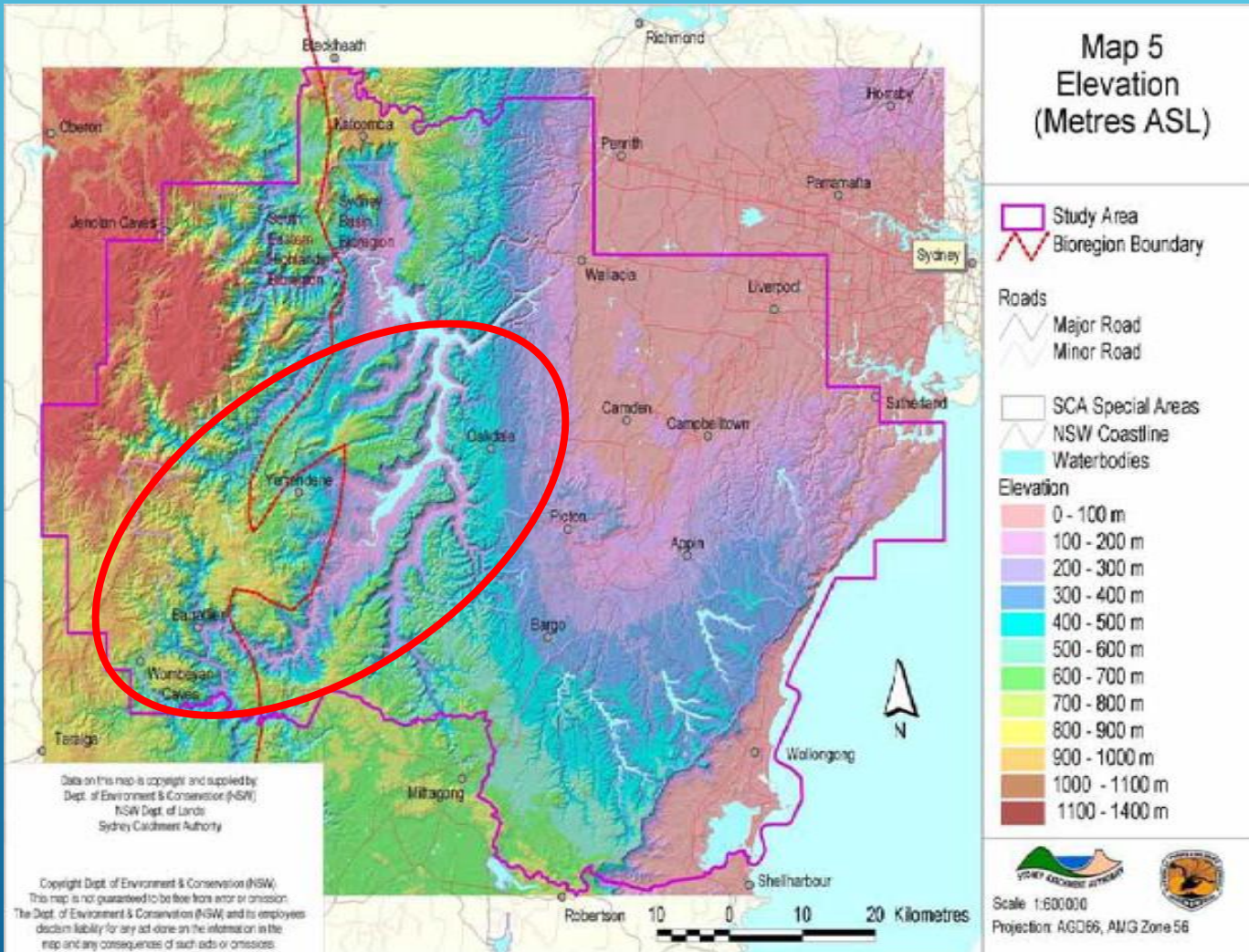


THE BURRAGORANG –
A HIDDEN REFUGE IN THE
WARRAGAMBA CATCHMENT
AREA

Wildlife Sanctuary at Risk

BURRAGORANG - LOCATION

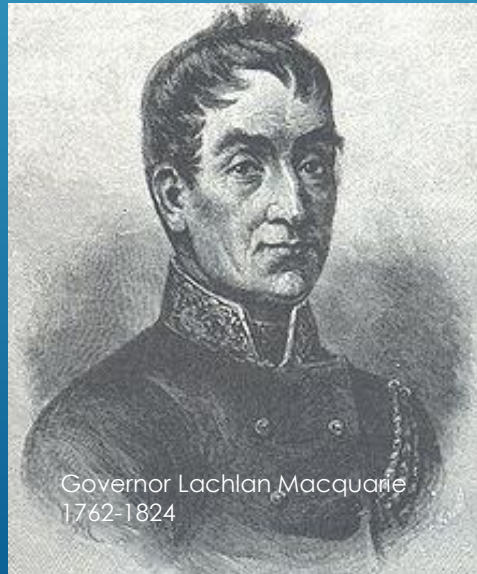
- ▶ The Burragorang is a name used by the Gundungurra people for the valley areas of the lower Nattai and lower Cox's Rivers and much of the Wollondilly River Valley (Barrett 1995).
- ▶ The Burragorang lies within the Warragamba Catchment Area situated approximately 70 km south-west of Sydney.
- ▶ The name originates from the story of the great kangaroo Burru-bug-ga-rabang which was hunted by Bulla-bulan and escaped in the large water hole of the Wollondilly at upper Burragorang, thus Burra-ga-ra-bang refers to the great kangaroo's place of escape (Barrett 1995).
- ▶ These rivers now flow into the Warragamba Dam impoundment, Lake Burragorang, which has flooded part of the Burragorang area.
- ▶ The dam waters discharge into the Nepean River.



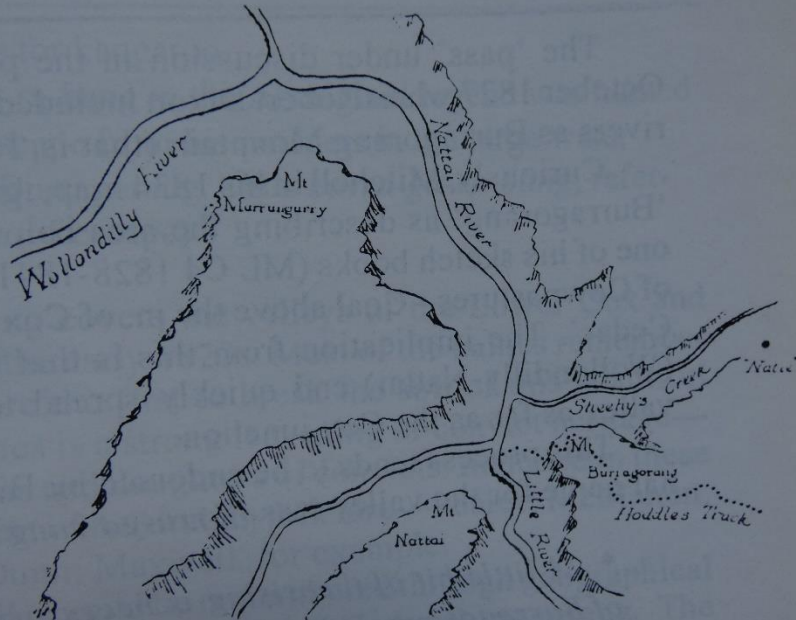
HISTORY – EARLY DISCOVERY BY EUROPEANS



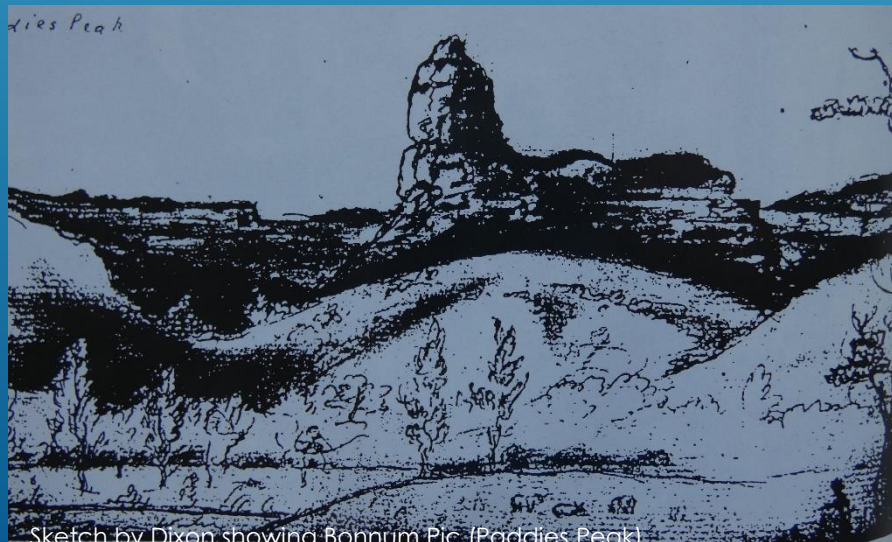
- ▶ 1796 – George Bass, surgeon and explorer, may have been one of the first Europeans to view Burratorang in his attempts to find a way west of the Blue Mountains. Leaving from Mount Hunter near Camden...”being often stopped by precipices he caused himself to be let down by ropes into the very abyss...” (Barrett 1995).
- ▶ 1802 – Barrallier established a depot *Natai* then followed Sheehy’s Creek to the Nattai River and then downstream to its junction with the Wollondilly River (Barrett 1995). He travelled as far west as Christy’s Creek on the Kowmung River.
- ▶ 1815 – John Warby and Aborigine Boodbury (Badbury) escorted Governor Macquarie into the Nattai Valley arm of Burratorang, travelling from Picton to the top of Mt Burratorang, then descending via Sheehy’s Creek or its tributary Kitty Creek, to the Nattai River. They had to leave the horses at the head of a deep gully and descend on foot to where the Nattai and Little Rivers join which Macquarie called “Glencoe”. Warby told Macquarie the river continued for another nine miles (16 miles) where it joined the “Waragombie” (Warragamba) (Barrett 1995).



