The Gardens of Stone

PARK PROPOSAL



– Stage Two –

The Western Escarpment, Airly-Genowlan Mesa,
Newnes Plateau and related Crown lands

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A proposal to extend the Gardens of Stone and
Blue Mountains National Parks and create a
Gardens of Stone State Conservation Area
and a Western Escarpment State Conservation Area

BY KEITH MUIR

The Colong Foundation for Wilderness
Blue Mountains Conservation Society
The Colo Committee

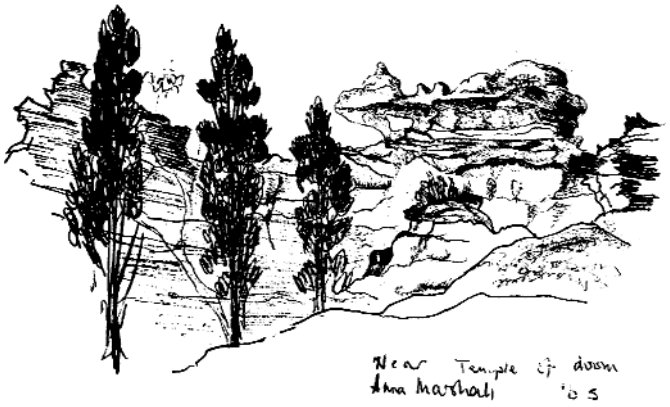
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THIS park proposal would not have been possible without the enthusiastic support of the scientists and amateur naturalists who provided much of the data. I have also incorporated large parts of the 1985 Gardens of Stone report by David Blackwell and Rodney Falconer of the Colo Committee into this proposal. My thanks to them.

Karen McLaughlin prepared the maps for this report and put up with the countless revisions that went with that task.

David Blackwell, Keith Muir, Andrew Valja and Jaime Plaza van Roon provided photographs. Anna Marshall drew the illustration on page ii. The illustration on page 8 was provided by Scott Mooney, and those on pages 13 and 15 were provided by Marshall Wilkinson. Reproduced with permission.



Foreword

THE aim of this proposal is to preserve the whole of the Gardens of Stone area by adding the areas omitted from the Stage One declaration. The Blue Mountains parks have ensured the preservation of most of the outstanding scenic and recreational assets of the Mountains but have not covered the unique qualities of the Gardens of Stone. These include the "pagoda" formations created by the ironstone bands within the sandstone, and a high density of rare plants and endangered upland swamps. Despite the infertility of its soils the area is threatened by development proposals because of its proximity to Sydney, but it contains no commercial natural resources that are not found in abundance elsewhere. Its real value is its scenic and biodiversity qualities, which are enhanced by its ready accessibility.

A. G. Colley O.A.M.

Hon Secretary

The Colong Foundation for Wilderness



Wolgan Falls

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PHOTO: J. PLAZA

In the Grotto, Genowlan Mesa

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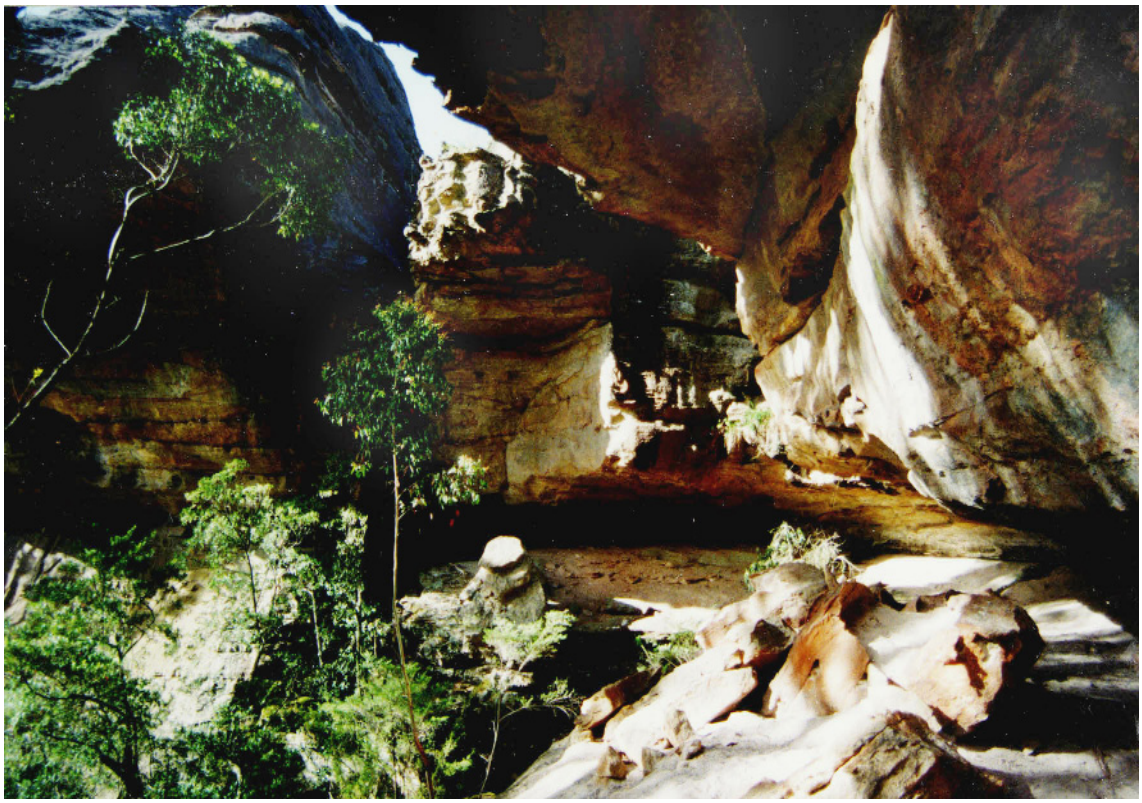
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PHOTO: J. PLAZA

Waratahs near Carne Creek



Overhang, Airly Mesa

INTRODUCTION

THE Gardens of Stone, 10 km north of Lithgow, embraces the sandstone landscapes of the Newnes Plateau, the broken stone country to the west of the Plateau and the Airly-Genowlan mesa to the north in the Capertee Valley. The 40,000 hectare proposal contains the last unprotected part of the 1934 Greater Blue Mountains National Park proposal compiled by Myles Dunphy for the National Parks and Primitive Areas Council. The proposal also includes the Blue Mountains Western Escarpment lands from Blackheath to Lithgow.

Twenty years ago, Rodney Falconer and David Blackwell of the Colo Committee discovered a number of rock falls from cliffs, together with cracks and fissures. The damage was found to be associated with the Angus Place Colliery on the western edge of the Newnes Plateau, above Lambs Creek near Wolgan Gap. Spurred on by the threat of further damage, they had, by September 1985, completed a submission for a 'Gardens of Stone' 38,000 hectare addition to Wollemi National Park on behalf of the Colo Committee, the Colong Committee and the Federation of Bushwalking Clubs.

After 10 years of campaigning and a further park proposal by the Colong Foundation, Stage One of the Gardens of Stone National Park was created on the 29th of November 1994, covering 11,780 hectares. In December 1995 a further 3,600 hectares of the original proposal were added to the Wollemi National Park to protect spectacular Rocky Creek and its cathedral-like slot canyons. There have been no further additions because of the objections to national park dedication by coal mining interests.

The unprotected parts of the Gardens of Stone now face yet another threat: surface mining for construction sand. Sand mining is incompatible with nature conservation as the entire landscape and its ecosystems once removed, cannot be replaced.

The Colong Foundation for Wilderness, the Blue Mountains Conservation Society and the Colo Committee now advance Stage Two of the Gardens of Stone proposal, including all of the remaining parts of Newnes Plateau and surrounding sandstone uplands, while accepting the realities of current coal mining. The *National Parks and Wildlife Amendment Act, 2001* provides for the reservation of State Conservation Areas that could allow coal mining as well as the protection of areas of high conservation value. Such a reservation model may assist with the protection of the rest of the Gardens of Stone.

Centennial Coal owns most of the mining interests within the park proposal and it usually undertakes its operations with extensive mine subsidence protection zones that seek to protect the natural environment. Most of the water pumped from the operating collieries is treated before discharge, and is being directed away from national park areas. Such an enlightened approach would be consistent with the proposed State Conservation Area.

Reservation of Stage Two, primarily as a State Conservation Area, would protect the most spectacular pagoda landscapes in Australia. Pagoda is a local name for a large tapering and often stepped or laminated sandstone formation. Surrounding these intricately shaped surfaces are found large caves, mazes, ancient montane heathlands, endangered upland swamps, snowgums, grassy woodlands and moist gullies that contain tree ferns, stands of old growth forest and rainforest, and, in some places, slot canyons. Reservation of Stage Two

would also secure the outstanding ochre coloured cliffs of the Blue Mountains' Western Escarpment and the rare plant communities that lie above them.

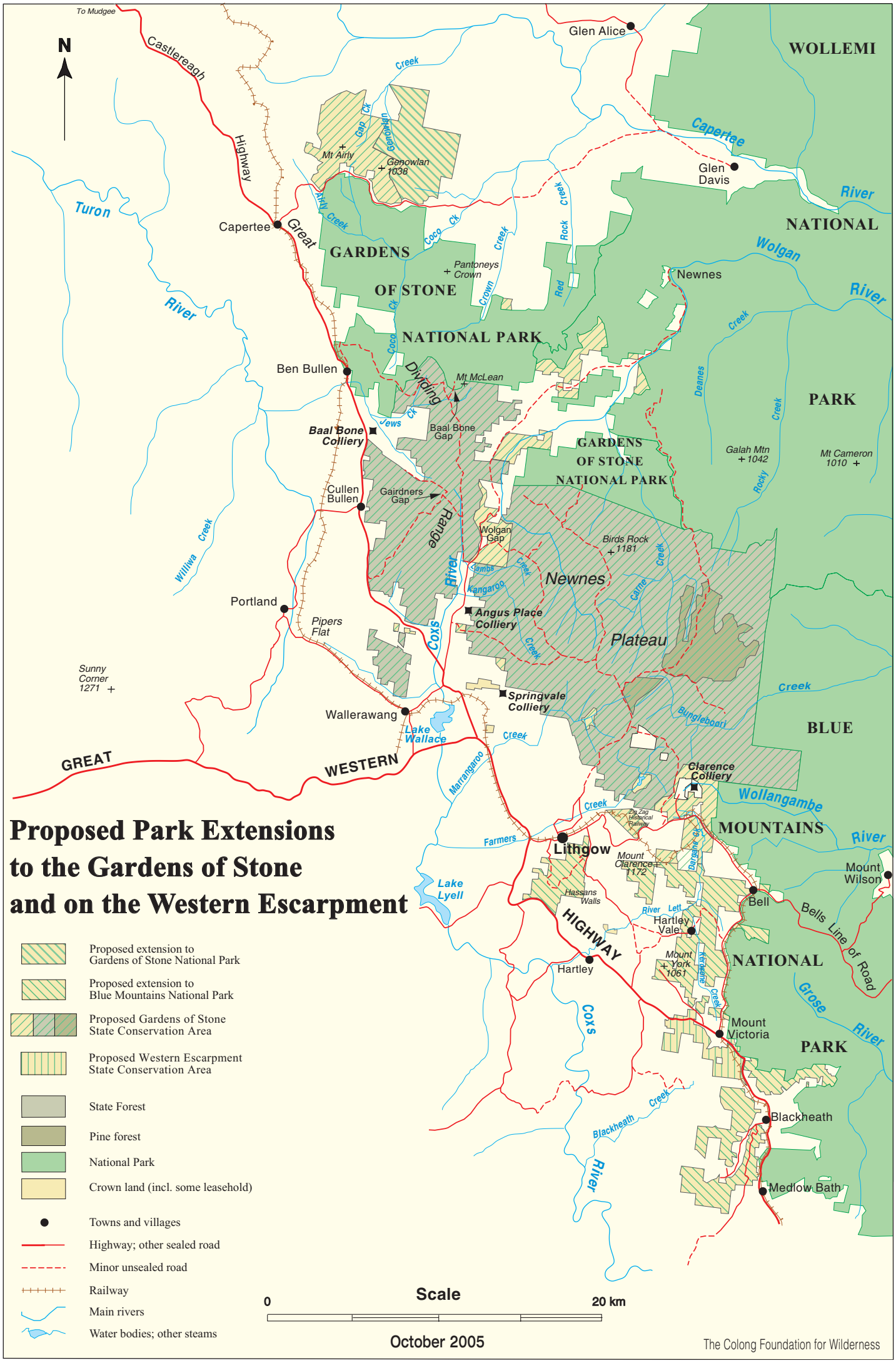
Reservation of the remaining unprotected parts of the Gardens of Stone as a State Conservation Area and a Western Escarpment State Conservation Area is urgently required to rein in ongoing and accelerating environmental degradation. There has been significant environmental damage done to Newnes Plateau and the other areas in the proposal by coal mining, sand extraction, pine plantations, native forest logging, abuse by off road vehicles and unregulated adventure recreation.

