

A threatened wonderland

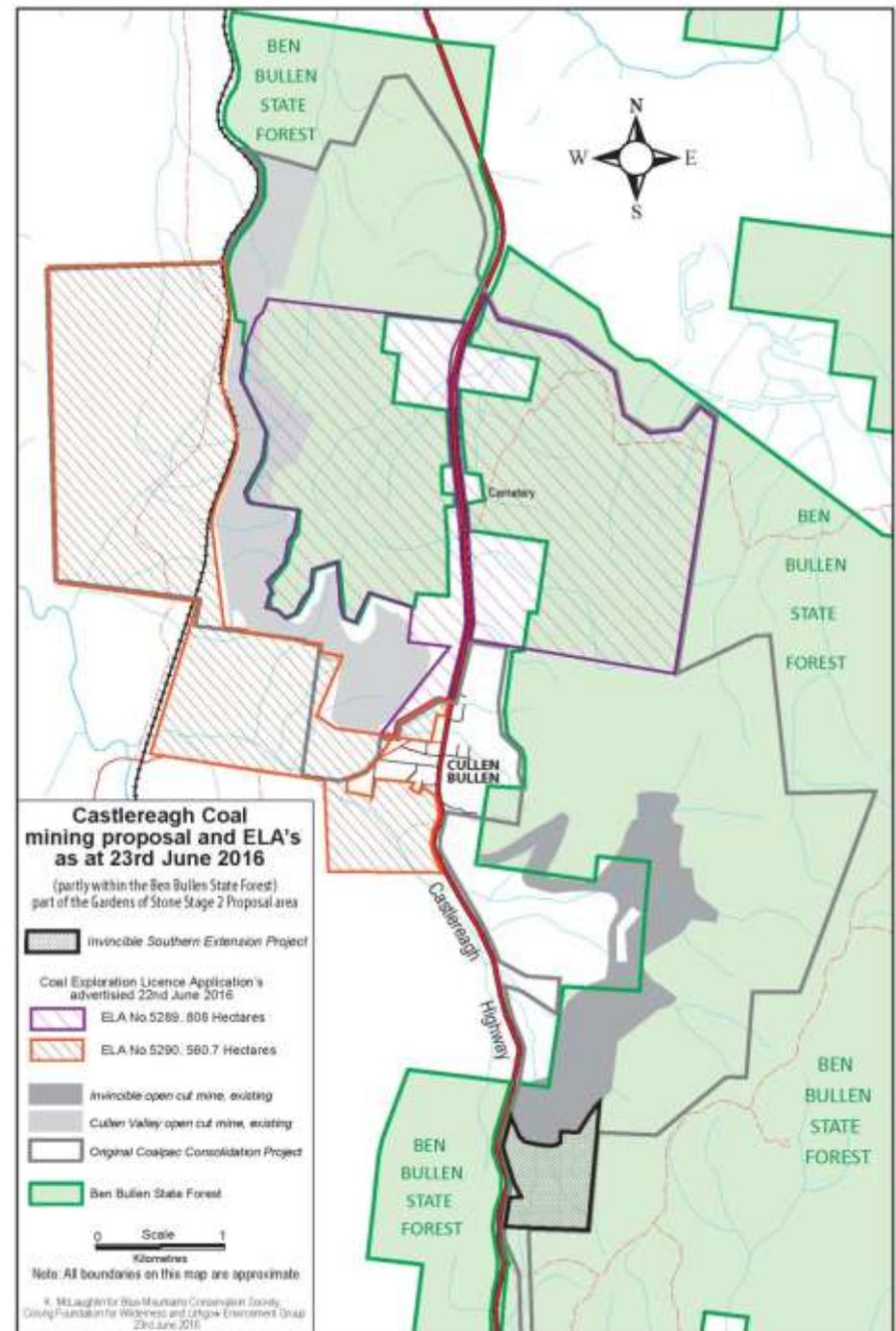