HISTORY – EARLY SURVEYORS AND MAPPING



Early map showing Hoddles Track

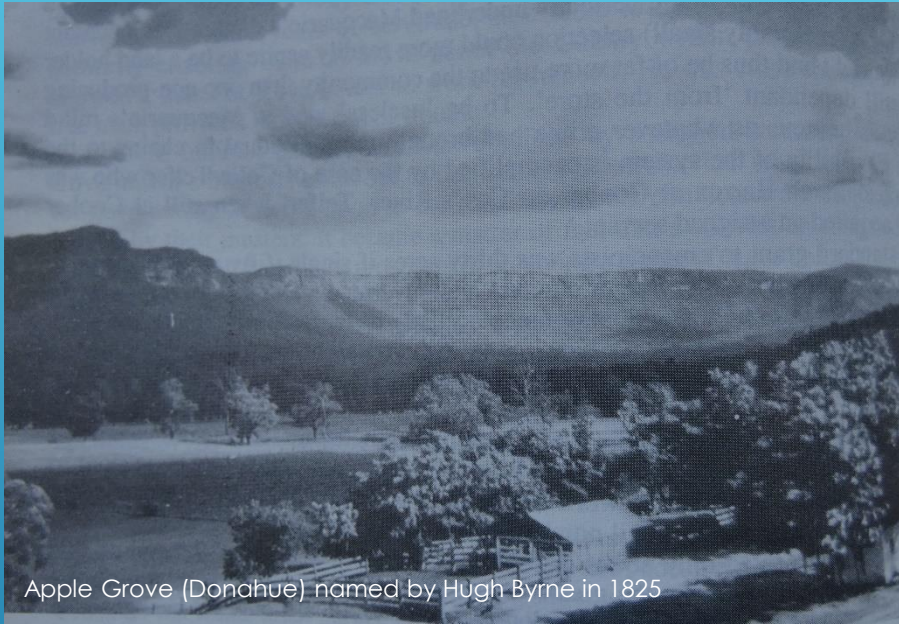


Sketch by Dixon showing Bonnum Pic (Paddies Peak)

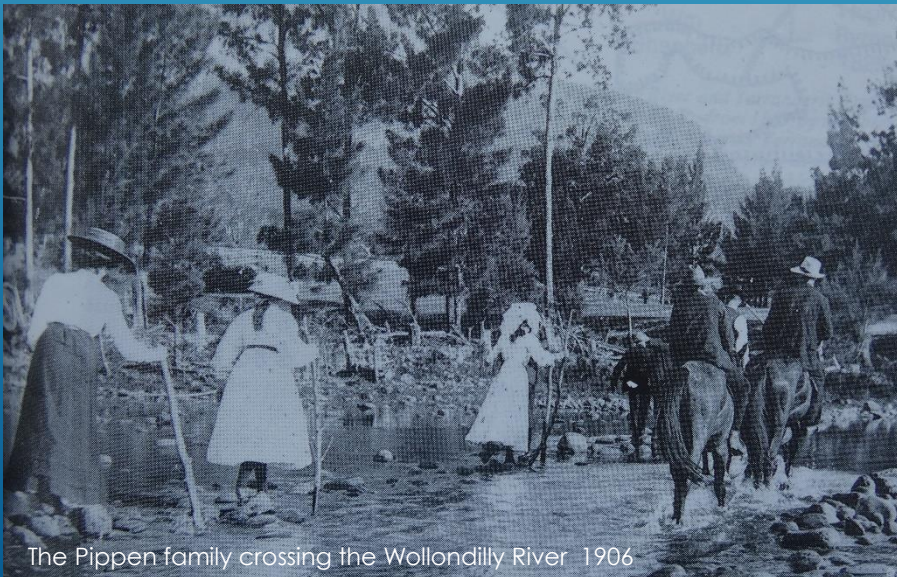
- ▶ 1824 – Surveyor Robert Hoddle was sent on an exploratory journey into the Burragorang but did not take the gully route but rather ...”came upon the Top of the Hill under which is the valley called by the natives Burragorang – distant 25 miles from Kirkham...” (near Narellan) (Barrett 1995).
- ▶ Hoddles route down the ridge became known as Hoddle's Track. He described the route as steep and dangerous. His baggage horse was nearly killed in the descent, “...falling at least 20 yards...”. On his return journey he named the mountain Burragorang Mountain (Barrett 1995).
- ▶ Hoddle was attributed with the discovery of Burragorang but Barrett (1995) believed that convicts on the loose and/or John Warby were the first Europeans to be aware of its existence .
- ▶ 1827 – Surveyor Robert Dixon named the prominent peak, Bonnum Peak which surveyor Mitchell later changed to Bonnum Pic in 1834 (Barrett 1995).

HISTORY – OCCUPATION BY EUROPEANS

AGRICULTURE AND MINING



- ▶ 1820's – European settlers began to occupy the valleys of the Lower Cox and Lower Wollondilly Rivers to establish farms on the fertile river flats. Names such as Pearce, McMahon, O'Reilly, Carlon, Chiddy, Seymour, Dunn and Maxwell, are reflected in many of the names on landforms in the Burragorang (Barrett 1995).
- ▶ Access into the valley by road remained difficult for settlers until 1907 when the Sheehy's Creek road was constructed . Prior to that roads were only negotiable by bullocks and drays which had to be let down piece by piece by ropes (Barrett 1995).
- ▶ Alerted by the Aboriginal people of the presence of silver and lead and smaller amounts of gold and zinc, these minerals were mined at Yerranderie from the early 1900's to the 1930's. (DECC 2007).
- ▶ Coal mining has occurred beneath the sandstone escarpments around and within the Burragorang area from the mid 1930's to the 1980's (DECC 2007).



HISTORY – ABORIGINAL PEOPLE

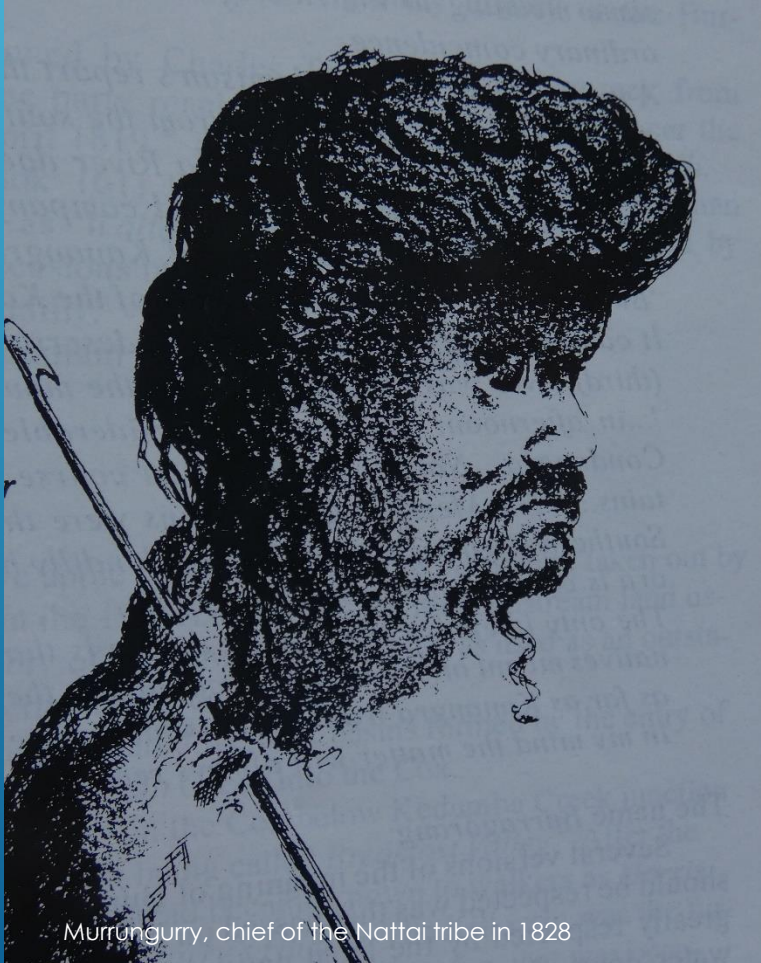


The Red Hands Rock near Bimlow in the Lower Burragorang is now under the waters of Lake Burragorang.