The existing management of public lands in State Forests and Crown Reserves has proven to be inadequate. The outstanding diversity of the area warrants further protection and nature-focused management.

CONSERVATION OUTCOMES

The reservation of the Gardens of Stone – Stage Two would achieve the following important conservation outcomes:

- Protection of the most outstanding pagoda landscapes in Australia – these include some of the best scenery in Australia, such as dramatically coloured escarpments, narrow canyons, cave overhangs, rock arches, lonely sandstone peninsulas and wind-formed but now well vegetated sand dunes that are remnants of an ancient paleo-landscape;
- Reservation of ancient windswept montane heathlands, nationally endangered upland swamps, a unique subspecies of snowgum and other grassy high plateau woodlands, including poorly conserved grassy white box woodlands, and moist forest gullies between these woodlands;
- Establishment of an unbroken continuum of forest and woodland types from the moister coastal communities to the western slopes box country, with Newnes Plateau containing woodlands and swamps that represent the coldest and highest development of native vegetation on Sydney Basin sedimentary rocks;
- Protection of the area with the highest density of rare plants anywhere in the Blue Mountains;
- Facilitation of the interpretation and appropriate recreational use of the nationally significant first passes to inland Australia – the Coxs, Lawsons, and Lockyers roads near Mount York;
- Presentation of some the State's best preserved and Heritage Listed oil shale ruins in Australia in a spectacular setting;
- Protection of an important scientific reference area near Gooches Crater that has yielded important fire history data that may inform future fire management practices;
- Better management of the most popular recreation-forest destination in the Mountains so that the natural and cultural values of the much-loved Gardens of Stone are not degraded.


To Mudgee
N
Castlereagh Highway
Glen Alice
WOLLEMI
Creek
Capertee
Mt Airly
Genowlan 1038
Glen Davis
River
Turon
Capertee
Great
GARDENS OF STONE NATIONAL PARK
Pantoneys Crown
Newnes
Wolgan River
River
Ben Bullen
Mt McLean
Baal Bone Colliery
Baal Bone Gap
Galah Mtn 1042
Mt Cameron 1010
Cullen Bullen
Gairdners Gap
Range
Wolgan Gap
Birds Rock 1181
Williwa Creek
Portland
Pipers Flat
Coxs River
Angus Place Colliery
Newnes Plateau
Sunny Corner 1271
Springvale Colliery
Wallerawang
Lake Wallace
GREAT WESTERN
Clarence Colliery
BLUE MOUNTAINS
Wollangambe River
Lithgow
Mount Clarence 1172
Mount Wilson
Lake Lyell
Hassans Walls
Bell
Bells Line of Road
HIGHWAY
Hartley Vale
Hartley
Mount York 1061
NATIONAL PARK
Grose River
Mount Victoria
Blackheath
Medlow Bath
Proposed Park Extensions to the Gardens of Stone and on the Western Escarpment
Proposed extension to Gardens of Stone National Park
Proposed extension to Blue Mountains National Park
Proposed Gardens of Stone State Conservation Area
Proposed Western Escarpment State Conservation Area
State Forest
Pine forest
National Park
Crown land (incl. some leasehold)
Towns and villages
Highway; other sealed road
Minor unsealed road
Railway
Main rivers
Water bodies; other steams
Scale
0
20 km
October 2005
The Colong Foundation for Wilderness



Epacris reclinata



PHOTO: J. PLAZA

Looking towards Genowlan Point



Pagoda Daisies (Leucochrysum graminifolium)

The Divisions of the Proposal

Genowlan Mountain (1,680 hectares)

The Genowlan Mountain lies north of the Glen Davis Road east of the Capertee village. It far surpasses that famous rocky Katoomba promontory, known as the Three Sisters! There are literally hundreds of pagodas standing on this mountain – a home to 300 Sisters.

Notable rock formations of this area include the 'Citadel' and the 'Valley of the Kings', as well as the 'Grotto' with its 30 metre tall Brown Barrrel eucalypt trees and four metre tall tree ferns. A small Tertiary basalt outcrop on the plateau overlies an ancient riverbed, which adds to this mountain's geodiversity. Miners call the gravels that form this riverbed a 'deep lead', an alluvial deposit that has in this case yielded a small number of diamonds. The deep lead has another story to tell. It shows that this ancient land slowly evolved from a 70 million-year-old sandstone plateau with a rapidly flowing river with a gravel bed into a lonely mesa that stands 500 metres above the Capertee Valley today. This is a classic example of landscape inversion.

A Planning Inquiry in February 1993 recommended Genowlan Mountain be excluded from the proposed development consent and mining lease area for the Airly Colliery. In recognition of its outstanding natural, cultural and scenic values the Colong Foundation, the Blue Mountains Conservation Society and the Colo Committee again propose national park reservation for this exceptional area.

Airly Mountain (2,020 hectares)

Airly Mountain lies to the west of Mount Genowlan and is separated from it by Airly Gap. Ruins from oil shale mining operations are located on the slopes of Airly Gap and also on the western side of Airly Mountain. These oil shale ruins represent some of the best of their kind and are of state significance (Mills, R 1998). A conservation management plan to preserve these NSW Heritage registered ruins and control visitation should be developed in co-operation with Centennial Coal.

The northern end of Airly Mountain (1032m) contains dramatic pagoda rock formations deemed worthy of preservation by the planning inquiry into the proposed coal mine. Reservation in a State Conservation Area would promote best practice environmental protection and presentation for this area.

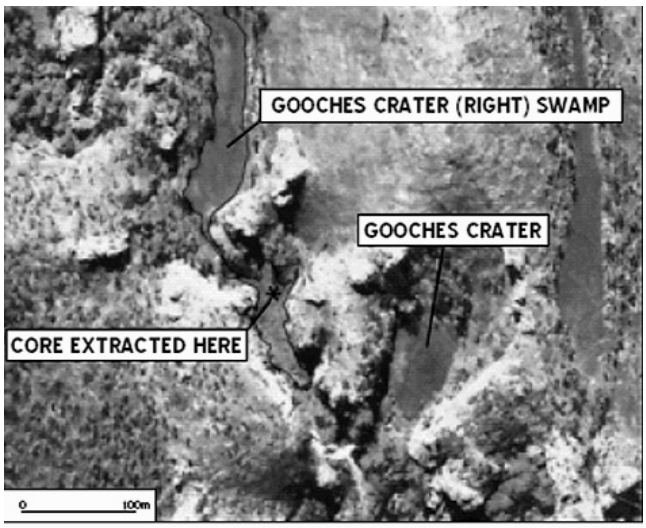
Wollangambee Wilderness (2,380 hectares)

Situated in the south eastern part of the Newnes State Forest and north east of the Clarence Colliery pit top, this unit of the proposal forms a broad indentation of state forest protruding eastwards into the Blue Mountains National Park. The area is part of the identified Wollemi Wilderness and contains several shrub swamps with rare plants. A unique spring-fed wet sclerophyll forest of tree ferns, maidenhair fern, bracken fern, Sassafras, Peppermints and Silvertop Ash can be found at the extreme eastern end of the state forest (Byrnes, R 2000). This division of the proposal also contains several spectacular pagoda formations.

Gooches Crater, a dramatic feature located on a northern tributary of the Wollangambe River on the boundary of the national park, is just within the State Forest area. The crater is

not of volcanic origin but was formed when the encircling, overhanging sandstone cliffs collapsed to block a local drainage line and form a small wetland amphitheatre. The crater area also features a pristine upland shrub swamp, a dramatic rock arch, a slot canyon, and large cave in a forested valley. The area is highly valued by bushwalking groups.

A deeper, more confined gully swamp adjoining Gooches Crater to the north has been the subject of research on fire history dating back to the Holocene (14,000 bp). The research swamp, a closed wet heath dominated by *Baeckea*, *Epacris*, *Gleichenia*, *Grevillea*, *Gymnoschoenus*, *Leptospermum*, is surrounded by Eucalypt woodland and open heath (Benson and Keith, 1990).



The location of Gooches Crater and sample site

The study of charcoal deposits in the swamp has found that fires at the site correlate more closely with climate change than Aboriginal burning (Mooney , S D & Black, M, 2004). Equally remarkable is a finding that the post-European period, as flagged by the appearance of pollen from exotic pine in the top 15 cm of the survey core, bears witness to charcoal accumulating at rates unprecedented in the previous ~14,200 years. These data suggest that the area has burnt more frequently since European occupation than previously.

Newnes Plateau (22,000 hectares)

This gently undulating plateau of 1100 metres rises to 1180 metres at Birds Rock and is the most northerly extension of the Blue Mountains Range. The botanical diversity and vast number of rare plants on the Plateau are related to its altitude, the intricate sandstone landscape and location at the western-most extremity of the Blue Mountains.

The abrupt changes in soil depth are another factor related to the area's botanical diversity. The forests of the Plateau are found on deeper, older soils, whereas the exposed spurs descending from the Plateau support heathlands on shallow, younger soils. The sharp decrease in soil depth from forest to heath is most remarkable on steep slopes. Older soils under forests suggest that forest cover, in addition to lithology and topography, may control landform evolution.

Sandy soils and deeply weathered friable sandstone have developed in the shallow drainage lines of Newnes Plateau to form swamp-filled valleys that are also an expression of near-surface groundwater, relatively high rainfall, low slope and impeded runoff. The orientation of these swamps is controlled by planar cracks that are called joints and minor faults in the sandstone rock. This system of structures determines the drainage pattern on the Plateau. It is in these deeply weathered sandstone areas that the quarry industry want to mine for construction sand.