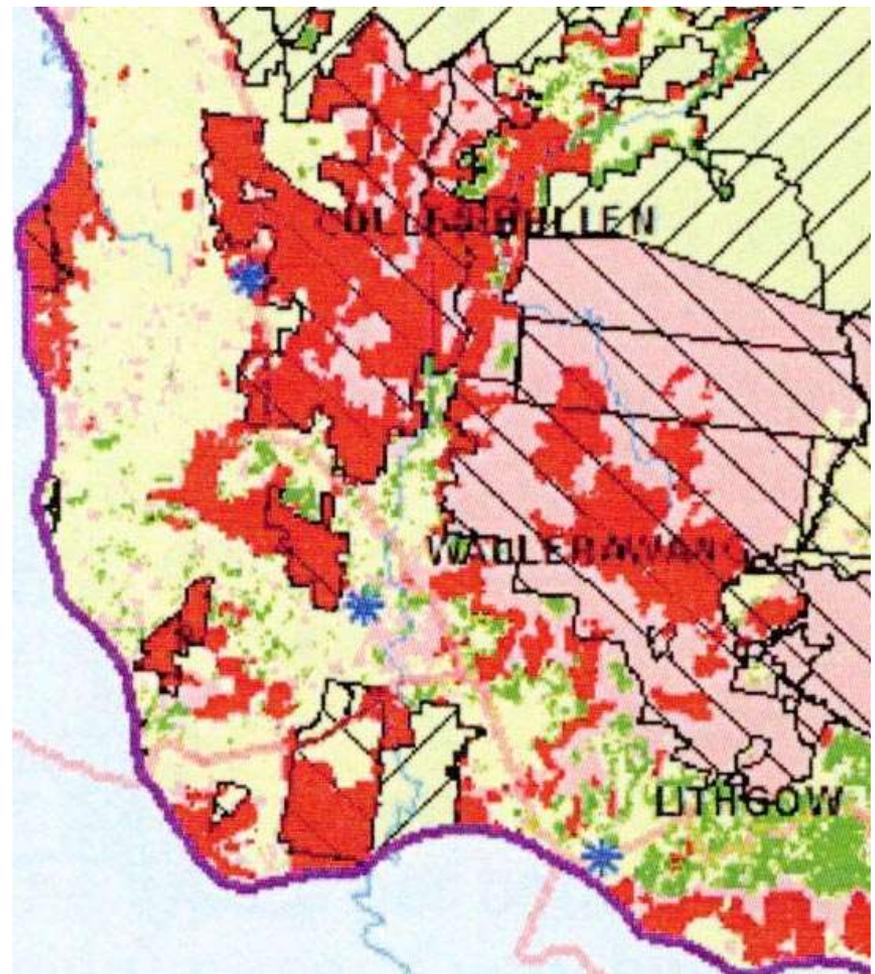
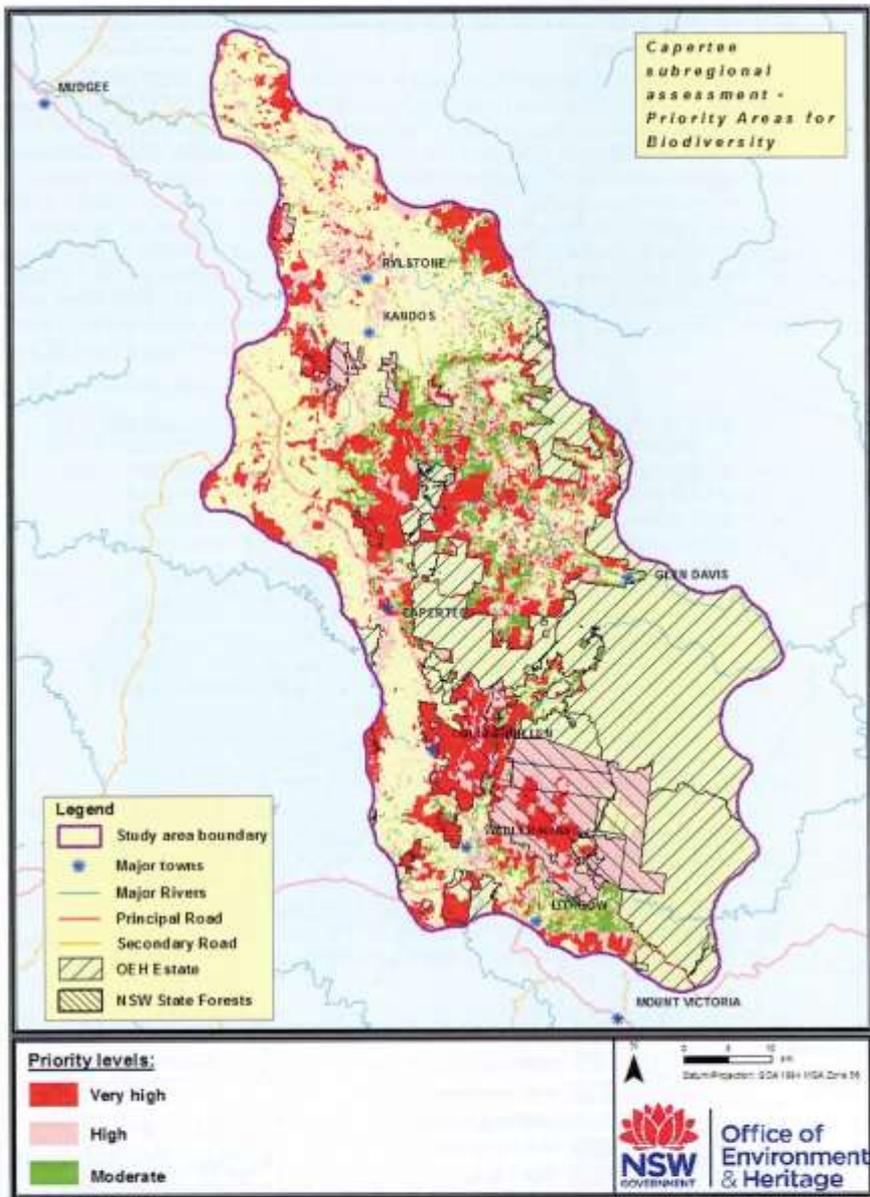
the Gardens  
of Stone