- ▶ The Aboriginal people of the Burragorang are part of the Gundungurra nation who occupied the watersheds of the Cox and Wollondilly Rivers, extending east to Picton and Mittagong and west to the Kowmung and Abercrombie catchments (Barrett 1995, DECC 2007).
- ▶ Little is recorded of the way of life of the Burragorang Aboriginal people but the abundant freshwater, fertile river flats and grassy woodlands and valleys would have provided rich foraging grounds for hunting kangaroo and emu.
- ▶ Barrallier in 1802 noted their use of boomerangs which he said were not used by the Sydney Aboriginals (Barrett 1995).
- ▶ It is likely that the routes into the Burragorang used by early explorers and settlers were based on information gained from local Aboriginal people, especially Brimstone Gully, Sheehy's Creek and Hoddles Track (Barrett 1995).

HISTORY – ABORIGINAL PEOPLE - CONFLICT

- ▶ As competition for land between Europeans and Aboriginal people increased and the drought of 1812-1816 struck, the Gundungurra joined with the Dharawal on their traditional hunting grounds at Appin. Farmers crops were plundered and Macquarie sent troops to frighten the natives but this resulted in war between the troops and Aboriginal people. One of the Burragorang chiefs was Goondel who Barrallier had met in 1802 (Barrett 1995).
- ▶ Battles occurred at the Cowpastures, Appin, Narellan, Bringelly, Minto, Mulgoa and Wallacia. It culminated in a battle at Cataract Gorge in 1816 where many Aboriginal people were killed or taken prisoner (Barrett 1995).
- ▶ The Aboriginal population of the Burragorang declined and by the 1840's it was thought fifty or sixty Aboriginal people were camped throughout the valley (Billy Russell in Barrett 1995). In the 1840's the chief of the Nattai Moyengully (Murrungurry) approached Patrick Carlon for access to the corn crop which he provided (Barrett 1994,1995).
- ▶ By 1897 the school at the Aboriginal settlement at Pocket Creek on the Cox's River was closed and the last resident family was transferred to La Perouse Reserve by 1918 (Barrett 1995).



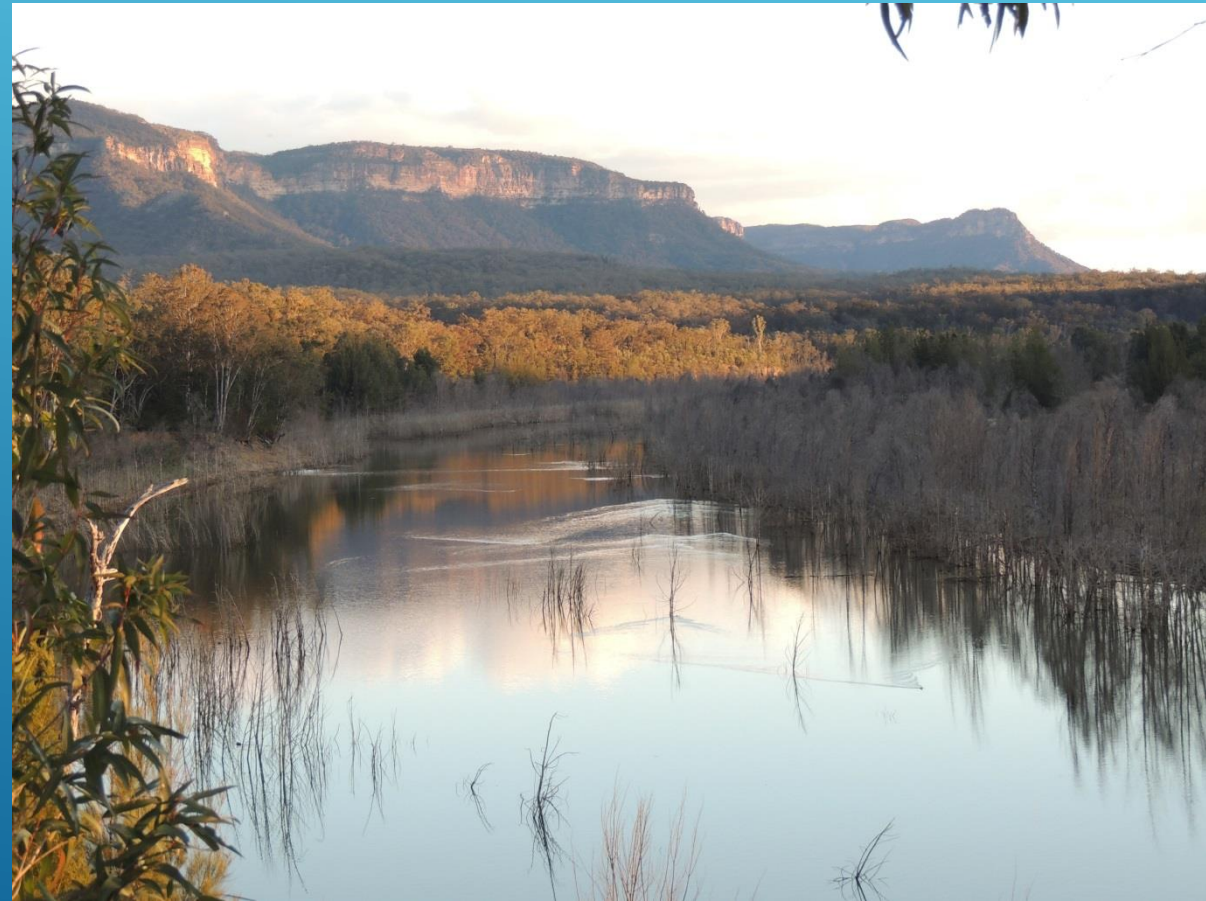
Murrungurry, chief of the Nattai tribe in 1828

HISTORY – WARRAGAMBA DAM



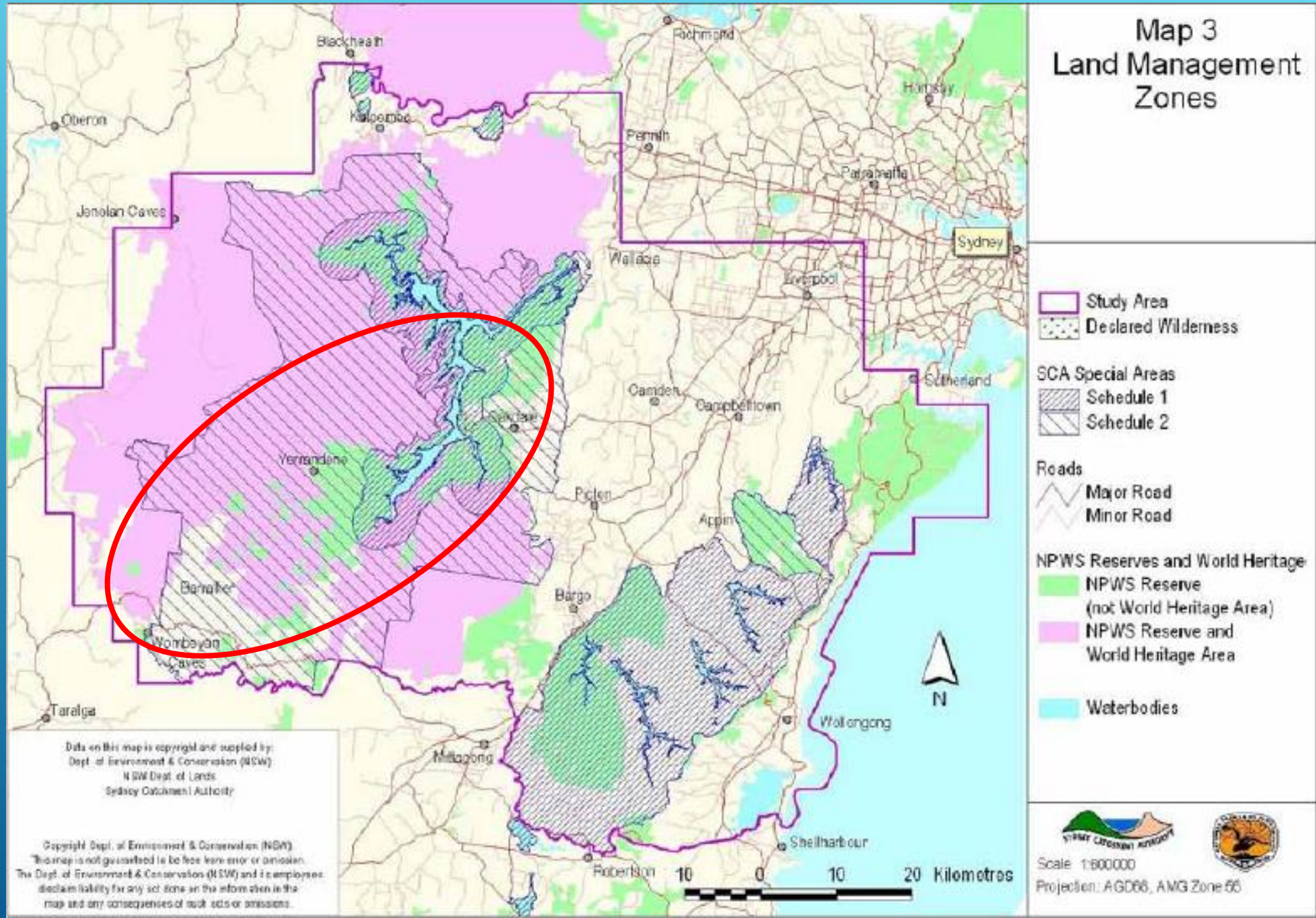
- ▶ The construction of Warragamba Dam began in 1948 after the severe drought of 1934 -1942 and was completed in 1960 (DECC 2007).
- ▶ The dam created the impoundment of Lake Burragorang which flooded a large part of the Burragorang area, over 10,000 hectares from the Wollondilly River to the junction of the Cox's and Kowmung Rivers and part of the lower Nattai River (DECC 2007).
- ▶ The impoundment flooded whole settlements, farming lands, woodlands and riparian forests. The dam wall prevented the breeding movements of native fish to the rivers upstream of the impoundment (DECC 2007, Barrett 1995).
- ▶ With the dam completed restrictions on public access to its catchment were put in place. In Schedule 1 areas all public access was prohibited except on foot in defined corridors. Schedule 2 areas are managed as a buffer zone with some restrictions on vehicle access and recreational activities.