Baal Bone and Long Swamp (7,800 hectares)

The 'broken stone country' of Ben Bullen and Wolgan State Forests follows the Great Dividing Range where it dramatically sweeps to the east towards the headwaters of the Coxs River at Gardiners Gap. The Gap is named after the notorious bushranger, horse and cattle thief, Francis Gardiner, who operated during the 1860s. The Gap, part of the original route to the Castlereagh Valley and Mudgee, was probably not used by Gardiner, but the myriad of small narrow valleys that spread out from the Dividing Range in this area were absolutely ideal for bushranging activities.

The Long Swamp, just south of Gardiners Gap, which together with the swamps on Lambs and Kangaroo Creeks form the headwaters of the Coxs River. These alluvium filled and often waterlogged swamps comprise closed-sedgelands of *Carex gaudichaudiana and C. fascicularis*, with herbs, grasses and occasionally Sphagnum moss. In some places with more sandy textured soils the swamps support a closed teatree heath, while the drier swamplands carry a grassland. Upslope from these swamps are often found graceful open forests of Ribbon Gum and Brown Barrel.

On the other side of the Great Dividing Range are the dramatic headwaters of Baal Bone Creek whose massed pagodas are reminiscent of Cambodia's forest temples as they may have appeared to their European 'discoverers' in the 19th century. Nearby is Cape Horne which offers dramatic views of the escarpments of the Wolgan Valley from equally dramatic pagoda rock formations.

The Western Escarpment (4,000 hectares)

'These walls or cliffs rise… perpendicularly above the road, and their summits, broken and fissured in various fantastic forms, exactly resemble a ruined castle crowning the brow of the sheer precipice, with here and there a stunted tree or graceful shrub growing from crevices in the dark rock.' Louisa Ann Meredith at Hassans Walls (Meridith, 1844 quoted in Keith and Benson, 1998).

The Western Escarpment is a spectacular and dominating feature of the western Blue Mountains, consisting of an irregular series of tall sandstone cliffs associated with steep pagoda-capped spurs that traverse the Darling Causeway northwards and then run west around the River Lett Valley to Lithgow. The Western Escarpment contains pagodas, heathlands and tall escarpment forests surrounded by grassy woodlands (Eades, M, 1989).

These escarpment areas possess a very high proportion of rare plants because of the many specialised habitats and microenvironments, such as those protected from fire, exposed to strong winds and controlled by springs that emerge above impermeable shale outcrops. The escarpment areas above the cliff line are highly vulnerable to degradation by development and inappropriate fire management. The invulnerability of the escarpment is an illusion. These areas are easily degraded by overuse.

Further south, the panoramic views from Hargreaves Lookout on Shipley Plateau are becoming increasingly popular with tourists. The eucalypt forests below the escarpment are part of the critical 'bush carpet' that form the foreground of escarpment lookouts and which extend to the Coachwood rainforest at Blackheath Glen. This spectacular entrance to the

Megalong Valley with high sandstone walls and dense sclerophyll forest deserves better protection.

The Western Escarpment division consists of all lands recommended for reservation in the Blue Mountains Public Lands Rationalisation Project, Stage 1 and all other crown lands on the Western Escarpment in the Lithgow City Council area. The proposal also includes Lot 275, DP 751650 Donald Road at Clarence, which covers 156.8 hectares of undisturbed bushland that is currently used for passive recreation, bush walking and rock climbing. This block is for sale as a sand resource but is better suited for escarpment preservation.



Cape Horn, a dramatic pagoda pinnacle that overlooks the Wolgan Valley



The high altitude grassy woodlands on Newnes Plateau are unique

Heritage Values

Geodiversity, soils and catchments

The proposal lies on the western margin of the Sydney Basin where the western extremity of the cliff-forming Triassic sandstones, mainly assigned to the Grose and Burralow Formations of the Narrabeen Group, present an exposed stratigraphic column of some 800 metres. The area is the source of the Wollangambe, Wolgan and Capertee rivers, which eventually flow east to the Colo River. Wollangambee River easily satisfies the criteria for being listed as a wild river and the other streams flowing off the Plateau possess very dramatic reaches containing waterfalls and rainforest-lined canyons. Other headwater streams flow south to the Coxs River, while to the north along the Great Dividing Range, tributaries of the Turon River flow westward.

The presence of ironstone and softer bands in the sandstones of the Gardens of Stone area permit differential weathering that is responsible for the beehives, domes and plates in the rock outcrops, locally called 'pagodas'. Ferruginised sandstone shelves project up to 0.5 m from pagoda flanks. By analogy with tors in deep weathered granite landscapes, the pagodas may be relict cores of more resistant rock, inherited from an earlier period of deep

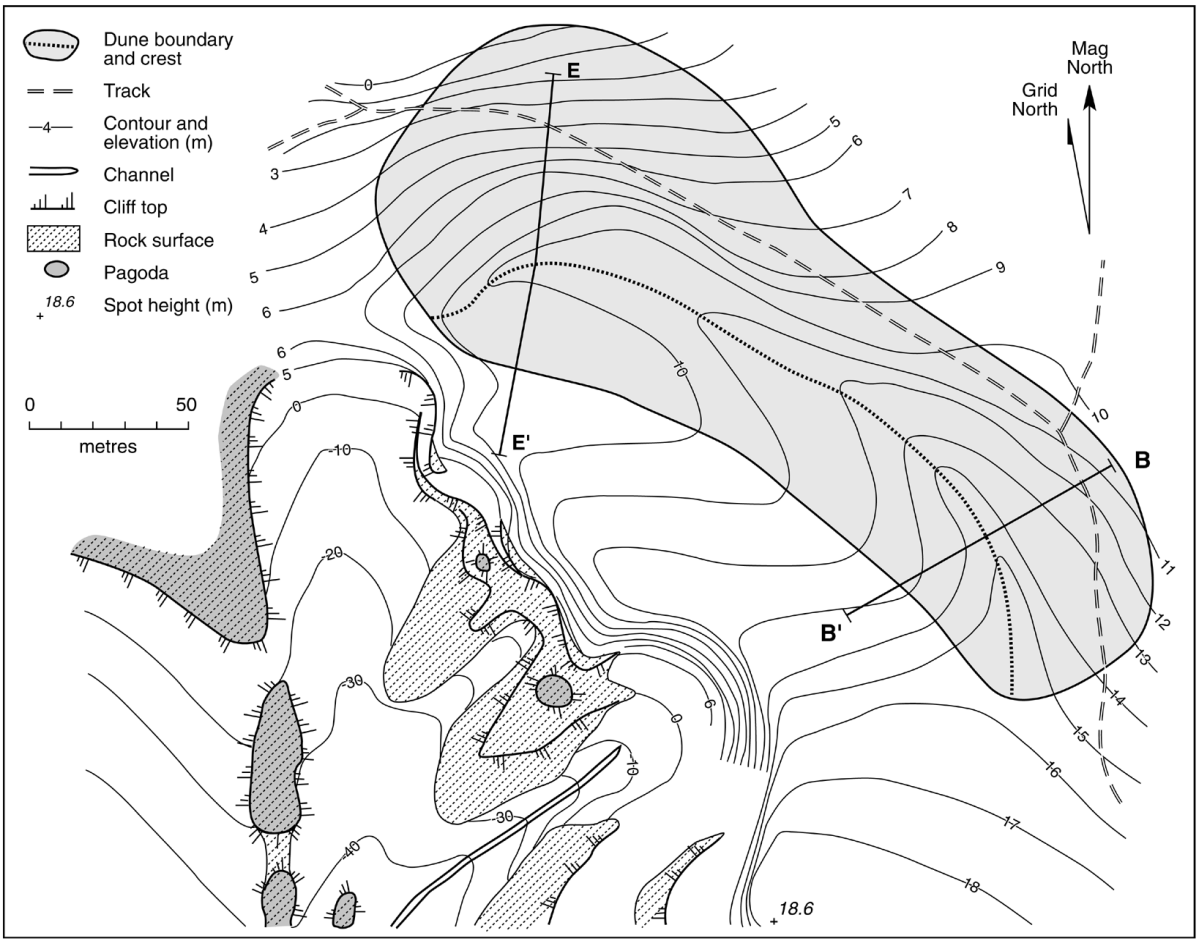


Fig.1 Sunnyside dune. Contours of elevation relative to an arbitrary datum.
Pagoda is a widely used local name for tower-shaped bare sandstone outscrops.

weathering of the Blue Mountain sandstones. Pagoda distribution matches that of steep, rocky spurs above drainage lines and escarpments. A typical pagoda, 5–15 m tall, could develop over 0.5–3 million years. Pagodas increase their relief relative to the spurs upon which they stand at a rate of 3–14 metres every million years until they collapse via flank retreat (~25 m/My) or spur slopes are consumed as gorges widen (Wilkinson et al., 2005).

In addition to spectacular pagodas, Newnes Plateau contains several aeolian (wind formed) sand dunes that were active during the Last Glacial Maximum (Hesse, et al, 2003). Sand



Artwork, Blackfellows Hand Cave

stripped by wind from local soils was deposited as dunes in the lee of cliff-lines, 20–30 thousand years ago. To allow wind erosion, the Plateau must have been above the tree line due not only to the climate being 8–9°C colder and more arid, but also because atmospheric carbon dioxide was less abundant. The relatively large number of relict heath plant species found on the Plateau also must have survived these very harsh conditions.

The soils of Newnes Plateau are very infertile, sandy and acid, with severe deficiencies in plant nutrients and possessing layers of, perhaps lateritic, ironstone gravel. The soils of valley swamps on Newnes Plateau and on the headwaters of Coxs River are organic and highly acid. On the talus slopes below the sandstone plateau, the Permian soils are yellow-leached gradational sandy loams.

West and north of Newnes Plateau, the Coxs and Wolgan Rivers have cut through the sandstone to expose the softer Permian Coal Measures and the Shoalhaven Group of sediments

below them. The Permian coal seams and oil shale layers of the Western Coalfields, which include the commercially-extracted Upper Katoomba and Lower Lithgow seams, are encountered some 200 to 400 metres below the Plateau. Ecological communities, such as grassy white box woodlands, are located where the valuable coal seams outcrop and, because these units are exploited throughout their range, preservation of the communities is inevitably poor.

Climate

As a temperate upland plateau, the temperature ranges from a mean summer maximum of 23.5°C to a mean winter minimum of –1°C. Rainfall is highest on the plateau and averages 1047mm with a summer peak; several snowfalls can occur each year. Rainfall decreases with decreasing elevation and as a result of rain shadow effects to the west reduces to around 900 mm p.a. in the Coxs River headwaters and north around the Airly-Genowlan Mesa.

Topography markedly influences microclimate: for example, cold night air drains to gullies and hollows from the plateau to the valleys below. Snow Gums border these cold air drainage paths. Strong westerly to north-westerly winds can blow all year round and in summer these winds can be associated with heat wave conditions and periods of high fire danger.

