herbicides and is invading undisturbed natural ecosystems.

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Figure 3.10: Coolatai grass invasion along the roadside to the Marsupial Park

Fauna of Oxley Park Reserve

Oxley Park provides habitat for 187 native species of animals, including 21 mammals (13 of which are bats), 11 frogs, 35 reptiles and 120 birds. Of these, at least 13 are rare or threatened species, including:

- squirrel glider (Fig. 3.11)
- border thick-tailed gecko (Fig 3.12)
- grey-headed flying fox
- yellow-bellied sheath-tail bat and eastern bentwing bat
- eight birds – speckled warbler (Fig 3.13), turquoise parrot, brown treecreeper (Fig. 3.14), diamond firetail finch, varied sittella, swift parrot, little lorikeet and little eagle.

Figure 3.11 a, b Squirrel glider (*Petaurus norfolcensis*); listed as vulnerable under the TSC Act

Figure 3.12: Border thick-tailed gecko (*Underwoodisaurus sphyrurus*); listed as vulnerable under the TSC Act and the EPBC Act

Figure 3.13: Speckled warbler (*Chthonicola sagittata*); listed as vulnerable under the TSC Act

Figure 3.14: Brown treecreeper (*Climacteris picumnus victoriae*); listed as vulnerable under the TSC Act

Remnant vegetation (i.e. native vegetation) probably supports a large proportion of the invertebrate populations that are adapted to that vegetation type, as shown in Table 3.1

Table 3.1 Species supported by white box woodland remnants

Support provided	Species supported	Listing	Source
Food source (nectar)	Swift parrot (<i>Lathamus discolor</i>)	TSC and EPBC Acts	AHD 2013
	Regent honeyeater (<i>Anthochaera phrygia</i>)	TSC and EPBC Acts	AHD 2013
	Little red flying fox (<i>Pteropus scapulatus</i>)		
	Grey headed flying fox (<i>Pteropus poliocephalus</i>)	TSC and EPBC Acts	
Habitat	Squirrel glider (<i>Petaurus norfolcensis</i>)	TSC Act	OEH 2011

The main threats to the habitat are weed invasion, encroaching shrub storey, loss of grass ground cover and feral animals (at least eight species are found in the park; those seen most often are cats, foxes and goats).

Remnant vegetation is crucial for maintaining native biodiversity and ecosystems in the Quipolly area. Diverse ecosystems maintain robust food webs which are of value to grazing and cropping enterprises and society in general. Micro bats live under tree bark and in the hollows of old trees. The micro bats that thrive here including the rare Yellow-bellied sheath-tail bat eat over half of their body weight of flying insects each night including mosquitoes which can carry Ross River virus, a disease which can be lethal to people. Improving remnant vegetation improves the resilience of these food webs which in turn improve the resilience of human communities.

Figure 3.15: Yellow-bellied sheath-tail bat (*Saccolaimus flaviventris*) is listed as vulnerable under the TSC Act and is known to inhabit tree hollows within the Quipolly Dam area.

Geology of Oxley Park Reserve

Oxley Park Reserve is part of the Baldwin Formation, where sediments were laid down during the Devonian Age 350 million years ago. Subsequent movement of the tectonic plates of the Yarrol–New England provinces raised the sediments to their current position (Munroe 2008), as shown by the numerous striped rocks in the area (Fig. 3.15). Most of Oxley Park is on shallow red-brown earth that has largely been cleared within the district (AHD 2013).

Figure 3.16: Metamorphic rocks of sedimentary origins are common right beside igneous (volcanic basalt) along the walk behind the Endeavour Marsupial Park

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References

AHD (2013). Oxley Park. Australian heritage database. <http://www.environment.gov.au/heritage/ahdb/> accessed 8 March 2013.

Department of Environment and Heritage (2011). Grassy white box woodlands. <http://www.environment.gov.au/biodiversity/threatened/publications/gras-white.html> accessed 8 March 2013.

Green L and Newman W (1970). Chronological history of Tamworth, Volume 3, 1934.

Hosking JR (1990). Flowering times of plants found in Oxley Park, Tamworth. *Cunninghamia* 2(2):197–216.

McKemei M and White H (2011). Bush tucker, boomerangs and bandages: Traditional Aboriginal plant use in the Border Rivers and Gwydir Catchments. Border Rivers-Gwydir Catchment Management Authority, NSW.