CURRENT MANAGEMENT – WATER QUALITY AND CONSERVATION

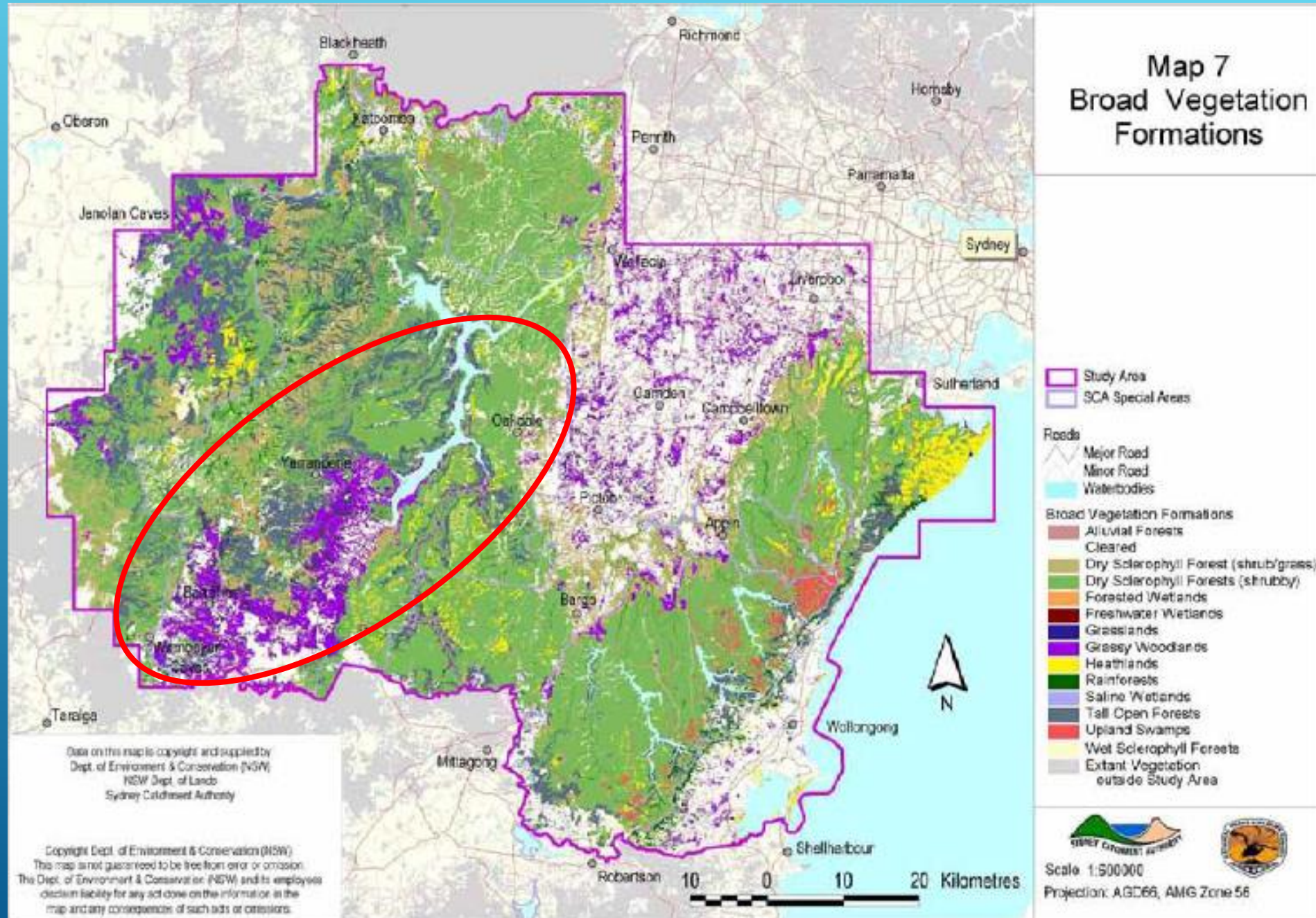


- ▶ Today the Warragamba Catchment Area is managed for water quality and conservation with the majority of its catchment area falling within the Blue Mountains, Kanangra-Boyd and Nattai National Parks and the Burragorang and Yerranderie State Conservation Areas. The area known as Burragorang falls within parts of all these reserves.
- ▶ These national parks and reserves protect a very diverse array of ecosystems, extensive areas of wilderness and pristine wild rivers and are of high cultural significance for Aboriginal people.
- ▶ The outstanding biodiversity values of the Blue Mountains National Parks was recognised in 2000 when the Greater Blue Mountains Region was included on the World Heritage Register for outstanding natural and scenic values, particularly the high diversity of Eucalypt species (DECC 2007).

LAND MANAGEMENT



OUTSTANDING BIODIVERSITY – VEGETATION



WOODLANDS - WHAT IS A WOODLAND ?



Grey Box old growth Woodland, Burragorang valley

- ▶ Woodlands are vegetation communities dominated by trees where trees are widely spaced and tree canopies often don't touch.
- ▶ Trees are commonly eucalypts but may include She-oaks, native pine or wattle.
- ▶ Box woodlands are dominated by Box eucalypt and red gum species such as Grey Box *Eucalyptus moluccana*, White Box *E. albens*, Yellow Box *E. melliodora*, Apple Box *E. bridgesiana*, Forest Red Gum *E. tereticornis* and Blakely's Red Gum *E. blakelyi*.
- ▶ Ground covers are often grassy and open but shrubs can be present.
- ▶ These are commonly known as the Grassy Box Woodlands.

TYPES OF GRASSY WOODLANDS



Wollondilly gorge grassy woodland



Snow Gum subalpine woodland



Western slopes White Box Woodland
Part of Endangered Ecological Community

- ▶ Tableland woodlands
- ▶ Subalpine woodlands
- ▶ Western Slopes woodlands
- ▶ Coastal valley woodlands
- ▶ Inland Floodplain woodlands