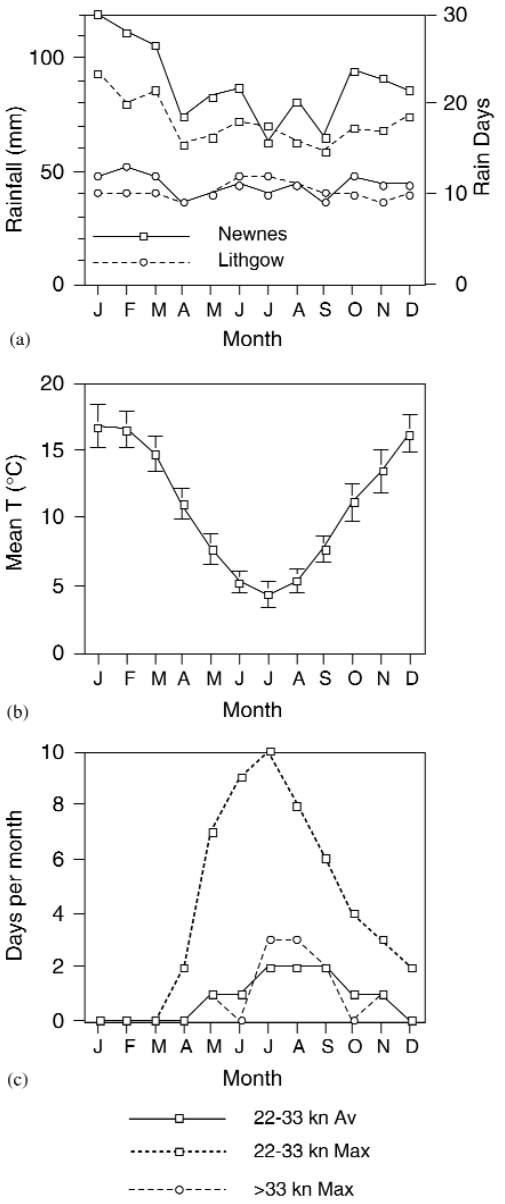


Fig. 2 Climatic data for Newnes Forest Centre and Lithgow (rainfall only). Station 063062 is at 1050 m elevation, 33 124^{0}S 150114^{0}E. The rainfall record (a) covers 43 years, temperature (b) 27 years (with some gaps) and wind (c) years (with some gaps). Lithgow (#063047; 950 m elevation, 33 130^{0}S 150109^{0}E) rainfall averages are based on 74 years of observations. Mean monthly rainfall is shown as the upper data series in (a) and mean monthly rain days as the lower data series in the same panel. Average mean monthly temperature is shown with error bars indicating standard deviation. Average number of strong wind days (22–33 knots) and highest number of days per month on record are shown in panel C.

Flora

The proposal would reserve plants and communities many of which are threatened, of limited distribution and outside the present reserve system. Reservation of the remaining parts of the Gardens of Stone under the *National Parks and Wildlife Act, 1974* would establish an unbroken continuum of forest and woodland types from the moister coastal communities to the western slopes box country.

Newnes Plateau is characterised by montane open forests and woodlands of Eucalypts. The highest, more sheltered parts of Newnes Plateau are characterised by the iconic white boles of Blue Mountains Ash (*Eucalyptus oreades*) in association with *Eucalyptus dives* and several other eucalypt species. This woodland represents the coldest and highest development of native vegetation on Sydney Basin sedimentary rocks. The ground cover is either grassy or with open shrub layer.

The talus slopes and deep gullies around the Plateau are clothed with an open forest of Grey Gum, Monkey Gum and Yellow Box, which are poorly conserved. To the west, at lower altitudes, the Eucalypts are more typical of the western slopes. Open box woodlands extend to the slopes of Mount Airly but these give way to ironbarks and other species of box trees as the steeper slopes are approached.

Newnes Plateau has several botanically important upland shrub swamps that contain distinctive, scientifically important communities of rare locally endemic shrubs, sedges and some species of snow grass. These upland swamps extend over 650 hectares and are restricted to the Newnes Plateau with only 160 hectares occurring in the Blue Mountains and Wollemi National Parks (Hughes, L 2005(a)). Rare plants occurring within and adjacent to the swamps include *Dillwynia stipulifera, Olearia guercifolia, Boronia deanei, Eriostemon obovalis* and a newly discovered species of snow grass (*Gymnoshoenus*). Fringing these swamps are stands of the Wolgan Snow Gum (*Eucalyptus gregsoniana*). All remaining temperate highland peat swamps on sandstone are now listed as nationally endangered and should be fully protected due to their poor conservation status and scientific importance. Preservation of such areas intact is also necessary for continuing scientific research into past environmental changes.

Dwarf heaths, mallee Eucalypts and pagoda plant complexes define the more exposed parts of the sandstone plateau. On the pagodas, amongst the ironstone ledges, are clusters of paper daisies (*Helipterum albicans var. graminifolium*) and the gullies between the pagodas are characterised by Banksia heaths.

The edges of the Western Escarpment, Newnes Plateau and the Airly-Genowlan Mesa also contain many rare plants (eg. *Pultenaea* 'Genolan Point'). In fact there are more than 340 native plants found on 3,000 hectares around the Airly-Genolan Mesa alone. Genowlan Point is also home to a unique and relict plant community comprising Johnsons's Grass Tree, *Allocasuarina nana* and *Micromyrtus sessilis*. It is only 10 hectares in size and has survived the withering blasts of past ice ages when sand dunes moved across Newnes Plateau.

Fauna

The distribution of vertebrate fauna across the Gardens of Stone has not been systematically surveyed. Marsupials sparsely populate the more open woodlands and birds and reptiles are more prevalent among the shrub heaths, along escarpments and gullies. These latter environments, where nutrients and moisture accumulate, provide food and shelter for amphibians in the leaf litter and shelter in the undergrowth for small mammals. Small birds benefit from these thickets, and lyrebirds and macropods take refuge from predators and the weather.

The escarpments and pagoda areas provide a great diversity of habitats. Even a small area offers crevices, gullies, overhangs, massive orange cliffs and thick heath, all of which provide

shelter. These areas support populations of Brushtailed Rock Wallabies, the Broad-headed Snake and its preferred prey Leseuer's Gecko, Heath Monitors, as well as populations of Brown Antechinus, Bush Rats and the endangered Southern Brown Bandicoot. The gully habitats provide shelter for Greater Gliders, Sugar Gliders and Ringtailed Possums.

Swamp heaths also provide shelter, water and different plants, and hence different habitat. Swamp Rat, Southern Emu Wren and the Tawny Grassbird, as well as the Giant Dragonfly and Leura Skink are dependent upon these habitats. The Beautiful Firetail is found in wet and dry heaths and is at the northern end of its range.

Raptors, such as the Wedge-tailed Eagle and Kestrel are frequently sighted soaring around the cliffs, and nests of Peregrine Falcons are sometimes found under high overhangs, such as at Genowlan Point.

Choughs, Red-rumped Parrots, Peaceful Doves, Galahs, Crested Pigeons, Glossy Black Cockatoos, Gang-gang Cockatoos and the Regent Honeyeaters are characteristic of the Airly-Genolan Mesa. Also in this area are White-striped Mastiff Bats, Gould's Wattled Bat and the Southern Forest Bat. Five threatened bat species may forage in the area: Eastern Freetail Bat, Eastern Falsistrelle, Fishing Bat, Large Bentwing Bat and Greater Broad-nosed Bat.

Cultural heritage

The upper Coxs River Valley has a recorded history of Aboriginal occupation probably affiliated with the Dharug and Wiradjuri nations for the past 11,000 years. Game was more abundant in the Capertee, Coxs and Wolgan valleys, and in the Newnes Plateau swamps that provided continuous supplies of food and no doubt were important places given the number of occupation sites. The archaeological deposits associated with shelters bordering some of these swamps have some of the highest densities of artefact material recorded and are largely unstudied. Of these, only the outstanding rock art in the 550 hectare Blackfellows Hand Cave Reserve has been granted protection from mining operations.

The Aboriginal sites contain engravings and axe grinding grooves on flat rock surfaces, rock shelters with substantial archaeological deposits and art, and very dense surface deposits of artefacts often associated with the high altitude shrub swamps. Activities, such as forestry, mining and off road vehicles can impact upon Aboriginal artefacts and sites by, for example, increased soil disturbance and subsequent erosion.

European occupation began when James Walker established Wallerawang Station in 1824 shortly after surveyor Hoddle considered that the areas around the Coxs River and Wallerawang were suitable for development. The occupation included an outstation in the Wolgan Valley.

A year earlier, William Lawson discovered kerosene shale on Kerosene Creek below the Darling Causeway at Hartley Vale. Kerosene shale was subsequently discovered at Newnes and Capertee in 1868. Yet the development of oil shale mining has had a chequered history and occurred in successive waves.

Oil shale mining began in the 1860's at Kerosene Creek, with the ore being carried by horse and cart to the railway and then by rail to Sydney for refining. Following the extension of the railway to Lithgow, a narrow-gauge line was constructed from the main rail line on the Darling Causeway into the valley, and the valley's mining operations extended to several

small oil shale mine tunnels that continued operation until the First World War. The railway easement from the Darling Causeway to near the top of the incline exists today as a track. Remains of the incline are easily found, along with brick and sandstone ruins of the winding house and other relics. In the valley below are two historic inns and the remains of the mining village settlement.



Three oil tankers at Hartley Vale incline, 1906

The oil shale deposits of the Airly-Genowlan area were first reported in 1883 and later developed in 1893 for export by individual miners. The Australian Kerosene Oil and Mineral Company began working the resource in 1895 followed by the Hartley Vale Company. Development of this resource was in response to the decline of resources in the Katoomba, Hartley and Joadja areas. In 1903 mining operations in the Airly-Genowlan area entered a period of instability until 1913 when production ceased owing to competition from mines at Newnes. During this period extensive infrastructure was constructed including a rail siding and 20 retorts on the western side of Mount Airly.

The 'ghost town' near Airly Gap is an outstanding cultural heritage site, with remnants of tunnels, cableways, oil shale retorts, steam engines, dwellings, transportation and mine ventilation chimneys. These ruins have been placed on the NSW State Heritage List. Set amongst cliffs and valleys, which greatly enhance their scenic attraction, the oil shale ruins comprise an outstanding heritage site.

Education and interpretation opportunities

Newnes Plateau is a living laboratory for the study of natural science, cultural heritage and the changes in land management as practiced though time. Weathering and erosion, for example, have their expression in the exposed strata of the Sydney Basin and this is intimately linked with the distribution of native vegetation and animals.

The area lends itself to day and weekend excursions, which could be integrated with existing tourist infrastructure such the Zig Zag Railway, the State Mine, and other cultural heritage sites, including the evocative oil shale mines on the eastern outskirts of Lithgow. The Gardens of Stone and Lithgow's very own Western Escarpment should gain further protection and recognition before these precious natural and cultural assets are further degraded by neglect.

The rock art at Blackfellows Hand Cave, the most readily accessible reminder of Aboriginal activity in the Newnes area, is located just off the Wolgan Road near Wolgan Gap. Its precious art is being degraded by graffiti, instead of being honoured as a vital connection with the past.

Historic railways and roads

At the time of building in 1866-69, the railway viaducts on the Western Escarpment near Lithgow, and known as the Zig Zag, were regarded worldwide as an engineering marvel. The three main viaducts are significant technical accomplishments, particularly given the difficulty of the escarpment site. The area was declared a 220 hectare public reserve in 1881. The reserve is a fine scenic attraction in itself, with superb views.