## Proposed modification 5 should be considered with Exploration Licences 8618 and 8619

Both exploration licences are held by Shoalhaven Coal Pty Limited, the legal entity which also owns Invincible mine and the adjoining Cullen Valley operation.

A staged, expanded and ongoing proposal covering 1360 + 50 hectares is in contention, and all the factors regarding the Coalpac findings and recommendations by PACs and DP&E in regard by this larger area should be considered by this PAC.





**This evidence confirms that the area proposed for mining is a very high priority for biodiversity conservation (OEH May, 2014).**

Map 31: Priority areas for biodiversity

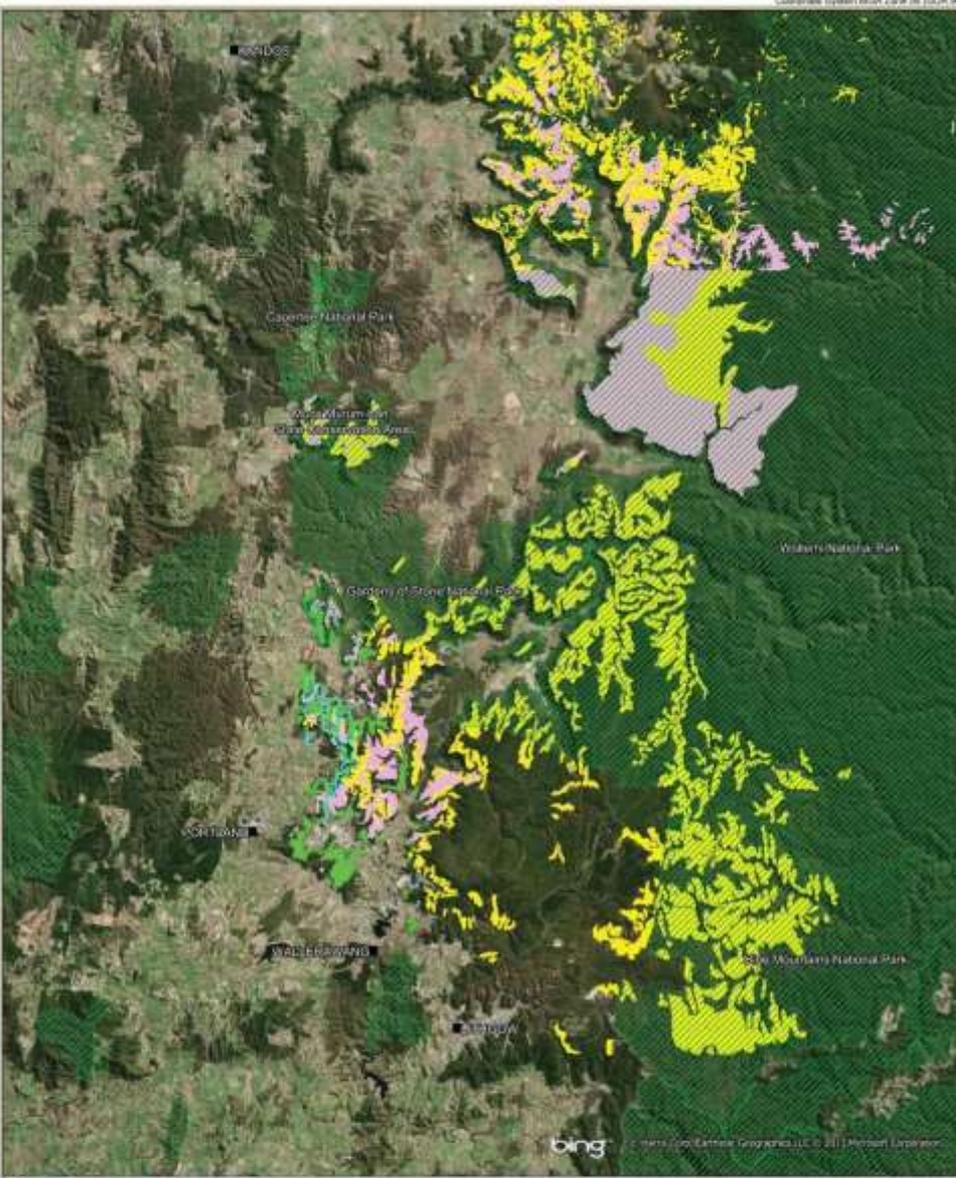
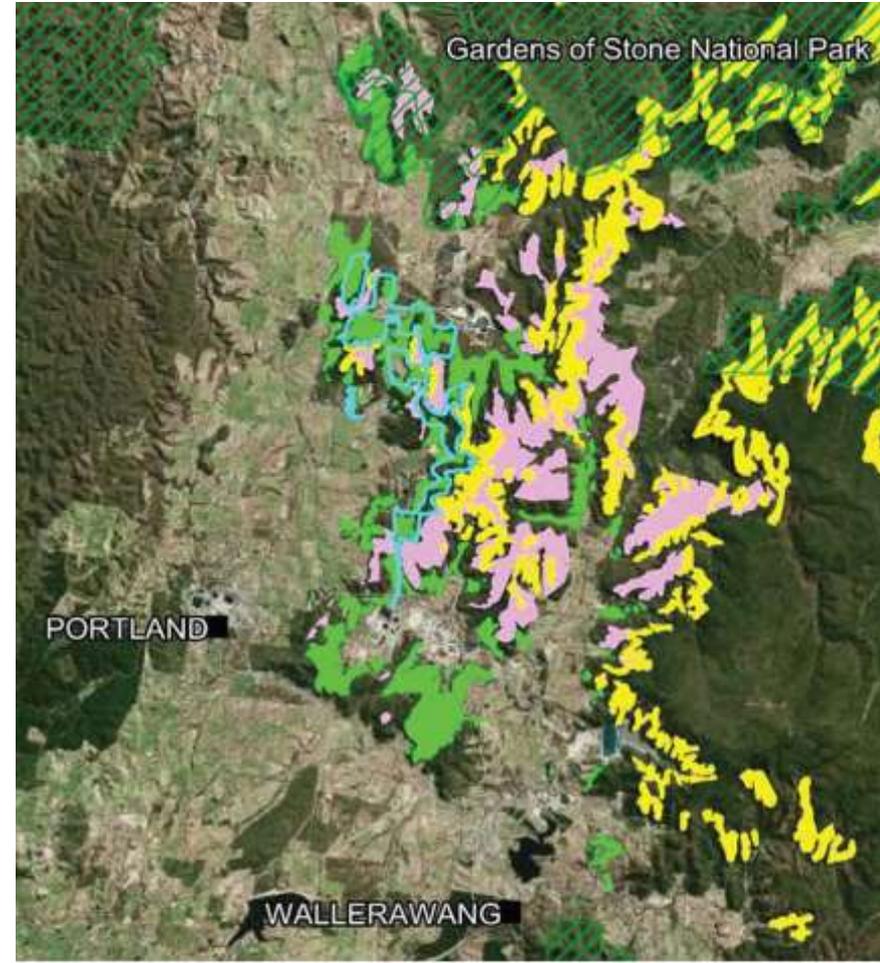
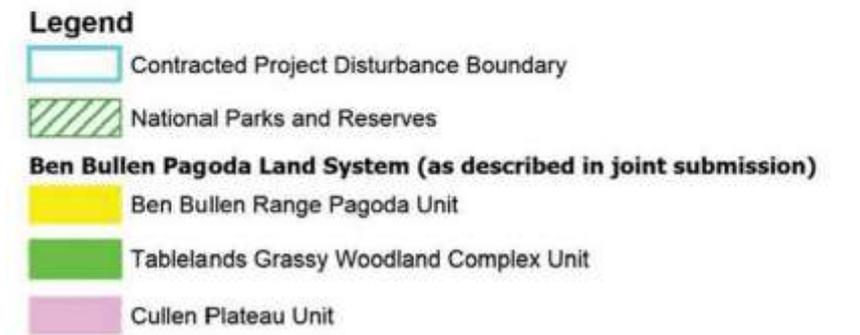
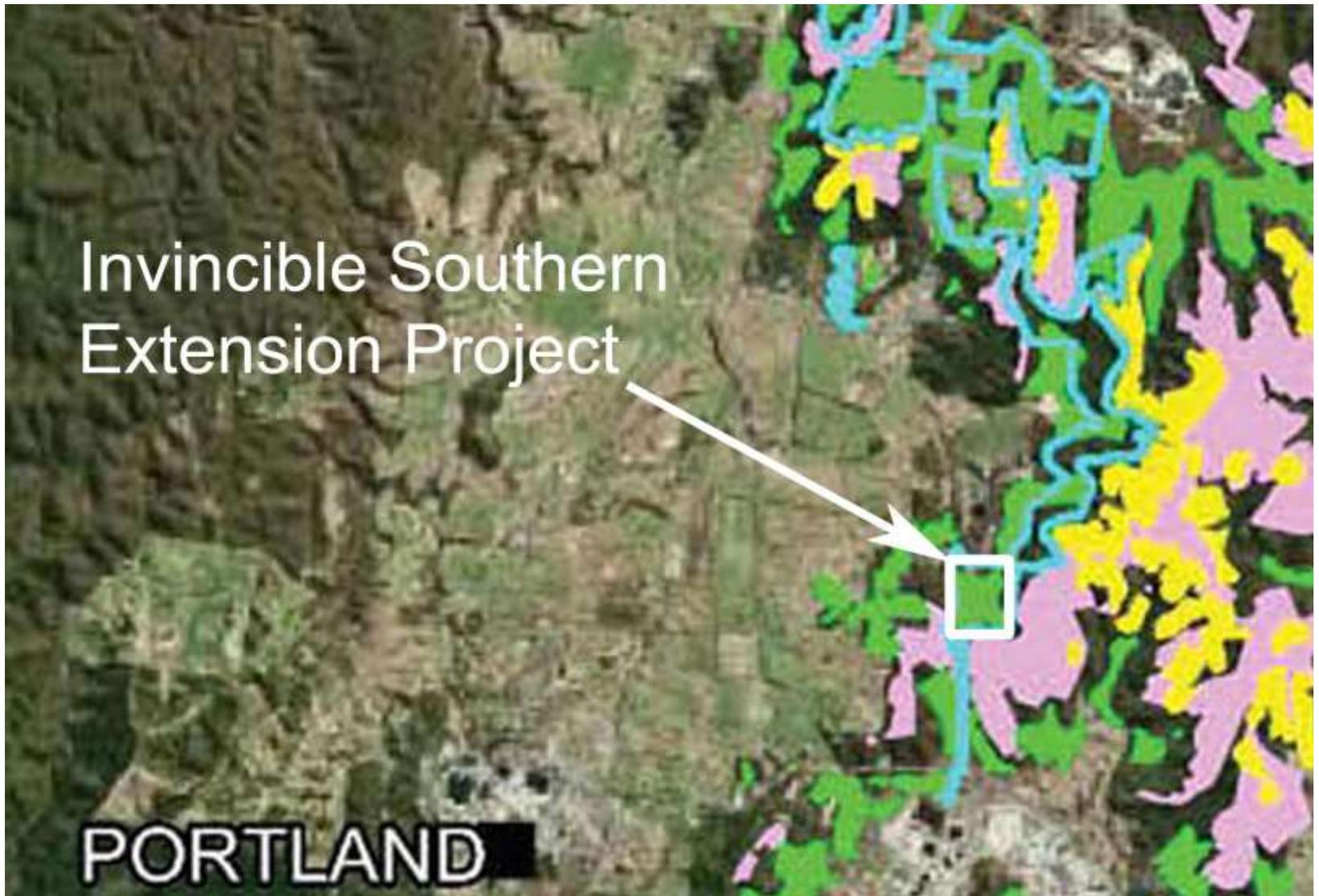