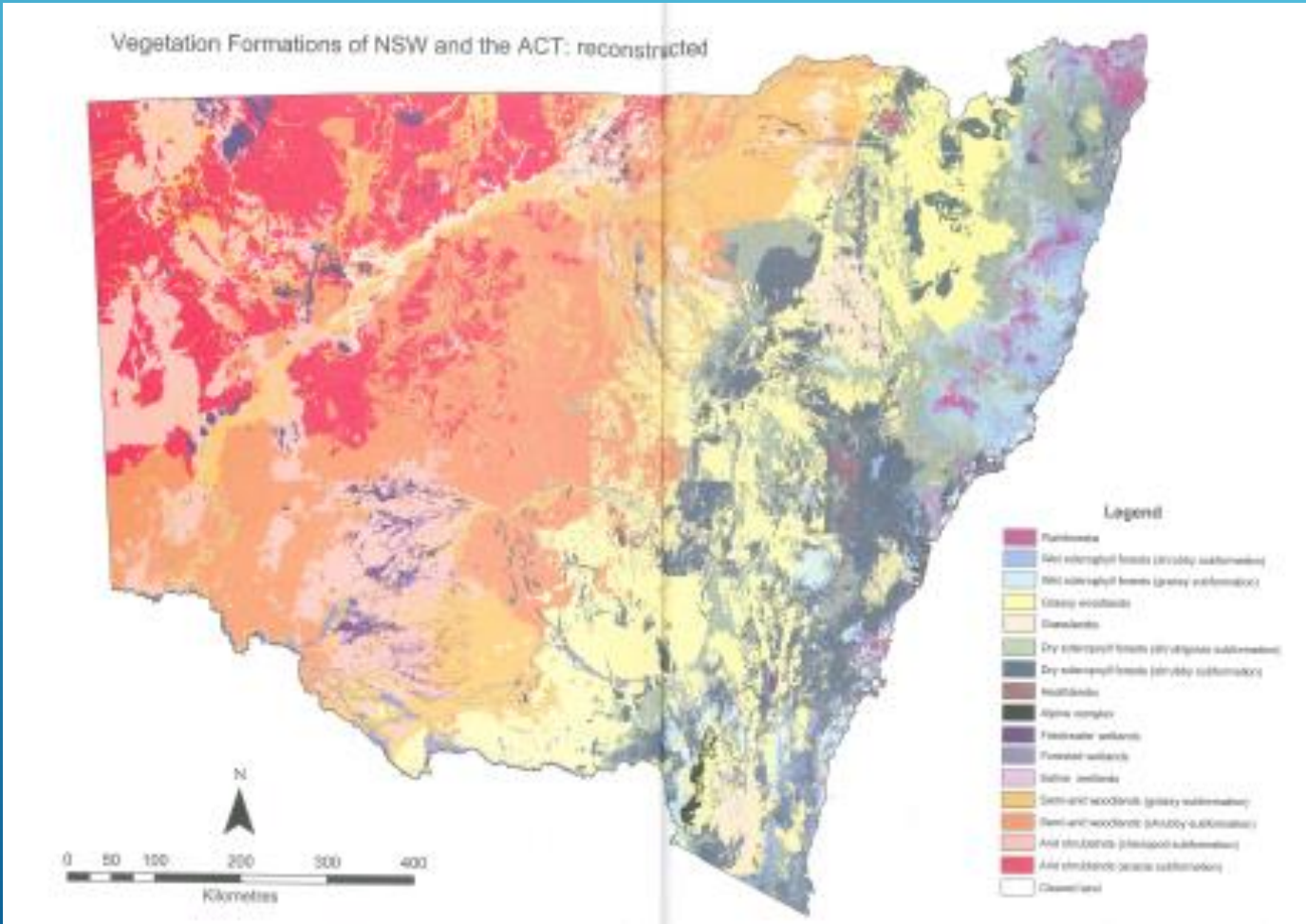
Forest Redgum coastal valley woodland



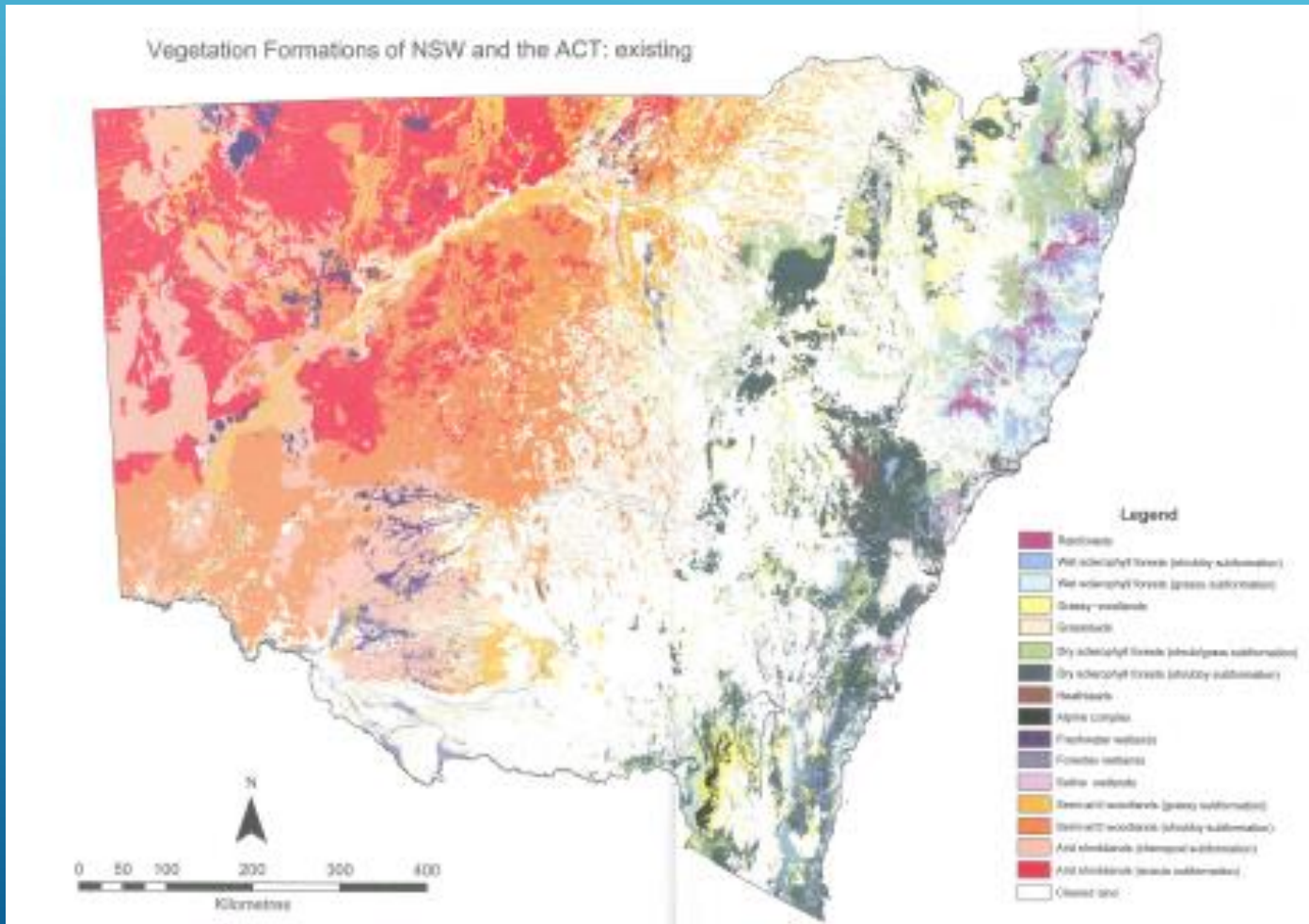
Black Box inland floodplain woodland

WHERE ARE GRASSY WOODLANDS - PAST ?

- ▶ Grassy Woodlands once extended in a broad band from southern Queensland to Central Victoria through the tablelands, western slopes and plains of NSW.
- ▶ Grassy Woodlands occur on fine textured soils of moderate to high fertility and moderate rainfall (500-1000 mm) in flat to undulating terrain.
- ▶ Grassy Woodlands are distributed in the eastern part of NSW in coastal rain shadow valleys, tablelands, western slopes and floodplains.

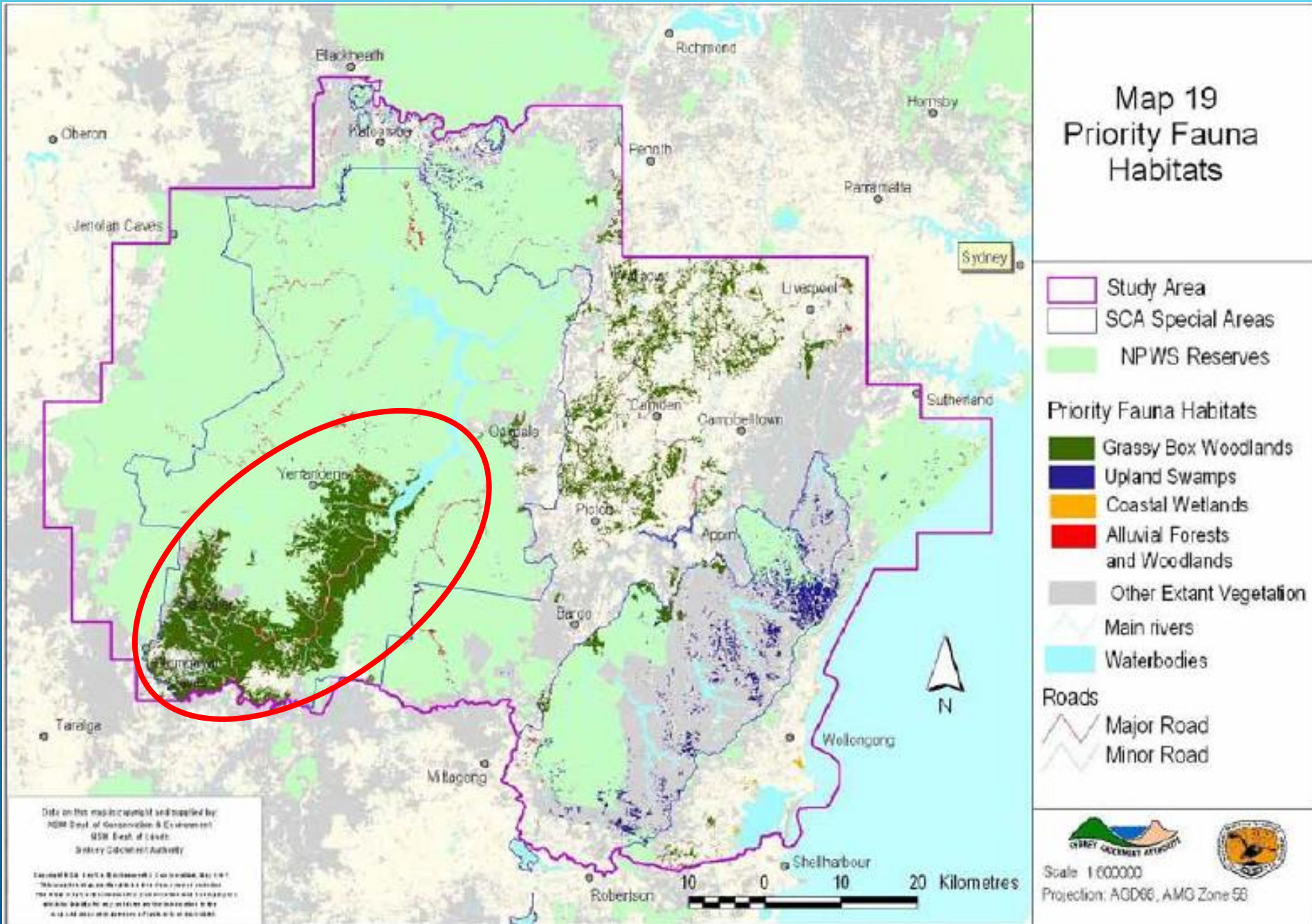


WHERE ARE GRASSY WOODLANDS - NOW ?