Nearby, the Commonwealth Oil Corporation in 1906-07 built the Wolgan Valley Railway to serve both people and the refinery at Newnes. This private railway was another remarkable feat of civil engineering, albeit one of a different order. It was built in only twelve months over difficult terrain. Extending 51 kilometres from Newnes Junction to Newnes, the line has two unlined tunnels, the largest now well known as the Glowworm Tunnel. The total drop in elevation on the line was 700 metres and necessitated the use of geared locomotives with vertical pistons and crankshafts (shay locomotives). The line closed with the Shale Oil Refinery in 1933 but remains as a link to a time, not so long ago, when oil was far more precious than today, and not so easily won from the ground.

The Western Escarpment proposal contains further transport links with the past. Between 1815 and 1830 three roads were constructed from the Western Escarpment into Hartley Vale (Cronin, L, 2005). These roads are now walking tracks linking the Mount York peninsula with the Hartley Valley. Coxs Road, the first and original pass to the west, was constructed in only five weeks in 1814 and is extremely steep. To provide a road with better grades, Lawsons Long Alley was constructed between 1823 and 1824. Work on the last road, Lockyers Road, commenced in 1828 and, despite never being completed because the workers were diverted to the construction of Victoria Pass, today it provides walking access.

Recreation

The recreation potential of this area ranges from family outings, picnicking, car camping, day walks to multi-day bushwalks, rock climbing, abseiling, examination of industrial ruins, nature study, bird watching and photography. Unfortunately much of this potential is being spoilt by a predominance of inappropriate off-road vehicle activity that tends to drive away the broader community from enjoying this wonderful area.

The proposed Gardens of Stone State Conservation Area has the potential to be enjoyed by many visitors and could take the increasing stress away from the existing facilities in the Central Blue Mountains. There are scenic treasures such as grand vistas and massed pagoda rock formations. Passive recreation opportunities abound in the extensive areas of grassy open woodland. There are nationally significant cultural and industrial heritage sites nestled in some of the most scenic valleys and escarpments of NSW. A management plan to protect, manage and interpret these values is essential to facilitate appropriate use of the area.



Ruins of 'The Bakery' in the oil shale miner's village, Mount Airly

Management Issues

OFF road vehicle activities, logging, sand quarrying and coal mining are making ever-increasing incursions into the Gardens of Stone. All these activities cause serious environmental damage to fragile rock formations, streams, cliffs and groundwater-dependent ecosystems such as upland swamps. The following section describes the impacts and presents a comprehensive environment protection plan to curb the cumulative impacts, prevent damage and foster appropriate recreation within the proposal area.

Coal mining

The Katoomba and Lithgow Coal Seams under the State Conservation Area proposal have been subject to underground mining for more than 120 years. An advantage of underground mining is that the associated surface works, such as ventilation fans, can be located away from the more environmentally sensitive areas. In practice, however, the location of dams, pumping stations, powerlines, water pipes and numerous roads within the proposal area have tended to be hastily considered with little thought given to minimising the cumulative impacts of successive infrastructure installations. Some recent efforts have been made by Centennial Coal to locate new infrastructure within existing road easements which has partly reduced the impacts. Unfortunately these efforts to protect the environment have in part been negated by the construction of an effluent diversion pipeline through an endangered Newnes Plateau Shrub Swamp.

The problems associated with coal mining include:

1. Mine access roads and utility easements that fragment bushland, encourage inappropriate off road vehicle use and facilitate weed infestation and foraging by feral animals.

2. Soil erosion associated with mine operations and road construction, and soil slumping associated with subsidence of the land surface when the coal seam is extracted. Mine subsidence occurs when the rock strata above the colliery collapse into the void created when the coal is removed. In the Newnes Plateau area, surface subsidence can be up to two metres, but is typically in the order of one metre.

3. Cliff collapse: surface subsidence can be associated with rock fracturing, which, when it occurs near cliff lines, induces cliff collapse and rock falls. Cracks can also transgress prominent physiographic features, such as pagodas, woodlands, heath and swamps. Such damage is capable of degrading the visual quality and ecological function of the landscape.

4. Changes to the watertable, particularly but not solely in the context of endangered upland swamps and natural springs, can cause dieback of native vegetation and subsequent loss of wildlife. The swamps can dry out and sustain serious gully erosion and be destroyed entirely if the peaty soil burns during the next bushfire event. Establishing protection zones in key areas, including all streams and the high altitude shrub-swamps of Newnes Plateau, will reduce damage to the groundwater table. This is particularly important as these peat swamps make a fundamental contribution to the Wolgan River and its tributaries, sustaining the river during dry periods.

Under the *Threatened Species Act, 1995* the NSW Scientific Committee has listed longwall mining as a Key Threatening Process to threatened species and communities (Hughes, L. 2005(a)). Such mining has contributed to adverse effects on the Newnes Plateau upland swamps, which have been recently listed as Endangered Ecological Communities (Hughes, L 2005(b)). The adverse effects of longwall mining are best documented for swamps on the Woronora Plateau (Gibbens, 2003), that are functionally similar to those on Newnes Plateau and likely to be affected by the same adverse influences.

5. Dissolved and filterable salts of manganese and iron are present in waters pumped from the collieries within the park proposal. Oxidation of the effluent water by biological agents causes anoxic conditions for some distance downstream from the discharge points. Pollution of pristine streams, such as the Wolgan and Wollongambe Rivers and Bungleboori Creek is abhorrent and should be totally avoided. Mining operations currently extract about 28 ML of water per day from the groundwater resources of Newnes Plateau. This effluent water is now being diverted by Centennial Coal into the Coxs River catchment for storage in Lake Lyell and Lake Wallace. There is concern that this level of pumping will, over the protracted life of mining operations, compromise streams running from Newnes Plateau into Sydney's water supply catchment and the World Heritage Area, perhaps even to the extent that they cease flowing except after heavy rain. Should this eventuate, wholly or in part, many Newnes Plateau Shrub Swamps will die. It is unfortunate that this valuable groundwater resource is to be wasted as coolant in the coal fired Mt Piper and Wallerawang power stations. The State Government has yet to apply more stringent water conservation measures to the power industry.

Appropriate regulation of coal mining operations

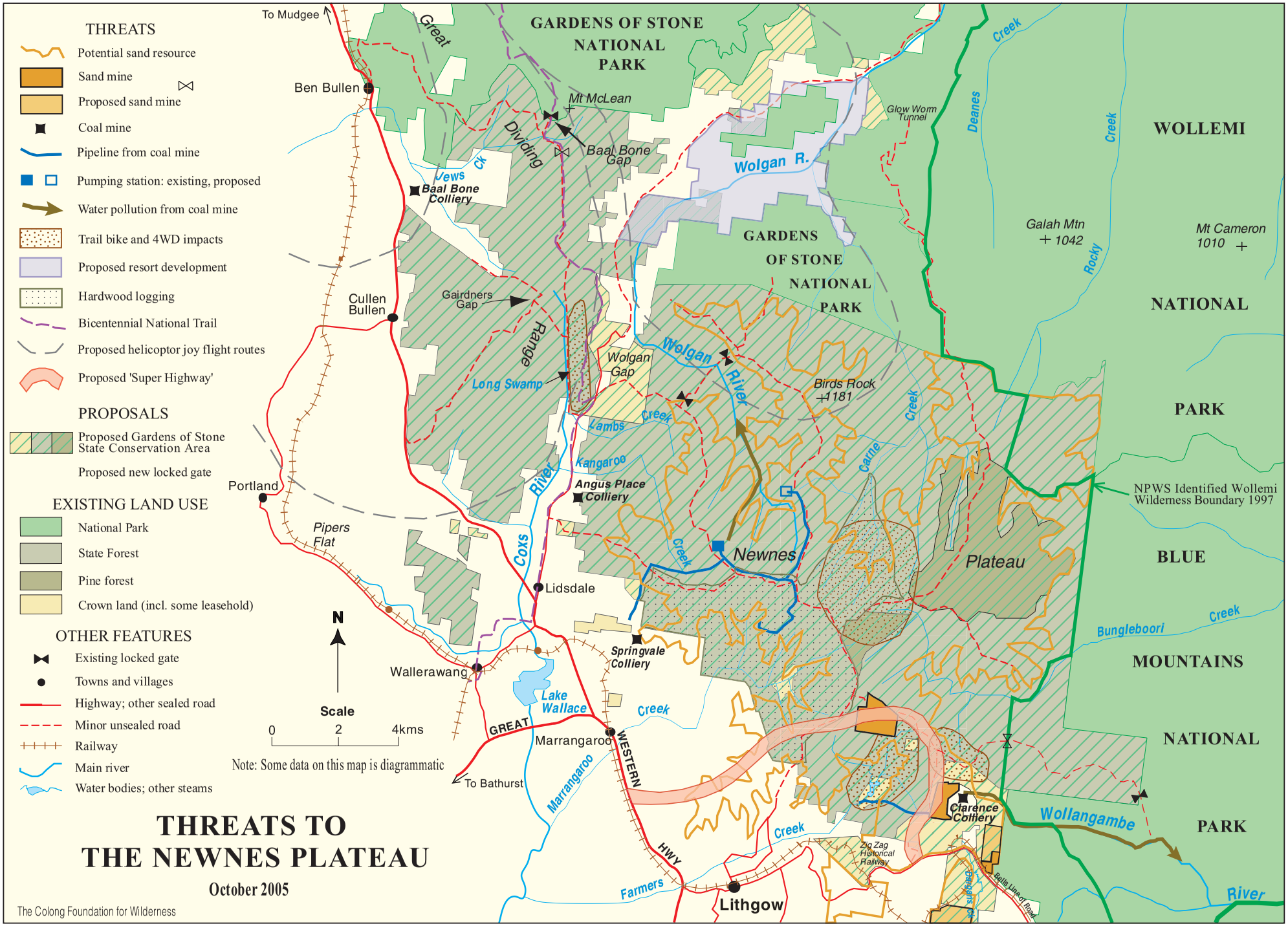
By having regard to conservation of the area's natural and cultural values, coal mining operations can minimise their impacts on the proposed State Conservation Area. Despite nearly all the proposed State Conservation Area being subject to coal mining leases or interests, it is possible to reserve it to a depth restriction under section 30G of the National Parks and Wildlife Act 1974. Section 47H of the same Act provides that a state conservation area does not affect "the terms and conditions of any existing interest in respect from those lands from the Crown… or the use permitted of those lands under the interest".

The recently-introduced coalmine subsidence management planning process should ensure that the values of the Gardens of Stone area are protected for future generations.

Under subsidence management plans upland swamps, pagodas and cliff lines all qualify for protection from mine subsidence. Protection zones require parts of the coal seam to be retained to ensure that the surface environment does not experience environmentally unacceptable subsidence during mining operations.

Using the subsidence management planning process, protection zones should be extended to apply to streams within coal leases to ensure that aquatic environments and their dependent wildlife are not destroyed.