Munroe MH (2008) Australia: The Land Where Time Began http://austhrutime.com/perman_period.htm

OEH (2012). Threatened Ecological Communities. NSW Office of Environment and Heritage. <http://www.environment.nsw.gov.au/threatenedspecies/hometec.htm> accessed 8 March 2013.

Wikipedia (modified on 27 February 2013). Tamworth, NSW. http://en.wikipedia.org/wiki/Tamworth,_New_South_Wales accessed 1 March 2013.

Oxley Park species list

This appendix lists the species recorded, or likely or predicted to occur at Oxley Park.

Native flora – canopy

Blakely's red gum (*Eucalyptus blakelyi*)

Rough-barked apple (*Angophora floribunda*)

White box (*Eucalyptus albens*)

White cypress (*Callitris glaucophylla*)

Native flora – midstorey

Blackthorn (*Bursaria spinosa*)

Blue grass (*Dicanthium setosum*) – threatened

Cough bush (*Cassinia quinquefaria*)

False sarsaparilla (*Hardenbergia violacea*)

Kurrajong (*Brachychiton populneus*) – dry rainforest

Narrow leaved croton (*Croton phebaloides*) – dry rainforest

Native cherry (*Exocarpos cupressiformis*) – dry rainforest

Native olive (*Notelaea microcarpa* var. *microcarpa*) – dry rainforest

Native orange (*Capparis mitchellii*) – dry rainforest

Ravine bird's eye (*Alectryon forsythii*) – dry rainforest

Rusty fig (*Ficus rubiginosa*) – dry rainforest

Slender tylophora (*Tylophora linearis*) – threatened twiner

Sticky daisy (*Olearia elliptica*)

Sticky hop bush (*Dodonaea angustifolia*)

Sweet pittosporum (*Pittosporum undulatum*) – dry rainforest

True sandalwood (*Santalum lanceolatum*) – dry rainforest

Weeping pittosporum (*Pittosporum angustifolium*) – dry rainforest

Western golden wattle (*Acacia decora*)

Yellow-berry bush (*Maytenus cunninghamii*)

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Native flora – ground layer

Barb-wire grass (*Cymbopogon refractus*)

Flax lily (*Dianella* sp.)

Kangaroo grass (*Themeda australis*)

Lomandra (*Lomandra* sp.)

Spear grass (*Austrostipa scabra*)

Weeds

African olive (*Olea europaea* subsp. *cuspidata*)

Bidens (*Bidens pilosa*)

Blue heliotrope (*Heliotropium amplexicaule*)

Bridal veil creeper (*Asparagus asparagoides*)

Broad-leaved privet (*Ligustrum lucidum*)

Chinese pistachio (*Pistachio chinensis*)

Coolatai grass (*Hyparrhenia hirta*)

Cotoneaster (*Cotoneaster glaucophyllus*)

Greater periwinkle (*Vinca major*)

Green cestrum (*Cestrum parqui*)

Jacaranda (*Jacaranda mimosifolia*)

Pepper tree (*Schinus areira*)

Prickly pear (*Opuntia stricta*)

Fire thorn (*Pyracantha crenulata*)

Tiger pear (*Opuntia aurantiaca*)

Tweedia (*Tweedia coerulea*)

White cedar (*Melia azedarach*) – native weed

Plants traditionally used by Aboriginal Australian

Belah

Hop bush

Kangaroo grass

Kurrajong

Lignum

Lomandra

Mitchell grass

Native cherry

Native millet

Native orange

Nepine

New Zealand spinach

Rough-barked apple

Ruby saltbush

Warrior bush

White box

White cypress pine

Native animals

Border thick-tailed gecko (*Underwoodisaurus sphyrurus*)

Brown treecreeper (*Climacteris picumnus victoriae*)

Diamond firetail finch

Eastern bentwing bat

Grey headed flying fox (*Pteropus poliocephalus*)

Little eagle

Little lorikeet

Little red flying fox (*Pteropus scapulatus*)

Regent honeyeater (*Anthochaera phrygia*)

Speckled warbler

Squirrel glider (*Petaurus norfolcensis*)

Swift parrot (*Lathamus discolor*)

Turquoise parrot

Varied sittella

Yellow-bellied sheath-tail bat

Feral animals

Cats

Dogs

Goats

Rabbits



Source: Phil Spark NW LLS