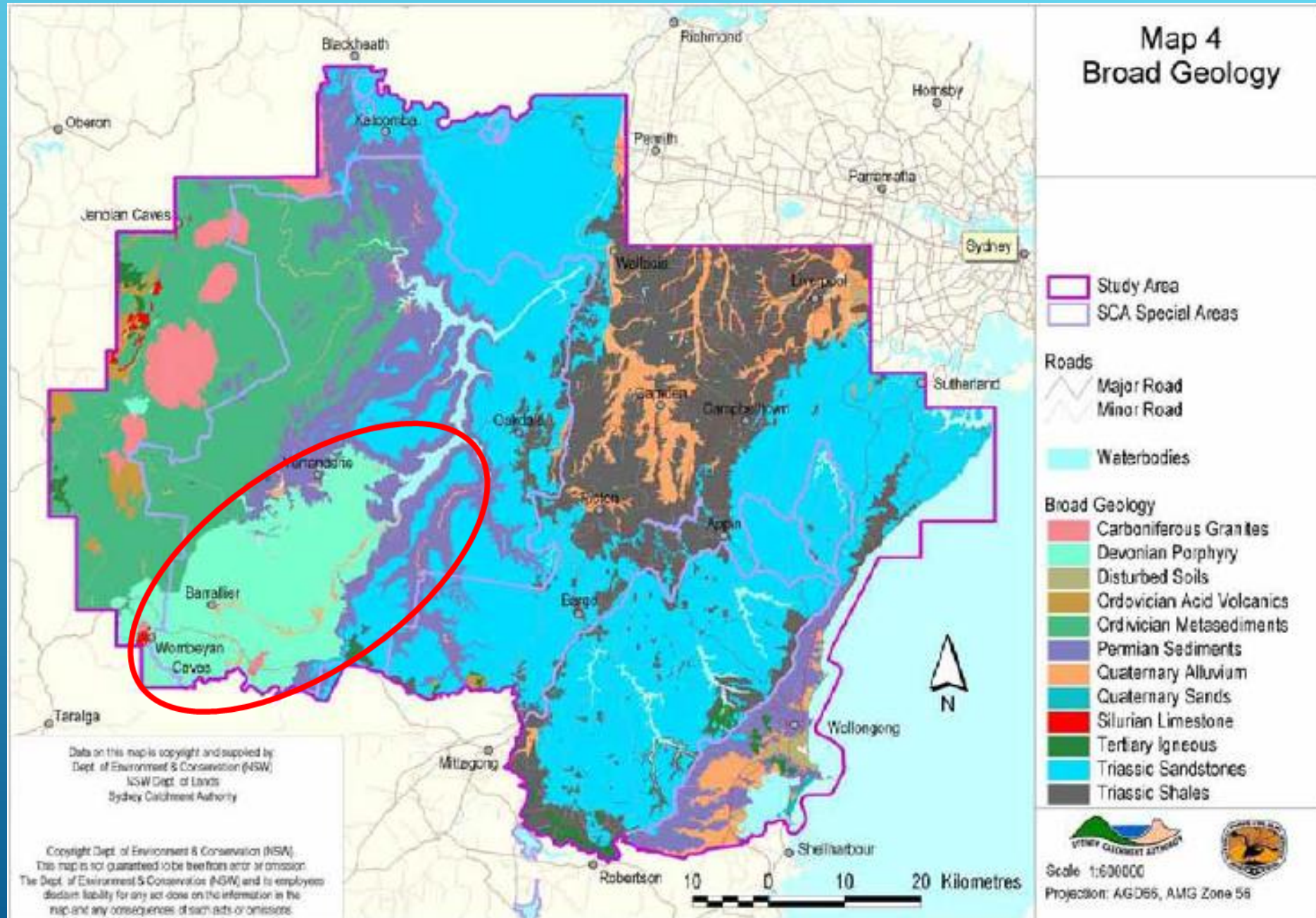


- ▶ Grassy Woodlands in temperate south eastern Australia have been heavily cleared since European settlement and are one of our most threatened ecosystems.
- ▶ As much as 80% of temperate woodlands have been cleared, in particular the Grassy Woodlands, which were sought for grazing lands and crops, becoming the highly productive wheat-sheep belt .
- ▶ Grassy Woodlands are now highly fragmented and occur as remnant vegetation patches or linear strips along rivers, creeks and roads.
- ▶ In some regions less than 5% canopy cover remains.

OUTSTANDING BIODIVERSITY – GRASSY WOODLANDS



BURRAGORANG GRASSY WOODLANDS – GEOLOGY



GRASSY WOODLANDS BURRAGORANG – WHY ARE THEY OF SPECIAL CONSERVATION SIGNIFICANCE



Burragorang with Wanganderry Tableland and Bonnum Pic

- ▶ Burragorang grassy woodlands are one of the most intact examples of a temperate grassy box woodland ecosystem surviving in south-eastern Australia.
- ▶ The majority of the grassy woodlands of the western slopes and have been very heavily cleared for agriculture and as little as 5% canopy cover remains in some areas.
- ▶ Much of the original woodland flora and fauna of the Western Slopes has been lost or is now highly threatened, surviving in small remnants, road reserves, travelling stock routes and a small number of National Parks.
- ▶ The Dingo, our largest surviving mammalian predator, has been largely exterminated from the Western Slopes grassy woodlands.

GRASSY WOODLANDS – ENDANGERED ECOSYSTEMS



Regent Honeyeater
Critically Endangered



Eastern Quoll
Parks Tasmania



Tasmanian Bettong
Extinct on mainland
Photo: D. Watts



Brush-tailed Phascogale
Vulnerable
Photo: Ray Williams



Striped Legless Lizard
Vulnerable
Photo: Ross Bennett



White-footed Rabbit Rat
Extinct
Gould

- ▶ 30 woodland vegetation communities have been listed under the NSW Biodiversity Conservation Act (2016). One of the most widespread is the White Box-Yellow Box-Blakley's Red Gum Endangered Ecological Community (EEC).
- ▶ Many woodland fauna species are now rare, threatened and declining and some such as the Tasmanian Bettong, White-footed Rabbit Rat and Eastern Quoll are extinct in NSW.
- ▶ 24 species of woodland birds are threatened and listed on the NSW Biodiversity Conservation Act (2016) including the Endangered Swift Parrot and the Critically Endangered Regent Honeyeater.
- ▶ The Koala, Squirrel Glider, Brush-tailed Phascogale and several species of micro bat are threatened and listed on the Biodiversity Conservation Act (2016).
- ▶ Three woodland skinks are listed on the Biodiversity Conservation Act (2016).

GRASSY WOODLANDS – THREATS

CLEARING, FRAGMENTATION & ALTERATION OF HABITAT

- ▶ Clearing and fragmentation of woodlands for agriculture, mining, infrastructure, hobby farming & firewood collection, especially in richer valley floors, has been identified as a Key Threatening Process (KTP) under the Biodiversity Conservation Act (2016,).
- ▶ Clearing of isolated paddock trees, especially old growth trees, including dead trees, which are needed for feeding, roosting and nesting by native birds and mammals.
- ▶ Increased tree dieback and decline in heavily cleared landscapes has been amplified by psyllid (lerp) infestations and Noisy Miner and Bell Miner colonisation. These have been identified as a KTP's under the Biodiversity Conservation Act (2016).
- ▶ Invasive weed species e.g. blackberry, African Olive (KTP), Tree of Heaven, exotic grasses (KTP).
- ▶ Reduced ground permeability through soil compaction from heavy grazing of domestic stock and feral gazers leading to the loss of native vegetation cover.
- ▶ Changes to ecosystems and species due to climate change (KTP). Increasing drought & fire frequency.



Capertee valley looking west to Mugil Murum-ban SCA



GRASSY WOODLANDS – THREATS

OVER-ABUNDANT NATIVE AND FERAL ANIMALS

- ▶ Increased abundance of the Noisy Miner due to habitat clearing and fragmentation leading to competition and exclusion of other nectar feeding and insect feeding native birds which can lead to tree dieback. Identified as a KTP under the Biodiversity Conservation Act (2016).
- ▶ Increased predation by native bird predators e.g. Kookaburra, butcher birds, currawongs, due to the small patch size of remaining woodland remnants.
- ▶ Loss of ground cover due to overgrazing by feral grazers e.g. rabbits, goats, pigs, identified as KTP.
- ▶ Increased predation from the high abundance of feral predators e.g. fox, cat, have been identified as KTP.
- ▶ Loss of hollows for fauna due to their occupation by feral honey bees, identified as KTP.