Areas requiring priority protection include Cape Horne to Mount McLean, an extremely scenic but remote watershed running off the Great Dividing Range, and the Baal Bone Creek



THREATS TO THE NEWNES PLATEAU

October 2005

The Colong Foundation for Wilderness



The cliff falls above Lambs Creek were due to coal mining in the 1980s



A Springvale Colliery discharge flows into the World Heritage Area

headwaters, both in Wolgan State Forest. Similarly, the outstanding scenic beauty of the cliffs and pagodas, and the important cultural heritage of the oil shale ruins should make Mt Airly a heavily constrained area for mining, with extensive protection zones. The best mining method for the Airly Mountain would be partial extraction by bord and pillar methods, as adopted at the Clarence Colliery. This mining method has protected Gooches Crater from damage by limiting surface movement to three centimetres.

Pollution licencing by the Environment Protection Authority and selection of the appropriate discharge points can prevent damage to pristine rivers. Clarence Colliery has established an upgraded water treatment plant for mine water so that iron and manganese are removed before discharge. Recently these discharges have been directed to Farmers Creek and should be used to improve environmental flows for the upper Coxs River rather than to enhance water supplies for power generation. The water from the Springvale Colliery is also being transferred from the mine pit to the Coxs River catchment but without adequate treatment. The in-ground placement of the waste water transfer pipe from the Springvale mine should minimise visual and wildlife impacts; however, pipeline construction has damaged sensitive upland swamps and woodland communities.

Sand mining

A draft sand mining strategy developed by the Department of Infrastructure, Planning and Natural Resources in June 2005 plans to provide Sydney with sand resources for the next 30 years and has targeted Newnes Plateau for investigation. The Department has identified a several billion tonne sand resource on the Plateau that it wants to assess. Sand quarrying in indifferent surroundings is not objectionable but large-scale surface mining would be intolerable on Newnes Plateau, particularly as the industry has difficulty keeping to established environmental safeguards, such as ensuring its discharge waters are clean of sediment.

Sand mining requires the complete removal of the natural environment due to clearing and wholesale quarrying of the landscape. Road works, soil erosion, steam siltation and vehicle pollution extend this destruction beyond the immediate extraction site. Three operations have consent to quarry sand on Newnes Plateau: Boral Resources, Kables Sands (Pioneer Concrete) and ROCLA Quarries. Of these, ROCLA has virtually exhausted its lease area, Kables Sands has just received a 20 metre depth extension for its existing site and Boral Resources is not operational. Approximately 310,000 tonnes of sand per year are currently being quarried from the ROCLA and Kables operations.

The environmental impacts of surface mining for sand on Newnes Plateau include:

- Visual impact on scenic amenity of the plateau and surrounding valleys;
- Dust and noise pollution from quarrying and truck movements;
- Discharge of turbid water from overflow points and filling of downstream water holes and canyons with sediment;
- Replacement of hillsides with supposedly rehabilitated deep rectangular pits (unsuitable for any future use);
- Failure to sequentially rehabilitate mined areas during quarry operations resulting in ongoing pollution and environmental degradation;

- Disturbance to the hydrology of the watertable, thereby inducing ecological destruction;
- Lowering of the near surface watertable causing the unique high altitude shrub swamps to dry out and be replaced by exotic pines and other trees.

Many sites around Sydney contain sand resources, and of these the Newnes Plateau on the watershed between the Greater Blue Mountains World Heritage Area and the headwaters of Sydney's water supply catchment would be one of the least suitable places for development of a sand mining district. If the mining strategy is approved a visually intrusive, polluting, noisy, dusty blight will be imposed on one of the most botanically diverse areas around Sydney.

Local and state environment groups oppose surface mining within this park proposal due to the significant and non-reversible damage caused. In particular, the groups oppose the proposal by Sydney Construction Materials for a 27 million tonne mine adjoining the World Heritage Area at Newnes Junction and the proposed sand mining site in bushland on the Western Escarpment south-east of Clarence Village.

The Sydney Construction Materials proposal

Sydney Construction Materials' sand and clay mining proposal is in a Crown Reserve on a descending spur that leads to the Wollangambe River and the Wollemi Wilderness; it is sandwiched between a small village at Newnes Junction and the Blue Mountains National Park. To prevent intrusive development locating next to the World Heritage Area, the site should be added to the proposed state conservation area.

A previous sand and clay quarry proposal on the site was rejected by the Lands Department as being at odds with the preferred nature conservation and environment protection uses of the Village Reserve. The diverse bushland on the site is essentially in a pristine condition and includes two nationally endangered shrub swamps. This proposal, located close to the Wollangambe River, would have more direct impact upon the park and be more visible than any existing operation in this sensitive catchment upstream of the Wollemi Wilderness.

Logging operations

To identify Ben Bullen, Wolgan and Newnes Plateau 'State Forests', as viable timber production areas is a stretch of the imagination. These logging reserves encompass large areas of open woodland with extensive heath lands, swamps, bare rock, cliff and steep rocky slopes. Logging operations are associated with the isolated pockets of iconic Blue Mountains Ash (*Eucalyptus oreades*), which is used for pit props for which there is a declining demand.

The radiata pine plantation in the centre of Newnes Plateau requires tremendous inputs of nutrients and a large fire break to maintain the investment. Without huge fertilizer inputs the plantation would not be viable. To provide the needed nutrients, sewage sludge has been spread over the plantation at a rate of 30 tonnes a hectare, which causes significant pollution of the adjoining Newnes Plateau Shrub Swamps and downstream pristine environments within the World Heritage Area. The pine forest sits over an Aeolian dunefield of deep,

permeable, acidic sand and is the last place to dump sewage sludge. Bushwalkers, canyoners, the local community and conservationists were successful in their campaign to have this practice stopped believing it would compromise pristine waters running off the Plateau.

Further damage to the integrity of the Plateau will occur if the pine plantation is further expanded or if mechanical harvesting of Blue Mountains Ash is initiated. Continued retention of these unproductive state forests is difficult to justify on ecological and economic grounds.

To stop the economic and environmental losses, the pine plantation should be clearfelled, ripped and the affected areas allowed to recover by fostering native regeneration from existing seed stock within the soil and adjoining areas as well as some revegetating with native plants of local provenance if this proves necessary. This approach to rehabilitation has been successful in the former Jounama Plantation in Kosciuszko National Park.

Off road vehicles

The Gardens of Stone State Conservation Area proposal should encourage the responsible use of vehicles by family groups, rather than promote use by high impact off road motor sports enthusiasts. The potential adverse impacts of recreational off road vehicles on natural environments include:

- vegetation damage and removal
- damage to rock formations
- soil compaction
- erosion
- rutting and gullying of 4WD management roads
- stream bank erosion
- stream siltation
- noise as many trail bike motors do not have adequate mufflers
- increased fire risks associated with use of trails
- blazing of new tracks
- costly repairs to management tracks
- increase in illegal activities (collection of plants, firewood, animals and rock)
- dust generation
- damage to and fragmentation of sensitive environments
- death and displacement of native animals
- dumping of travellers wastes, rubbish dumping and other mindless vandalism, such as using trees as vehicle winch anchor points, ringbarking and killing them
- weed dispersal
- incompatibility with other users seeking quiet recreation
- endangering the lives of themselves and other park visitors
- damage to cultural heritage sites (Aboriginal sites and historic road passes)
- loss of native vegetation and scarring of the landscape

Road development is one of the key environmental impacts arising from coal exploration and mining, largely a result of constructing access lines for exploration and monitoring

processes, followed by the provision of powerlines and surface infrastructure for mining and water transfer processes. The establishment of these rough 4WD exploration and utility access roads enables trail bike riders, rubbish and car dumpers, bush rock thieves, pig dog hunting enthusiasts and shooters to access otherwise remote bushland. The problem is multiplied by logging roads, numerous minor tracks used to pull a handful of logs out of the surrounding rugged bushland and by fire management roads. The latter roads are unnecessary, given the other roads in the area.

Drivers and riders of a proportion of off road vehicles, particularly trail bikes, revel in the so-called 'technical terrain' with mud, sand, 'roll overs', steep slopes, loose rocks, stream crossings and rock bars. In the last decade, off-road activity has begun to cause environmental degradation over a wide area of the Gardens of Stone.

While there are some 4WD clubs and associations that promote responsible driving amongst their members – being the drivers of registered vehicles by licensed drivers on designated 4WD trails – there is clearly a significant majority using the Gardens of Stone area who drive vehicles irresponsibly, may be unlicensed and/or drive unregistered vehicles. Unlicensed trail bike riders often have no regard for the damage they cause or the fact that their off road activities are illegal. There is currently very little management of these activities.

Damage to the geodiversity of the Gardens of Stone is permanent; some flora may eventually recover but not the non-living part of the ecosystem.

Access management necessary to protect the area

A much more precautionary approach is required for vehicle access regulation in the Gardens of Stone. To be sustainable, visitor use and enjoyment must be made compatible with the conservation objectives of the proposed conservation area. No motor vehicle should be allowed to go off road on public lands, particularly in a sensitive area like Newnes Plateau.

Bungleboori camping and rest area is located at the junction of the old Bells Line of Road and the Glow Worm Tunnel Road. Trail bike riders have spoilt the area but it has recently been rebuilt. The water tank has been smashed at least once and the area from Bungleboori to the Fifteen Mile plantation has become their exclusive playground riddled with eroding tracks. Police patrols should be increased to prevent trail bike riders driving illegally or irresponsibly.

The siting of park facilities should be away from fragile rock environments. Competitive events are not acceptable in the pagoda landscapes due to potential injury to competitors and the likelihood of damage caused by competitors stumbling over padogas.

Appropriate signage should regulate vehicle use of retained management tracks, while all unwanted tracks should be closed, actively rehabilitated and management trails gated.

The gated access on the Wolgan River link road is a step in the right direction. The plan of management for this sensitive area should limit access to pedestrians only. This short road should be closed and rehabilitated. The Wolgan River crossing serves no purpose other than to present a challenging river crossing and hill climb for 4WD vehicles. Similarly, vehicles should be prevented from driving onto the rock formations at Cape Horn.


THREATS TO THE AIRLY-GENOWLAN MESA
To Mudgee
Castlereagh Highway
Capertee River
Glen Alice
Creek
Road
Genowlan Point
Oil Shale ruins
Gap
Torbane tunnel
Genowlan
Mt Airly
Airly
Proposed mine portal
Pappy's Pass
Genowlan Trig 1038
Proposed mine portal
Proposed Administration Facilities
To Glen Davis
Airly Creek
Capertee
Great Dividing Range
GARDENS OF STONE NATIONAL PARK
Coco Creek
Creek
Rock Creek
Red Crown Creek
Pantoneys Crown
WOLLEMI NATIONAL PARK
THREATS
Pilot coal mine
Trail bike and 4WD impacts
Bicentennial National Trail
Proposed helicoptor joy flight routes
PROPOSALS
Proposed Extension to Gardens of Stone National Park
Proposed Gardens of Stone State Conservation Area
Proposed new locked gate
EXISTING LAND USE
National Park
State Forest
Crown land (incl. some leasehold)
OTHER FEATURES
Existing locked gate
Towns and villages
Highway; other sealed road
Minor unsealed road
Railway
Main river
Water bodies; other steams
N
Scale
0 2 4kms
Note: Some data on this map is diagrammatic
October 2005
The Colong Foundation for Wilderness



The off road vehicle hill climbing course above the Wolgan River has caused much damage



A nationally endangered shrub swamp was cleared and used
for road construction and as a temporary pipe storage area, July 2005

The road to the extreme eastern part of Newnes State Forest is within the NPWS identified Wollemi Wilderness and should be gated. Access to this area should be restricted as it places important areas such as Gooches Crater and upland swamps at risk from off road vehicle use. Vehicle access compromises the declared wilderness that adjoins the state forest on three sides in this area. Gooches Crater is being overused and a gate on the access road to this area is the most effective means of controlling visitor numbers.