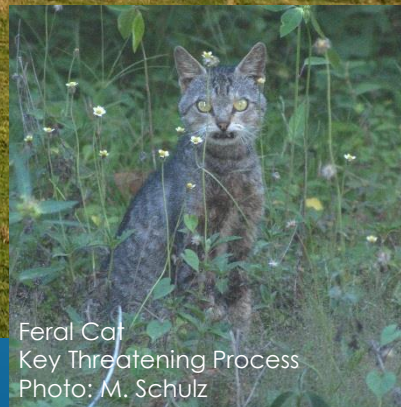
Noisy Miner
Key Threatening Process



Feral Rabbit
Key Threatening Process



Feral Fox
Key Threatening Process



Feral Cat
Key Threatening Process
Photo: M. Schulz

GRASSY WOODLANDS BURRAGORANG

— SPECIAL CONSERVATION FEATURES



- ▶ The grassy woodlands of Burragorang retain a moderate to good canopy cover of 17-28%.
- ▶ The Devonian Red Gum-Ironbark Woodland of the lower Wollondilly Valley is considered part of the White Box Yellow Box Blakely's Red Gum EEC.
- ▶ The grassy woodland understoreys support a predominantly native grass and forb cover even in cleared areas and natural regeneration of trees is occurring.
- ▶ The grassy woodlands support a high diversity of woodland fauna including a high number of threatened woodland species; 20 woodland birds including the Regent Honeyeater, 5 microbats, the Squirrel Glider, Koala, Spotted-tailed Quoll and Brush-tailed Rock Wallaby.
- ▶ Populations of grazing kangaroos, wallabies, wombat and the emu, are kept in a natural equilibrium by the presence of native predators the Dingo, Wedge-tailed Eagle and Spotted-tailed Quoll.
- ▶ The Platypus, native Water Rat and threatened fishing bat *Myotis macropus* are present in streams and riparian habitats.

BURRAGORANG WOODLAND BIRDS

NECTAR FEEDERS - HONEYEATERS & PARROTS



Swift Parrot
Endangered
Photo: J. Irvine



Black-chinned Honeyeater
Vulnerable



Regent Honeyeater
Critically Endangered



Little Lorikeet
Vulnerable



Painted Honeyeater
Vulnerable



Psyllids with lerp
coverings



Yellow Box Woodland
Part of Endangered Ecological
Community



Yellow Box



Needle-leaf Mistletoe

- ▶ The Critically Endangered Regent Honeyeater is regularly recorded in the Burragorang and recently has been found breeding in the woodlands (R. *Crates pers. comm.*). This is one of only three breeding sites recorded in recent years throughout the species range in south-eastern Australia, the others being the Capertee Valley and lower Hunter Valley.
- ▶ The Regent Honeyeater is one of the most endangered birds in Australia with fewer than 400 individuals surviving in the wild. It is listed as Critically Endangered under both NSW and Federal legislation.
- ▶ The endangered Swift Parrot (Pop. <2000) is also a visitor to the Burragorang. It is a winter migrant to the mainland from Tasmania where it breeds over summer. Listed as Endangered under the NSW BC Act and Critically Endangered under the Federal EPBC Act.
- ▶ Recent surveys have also discovered the threatened Painted Honeyeater in riverside forest in Burragorang (R. *Crates pers. comm.*). Thought previously to be extinct in the valley the Painted Honeyeater favours mistletoe fruits and flowers such as the Needle-leaf Mistletoe found on riparian River Oak *Casuarina cunninghamiana*.
- ▶ The threatened Little Lorikeet and Black-chinned Honeyeater are also present as are another 16 other honeyeater species.

BURRAGORANG WOODLAND BIRDS - INSECT EATERS



Grey Box old growth woodland



- ▶ Burragorang is home to wide diversity of insect eating woodland birds. Over 60 species have been recorded and include cuckoos, treecreepers, shrike-tits, robins, thornbills, scrub wrens, babblers, choughs, pipits, warblers, swallows, woodswallows, swifts, bee eaters, pardalotes, sittellas and whistlers.
- ▶ Seven threatened species are regularly recorded. The Brown Treecreeper (Eastern form), Hooded, Flame and Scarlet Robins, Speckled Warbler, Varied Sittella and Dusky Woodswallow.
- ▶ Insect feeding birds are benefited by the presence of old growth trees providing extensive areas of trunk, branches and foliage for foraging. Also a diverse ground cover of grass, shrub, leaf litter, bare areas, areas of fallen branches and debris benefit insect eaters.
- ▶ Treecreepers require tree hollows for nesting.
- ▶ Notably the grassy woodlands of Burragorang are not dominated by Noisy or Bell Miners which can exclude other birds.

BURRAGORANG WOODLAND BIRDS - GROUND SEED EATERS

- ▶ Burragorang provides habitat for a diversity of woodland ground seed eating birds which include parrots, finches, pigeons, doves, quail and the emu.
- ▶ 15 species have been recorded including the threatened Diamond Firetail and the Turquoise Parrot.
- ▶ The presence of the Emu is interesting and now unusual. Are they introduced or part of the original coastal emu population? This is yet to be determined.
- ▶ Require a diverse ground layer of grasses, shrubs, leaf litter, bare areas and a variety of ground layer plants producing a variety of seeds.
- ▶ Also require nearby native vegetation of woodland or forest patches for retreat, roosting and nesting.



Double-barred Finch
Photo: C. Ramsey



Diamond Firetail
Vulnerable
Photo: Bob Ayton



Common Bronzewing
Photo: Ian Montgomery



Turquoise Parrot
Vulnerable

BURRAGORANG WOODLAND BIRDS

CANOPY SEED EATERS



- ▶ Burragorang provides habitat for six species of canopy seed eating parrots.
- ▶ Includes the threatened Gang-gang Cockatoo and Glossy Black-Cockatoo which are listed under the NSW BC Act.
- ▶ The Glossy Black-Cockatoo specialises in eating the seeds from the fruits of *Casuarina* and *Allocasuarinas*. It requires sufficient mature trees to provide a year round food source.
- ▶ *Casuarina* and *Allocasuarina* are killed by fire and have to start from seed so too frequent fire can reduce mature trees and the food supply for Glossy Black-Cockatoos.
- ▶ All parrots require old growth eucalypts to provide tree hollows for nesting.



BURRAGORANG WOODLAND BIRDS – AVIAN PREDATORS



Wedge-tailed Eagle
Photo: T. Hatton



Brown Goshawk
Photo: aardvaark



Barking Owl
Vulnerable
Photo: S. Cotterall



Owlet nightjar
Photo: D.S. Hovorka

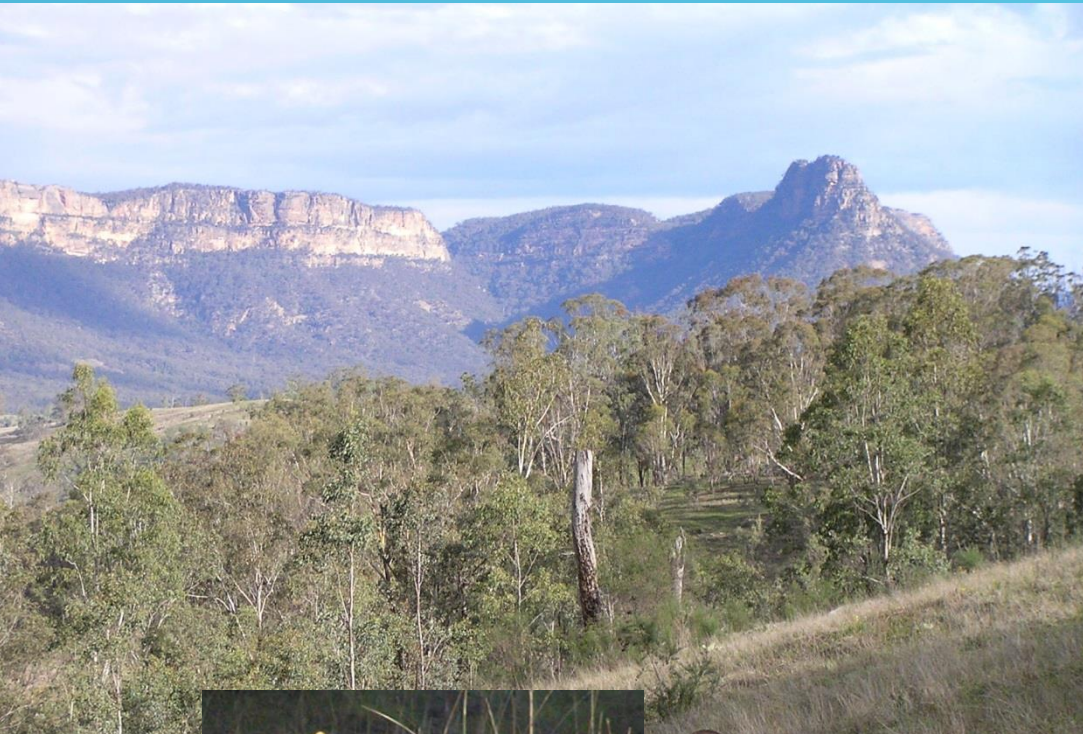
- ▶ Burragorang supports a diversity of avian predators which include eagles, falcons, goshawks, kites, owls, nightjars, frogmouths, kingfishers, ravens, currawongs, magpies and butcherbirds.
- ▶ 27 species of avian predator are recorded including the threatened Little Eagle, White-bellied Sea Eagle, Barking Owl, Powerful Owl, Masked Owl and Sooty Owl.
- ▶ The Wedge-tail Eagle is an apex predator which can prey on mature Eastern Grey Kangaroo.
- ▶ Birds of prey require an abundance of prey provided by a diversity of habitats.
- ▶ Many species require old growth trees for perching and nesting, especially the hollow dependent owls and nightjars.