The closure of the 4WD road access at the foot of Pappys Pass that leads to the top of Mount Genowlan Mountain is necessary due to the serious erosion and environmental damage caused by the poorly formed roads that cover the mesa. In 1997, roads were bulldozed through important occurrences of the rare plants *Banksia penicillata* and *Pseudanthus divaricatissimus* on Genowlan Point. When complaints were made to the Department of Conservation and Land Management (the manager of these Crown lands), no remedial action was taken to protect these rare plants which include a new species of *Pultanaea* identified in the unique heathland on the Point (Washington, H, 1997). The hundreds of pagodas and nine rare plants on this small mesa should be protected from damage caused by the very steep access roads over the mesa.

Adventure recreation

Repetitive canyoning, abseiling and climbing activity where it involves large groups who congregate and mill around, can be very environmentally damaging, particularly in areas of endangered species habitat on escarpment edges. Adventure recreation can cause loss of soil, rock and native vegetation, as evidenced at existing heavily used sites such as Mt York, Mt Boyce, Centennial Glen, Walls Ledge and Mt Piddington.

Commercial climbing and abseiling can require the installation of storage sheds; shelters for participants; picnic facilities (seats etc); modifications to rock faces such as the removal of ledges and the addition of concrete; insertion of rock bolts; removal of vegetation from cliff edges and cliff faces; signs; safety barriers; access structures such as ladders; and the formation of vehicle access. Formed walking tracks and platforms at the top and bottom of an abseil, so as to help to control the spread of users and limit the area, actually have significant and unfortunate initial installation impacts. Nevertheless, the initial impact of infrastructure is offset by the ability of the ground and cliff edges to then withstand high usage.

Commercial canyoning currently only occurs at Cosmic Canyon on Dargans Creek.

Adventure recreation management principles

No further climbing sites should be developed in the proposal area. The use of rock bolts and anchor points should not be supported outside the existing designated climbing areas. No rock bolts or other aids should be installed in canyons. The existing level of disturbance should not of itself justify continuing with a high intensity use at a site.

Any intensification of use by commercial operations should be subject to an adequate environment assessment, public comment and review process. Sites selected for development should have a high resilience to impact and not have high environmental values.

Critical considerations include the impact on native vegetation, minimisation of ground disturbance, diversion of natural drainage, soil erosion, impact on rock features, visual intrusion, impact on other park visitors and the management of human and other waste.

Formal abseiling and climbing developments may be appropriate within escarpment areas within existing use areas, under certain circumstances and provided the impact on these important areas is minimal. Environmental and escarpment protection must take priority.

Cumulative impacts should be managed by ensuring proposed activities demonstrate that there will be no further impacts beyond the establishment of infrastructure to adequately contain the impacts. Codes of practice need to be developed to cover construction, use and management of these facilities.

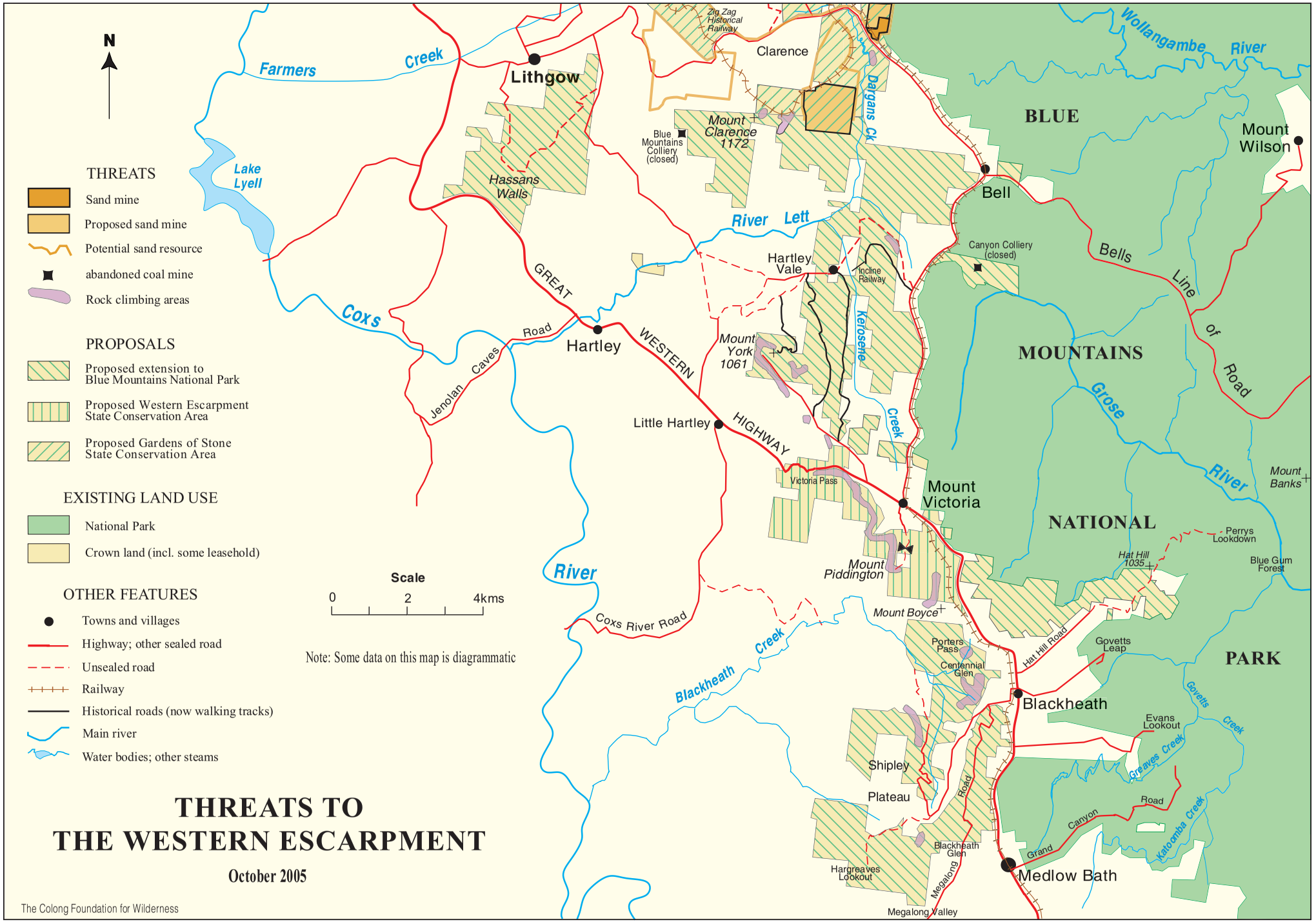
The NPWS Walking Track Construction Guidelines need to be adjusted to specifically apply to construction in areas with highly erodible soils such as the Blue Mountains.

The proposed Bells Line Super Highway

There have been three schemes for a super highway through the Blue Mountains, most of them inspired by the National Party. One was through the Blue Labyrinth, another for a tunnel under the Mountains and a third for a road passing behind the towns through the Blue Mountains National Park. The current proposal, at a cost of at least $2.3 billion, is for upgrading Bells Line of Road using tunnels commencing at Richmond and diverting at Clarence over Newnes Plateau to meet the Great Western and Castlereagh Highways at Marangaroo. In June 2000, Maunsell McIntyre prepared an assessment of the proposal and found it to be grossly uneconomic. Undeterred, the road proponents secured a two million dollar feasibility study for a four-lane highway.

There are many arguments against this proposed road. It would damage World Heritage listed areas, the Grose and Wollemi Wilderness areas, tourism, cultural heritage, endangered shale forest communities and require the acquisition of national park land. Where the proposed super highway passes over the Newnes Plateau it would impact upon nationally endangered shrub swamps, Lithgow's water supply and significant pagoda landscapes. The secret two million dollar Sinclair Knight Mertz superhighway study ignores the origin and destination of Mountains road traffic as the vast majority of the vehicle movements in the Mountains is local, not through traffic. The new road would ruin the charming scenic drive on a forest and fern lined road with spectacular vistas of unspoilt wilderness and pleasant stops to buy flowers, fruit and local produce at local stalls. The current Bells Line of Road is a delightful alternative to the Western Highway and a boon to local tourism. Building a super highway would only encourage urban sprawl, ruin the Bilpin area and compromise the World Heritage area.

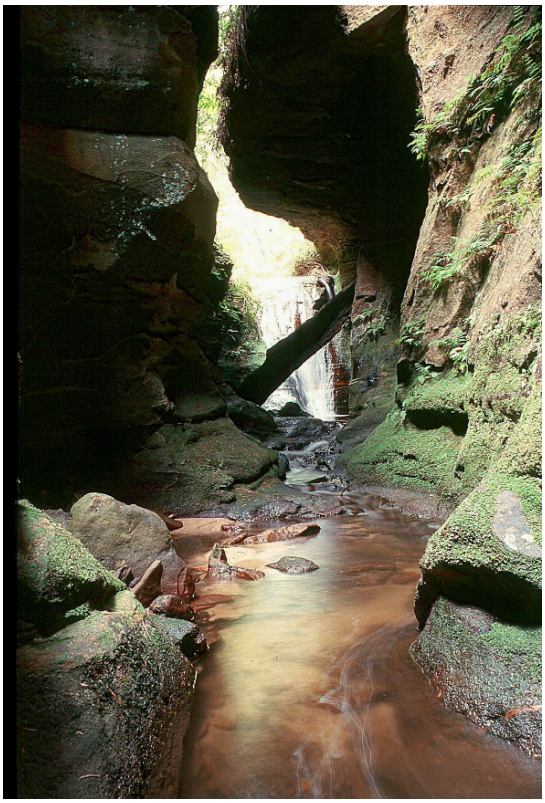
Pursuing expensive major highways in rugged terrain is an outmoded transport policy. The State and Federal government should be investing in rail, not road, to reduce the greenhouse emissions and reduce future dependence on foreign oil. In another ten years most Australian oil reserves will be used up and we will have a huge imported oil bill. The best solution is to spend money to upgrade rail and road access where people live, rather than on an obscene monumental road that would be little used, except by increasingly unaffordable road freighters.