BURRAGORANG WOODLAND – TERRESTRIAL PREDATORS

- ▶ Burragorang supports three medium to large terrestrial native predators.
- ▶ The Spotted-tailed Quoll (2-4 kg) is the largest surviving marsupial carnivore on mainland Australia. The quoll is both a terrestrial and arboreal predator. Prey includes small-medium mammals, birds, reptiles, insects and crustaceans.
- ▶ The Lace Monitor (1.35-2.25 m, 15-20 kg) is one of the largest reptiles in Australia and is both a terrestrial and arboreal predator. Prey includes insects, mammals, reptiles (including snakes), eggs, nestlings, microbats and carrion.
- ▶ The Dingo (12-24 kg) is the largest mammalian carnivore on the mainland. Prey include insects, small, medium and large mammals, including wombats and large kangaroos.
- ▶ The feral, fox and cat are also present.



Lace Monitor



Spotted-tailed Quoll
Vulnerable



Dingo

Wanganderry Tableland and Bonnum Pic

BURRAGORANG WOODLAND – NATIVE GRAZERS



Brush-tailed Rock Wallaby
Endangered



Eastern Grey Kangaroo



Common Wombat



Common Wallaroo



Red-necked Wallaby

- ▶ Burragorang supports a diversity of native grazing marsupials.
- ▶ Five macropods are recorded including the Eastern Grey Kangaroo, Common Wallaroo, Swamp Wallaby, Red-necked Wallaby and endangered Brush-tailed Rock Wallaby.
- ▶ The Common Wombat is abundant.
- ▶ The population of endangered Brush-tailed Rock Wallaby is one of the few surviving in south-eastern Australia.
- ▶ The Brush-tailed Rock Wallaby belongs to the group of medium sized native mammals that have suffered dramatic declines and extinctions across the continent, due largely to the introduction of the fox.

BURRAGORANG WOODLAND - SMALL AND MEDIUM SIZED TERRESTRIAL MAMMALS



Grey Box old growth woodland



Common Dunnart
Sminthopsis murina



Yellow-footed Antechinus
Antechinus flavipes

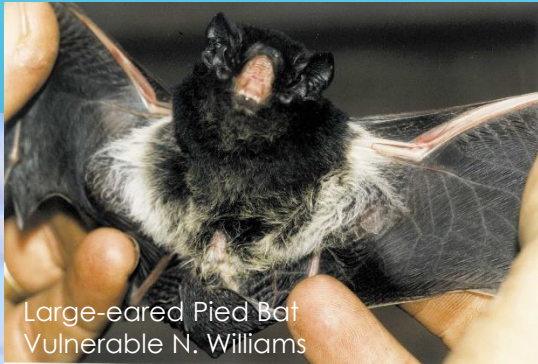
- ▶ The Burragorang woodlands still support two small marsupial mice, the Yellow-footed Antechinus and Common Dunnart.
- ▶ Small and medium sized terrestrial mammals have disappeared from temperate grassy woodlands across Australia. Species such as bandicoots, bettongs, Eastern Quoll, marsupial mice and native rodents.
- ▶ Many woodland remnants in NSW have no small and medium sized terrestrial native mammals surviving.
- ▶ A diversity of ground cover with leaf litter and fallen branches and tree trunks and old growth trees helps to provide a rich habitat for small native mammals.

BURRAGORANG WOODLAND - ARBOREAL MAMMALS



- ▶ Arboreal or tree dwelling mammals include possums and gliders, the Koala and some small carnivorous marsupials such as the Brush-tailed Phascogale
- ▶ Six arboreal mammals have been recorded in the Burragorang. They include the threatened Squirrel Glider, Eastern Pygmy Possum and Koala. The Sugar Glider, Feathertail Glider and Common Ringtail are also present.
- ▶ Most arboreal mammals nest or den in tree hollows and so require old growth eucalypts with hollows.
- ▶ The threatened Brush-tailed Phascogale has not been recorded but may be present. There has not been any targeted survey for this species in the reserves.

BURRAGORANG WOODLAND - MICROBATS



Large-eared Pied Bat
Vulnerable N. Williams



Eastern Horseshoe Bat



Eastern Freetail-bat
Vulnerable N. Williams



Greater Broad-nosed Bat
Vulnerable N. Williams

White Box old growth woodland

- ▶ The Burragorang woodlands support a great diversity of microbats with 19 species recorded.
- ▶ This includes seven threatened species; the Eastern Freetail-bat, Large-eared Pied Bat, Eastern False Pipistrelle, Little Bentwing-Bat, Eastern Bentwing-Bat, Greater Broad-nosed Bat and Large-footed Myotis.
- ▶ Microbats feed on insects at night which they capture on the wing using ultrasound.
- ▶ The majority of microbats use tree hollows as roosting sites during the day so require old growth trees with lots of hollows.
- ▶ Five species will use caves as roost sites.

BURRAGORANG WOODLAND – STREAMS AND RIVERS



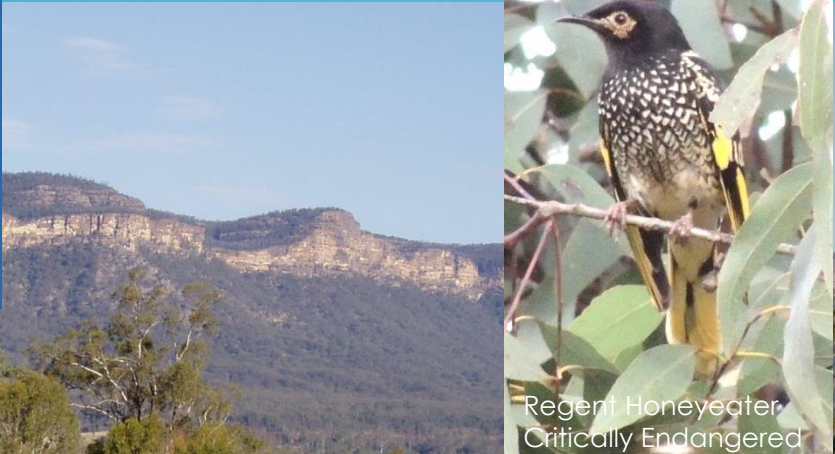
Large-footed Myotis
Vulnerable R. Williams

Platypus

Water Rat
R. Williams

- ▶ The major streams flowing into the Burragorang are the Wollondilly, Nattai and Cox's Rivers. Their lower reaches along with the Warragamba River, are now under the impoundment of Lake Burragorang.
- ▶ In the surviving upper reaches of these rivers the aquatic Platypus and Water Rat can be found. The deeper waters of Lake Burragorang do not provide habitat for these species.
- ▶ The threatened Large-footed Myotis microbat is also found in these habitats. It is an aquatic feeding specialist that uses its large feet and long claws to rake the water surface of quiet pools for aquatic insects and small fish.

BURRAGORANG WOODLAND - A NATURAL EQUILIBRIUM



- ▶ The Burragorang grassy woodlands may be one of the most intact examples of a temperate grassy woodland ecosystem remaining in all south-eastern Australia.
- ▶ It may be one of the only grassy woodlands where apex predators, the Spotted-tailed Quoll, Dingo, Lace Monitor and Wedge-tailed Eagle, continue to exist in a natural equilibrium with native grazers and browsers, the Eastern Grey Kangaroo, Eastern Wallaroo, Swamp Wallaby, Red-necked Wallaby, threatened Brush-tailed Rock Wallaby, Common Wombat and Emu.
- ▶ A great diversity of declining and threatened woodland birds live and breed there, including one of the most threatened the Regent Honeyeater.
- ▶ The woodland understorey is largely native species and cleared areas are naturally regenerating.
- ▶ The grassy woodlands of the western slopes have been highly cleared and severely degraded.
- ▶ The Burragorang woodlands should be recognised for their unique biodiversity values and protected as an Outstanding Biodiversity Area under the Biodiversity Conservation Act (2016).



BURRAGORANG WOODLANDS – THREATS AND FUTURE ACTION



- ▶ The proposed raising of the Warragamba Dam wall by 14 m for flood mitigation will flood a further 4,700 hectares of the Warragamba catchment and 65 km of wild rivers. This falls within the Blue Mountains and Nattai National Parks, which are part of the World Heritage Area, and parts of the Yerranderie and Burragorang State Conservation Areas.
- ▶ Much of the area to be flooded supports grassy woodland and dry open forest ecosystems identified as priority conservation habitats by the NSW National Parks and Wildlife Service.
- ▶ Flooded grassy woodlands will be killed by flooding. Fauna and flora will be lost.
- ▶ Other flood mitigation strategies could be used. Dam levels could be kept lower and the desalination plant could be kept running.
- ▶ Are we prepared to lose more of this unique ecosystem?

SAVING BURRAGORANG WOODLANDS – HOW CAN YOU HELP



- ▶ Concern for the loss of threatened woodland ecosystems, threatened species, wild rivers, declared wilderness, Aboriginal Heritage and World Heritage Areas.
- ▶ Give a Dam website www.giveadam.org.au
 - ▶ Sign petitions
 - ▶ Participate in marches and events
 - ▶ Write or email www.nsw.gov.au/contact-us
 - ▶ Premier Hon Gladys Berejiklian
 - ▶ Environment and Energy Minister – Hon Matthew Kean
 - ▶ Minister for Planning and Public Spaces – Hon Rob Stokes
 - ▶ Federal Minister for the Environment – Hon Susan Ley