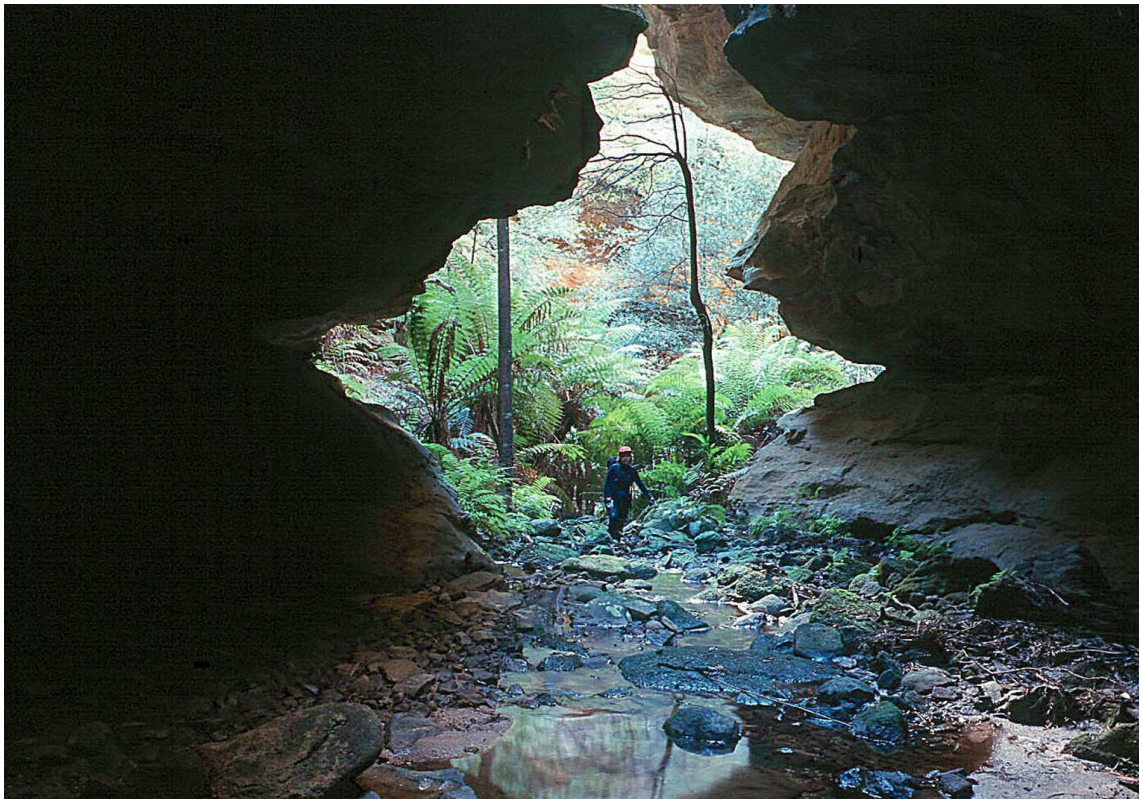
THREATS TO THE WESTERN ESCARPMENT

October 2005

The Colong Foundation for Wilderness



Slot canyon on upper Carne Creek, Newnes Plateau



Slot Canyon on upper Bungleboori Creek, Newnes Plateau

Helicopter joy flights

A proposal for helicopter joy flights over the Gardens of Stone and the Capertee Valley area may thrill the would-be riders but repeats the mistake made in the early 1990s where helicopters in the central Blue Mountains drove both local residents and park visitors to distraction. The proposal, if approved, would operate 7am to 7pm seven days a week.

Helicopter joy flights have an engine, rotor and vibration noise signature that is primarily downward due to air being pushed down by the rotor. In consequence, helicopter operations are significantly louder and distinctly more annoying than the horizontal signature of fixed-wing aircraft. Helicopter joy flights are capable of more frequent, low level flights than other aircraft. The proposed joy flights would adversely affect peregrine falcons, eagles and other raptors, as well as tourists attracted to the Gardens of Stone area.

Ms P Figgis, AM, a former director of the Australian Tourism Commission, has advised that 'The Capertee Valley is a lovely area with a high potential for developing low impact eco-tourism to facilitate enjoyment and appropriate access to the area… The development of such intrusive usage of the area [helicopter joy flights] would in my view pre-empt and preclude the much more acceptable and low key development of attractive farm-stay and eco-tour products. The Valley's ambience as a hidden world "away from it all" would be seriously undermined by regular helicopter flights. Presumably the flights would concentrate over the very scenic Mt Genowlan, Mt Airly and Pantoneys Crown areas which would be the key areas for any ground based eco-tourism, causing serious disturbance to an essential quality of any nature tourism product – the sense of peace and solitude and being within nature.'

To avoid community conflict and protect the natural quiet of the Gardens of Stone area, joy flights must operate within existing background noise levels when flying near national parks wilderness or over any environmentally sensitive area, including the Airly-Genowlan Mesa. This requires flying at 5000 feet and avoiding overflight of wilderness areas and national parks.

Emirates Eco-tourism Resort

The Emirates Airline is proposing to build a $50 million six-star eco-resort on a 1,440 hectare property in the Wolgan Valley. The 30 guest buildings will be spread over 30 hectares, with the rest of the resort being set aside for the protection of environmental values (Emirates Media Release, 22 June 2005). Up to 14 helicopter movements are proposed a week but it is understood that these will not be over the national park and there will be no joy flights operations from the resort.

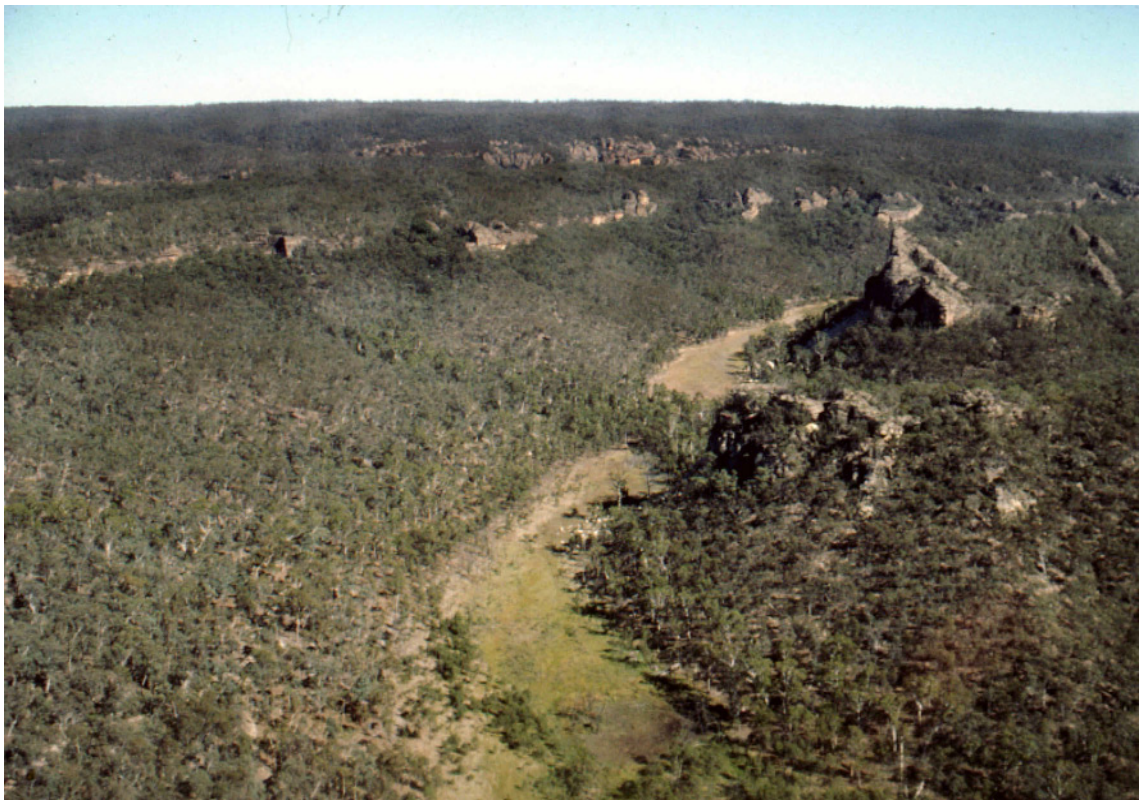
The resort proposal aims to use the natural environment and the Blue Mountains reputation as a premier tourism destination to attract international visitors. Tourism accounts for nearly seven per cent of total employment in the Blue Mountains region and there is great potential of environmentally-sustainable tourism in the Gardens of Stone, particularly since 41 per cent of international visitors visit national parks during their trip. Importantly, the Emirates will assist in the conservation of the local area and the adjacent World Heritage Area. There is also a commitment to recycle water, plans to use renewable energy and significant efforts to repair damaged land.

The proposal, being situated in the heart of the Gardens of Stone, must ensure tourists do not walk on the very fragile assemblies of pagoda rock formations. If the resort seeks to take advantage of the sensitive sandstone escarpment areas for their recreational activities then there would be major environmental problems. Potential negatives for the environment include: increased traffic movements; helicopter flights; demands on water resources; installation of utility services and garbage disposal; increased impact from recreational activities such as 4WD photo tours to abseiling and canyoning within the Gardens of Stone thereby placing stress on these sensitive locations, and increasing the 'need' for additional access to fragile sites.

The proposed eco-resort will need to pass the highest standards of environmental management to ensure the protection of the Greater Blue Mountains World Heritage Area. The resort should restrict its operations to the farmlands of the Valley, and ensure that the impacts of waste water treatment, garbage removal and power supply on the natural areas are zero. There should also be a gifting of land to the World Heritage Area. After all the 6-star eco-resort is locating where it is to benefit from the World Heritage Area and might be persuaded to put money into purchase of national park land to improve area's ecological integrity.



The Lost City pagoda complex



Long Swamp, headwaters of the Coxs River and part of Sydney's water supply, is threatened by coal mining and off road vehicle abuse



PHOTO: J. PLAZA

Mt Genowlan supports a unique community of Johnson's Grass Trees and Dwarf Casuarinas



Airly Turret

Key Recommendations

❶ Reserve as national park and state conservation area the Gardens of Stone and those parts of the Western Escarpment as indicated on the Proposed Park Extensions map on page three of this document.

❷ Develop a conservation management plan for the oil shale ruins at Mount Airly. The plan to preserve these relics and visitation controls should be developed in co-operation with Centennial Coal.

❸ Develop a recreation management plan through the park plan of management process that promotes responsible driving on roads and respects closed tracks and management trails. The roads leading into the Wolgan River headwaters, access to Cape Horn, Mount Genowlan and the identified Wollemi Wilderness should be closed and all tributary roads in these areas allowed to rehabilitate naturally.

❹ Implement subsidence management plans for coal mining that should include subsidence protection for the Newnes Plateau upland swamps, pagodas, cliffs and streams. Wastes effluent from coal mines should be minimised, adequately treated, discharged away from the World Heritage Area and used to enhance environmental flows to the Coxs River.

❺ Implement a strategy and management plan for Sydney's sand requirements which should investigate all options, including appropriate off shore options, so that Newnes Plateau and other sensitive sites can be permanently protected, while adequate sand reserves are identified and recycling of construction sand facilitated.

❻ Refuse the development application by Sydney Construction Materials for a sand and clay mine near Newnes Junction and add the area subject to the proposal to the proposed Gardens of Stone State Conservation Area.

❼ Develop a restructuring package to facilitate termination of native forest logging operations on Newnes Plateau and the removal of the pine plantation, which should be revegetated using native plants of local provenance.

❽ Establish appropriate management regimes for adventure recreation activities, particularly for adventure recreation on the Western Escarpment.

❾ Prevent further climbing sites being developed on the Western Escarpment. Any intensification of use by commercial operations should be subject to environment assessment, public comment and review processes. Sites selected for development should have a high resilience to impact and not have high environmental values.

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