Figure 3. Cumberland Ecology Mapping of the Ben Bullen Pagoda Land System in the Region



### Cumberland Ecology Mapping of the Ben Bullen Pagoda Land System in the Region



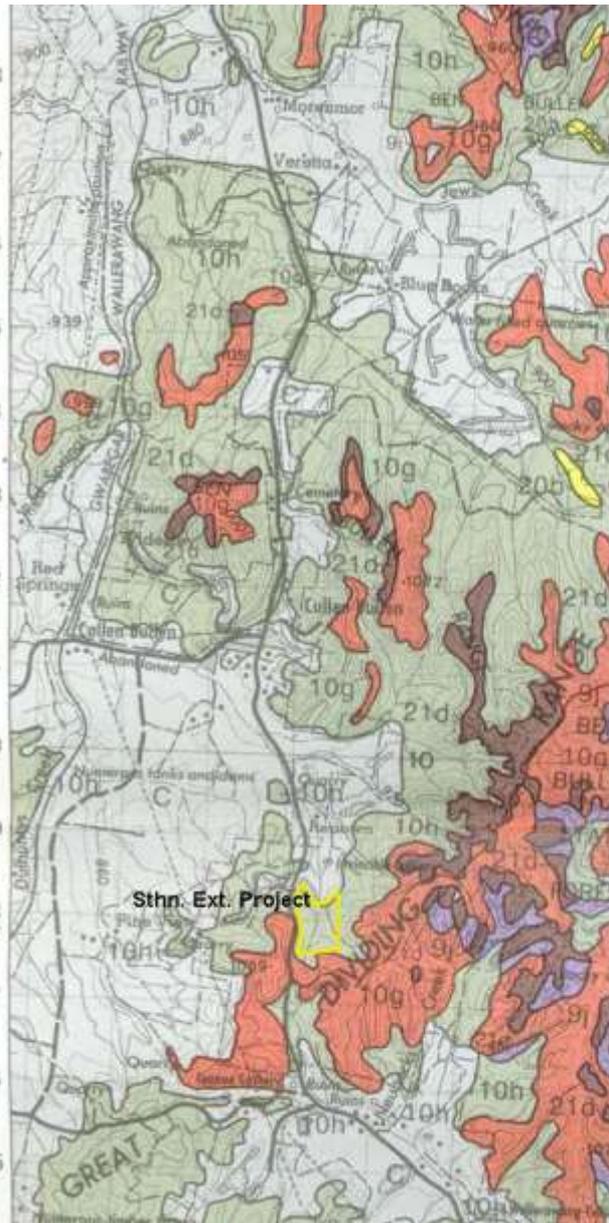


Invincible Southern  
Extension Project

PORTLAND

The Ben Bullen Pagoda Land System of 'Special Significance' consists of all three land units and there is little of the Grassy Tablelands Woodland left associated with these other units.

# Cumberland Ecology Land Unit mapping was based on the National Herbarium Wallerawang 1990 report



10g	<b>"Scribbly Gum-Stringybark Woodland"</b>				
WOODLAND	<i>Eucalyptus rossii</i> , <i>E. oblonga</i>	Narrabeen Group	>800m	Sandstone plateaus and ridges with lower rainfall than 9i	
10h	<b>"Tablelands Grassy Woodland Complex"</b>				
WOODLAND	<i>Eucalyptus rossii</i> , <i>E. macrohyncha</i> ,	Permian Illawarra Group	>800m	Hilly country, dry aspects	
WOODLAND	<i>E. mannifera</i> , <i>E. dives</i>			Undulating to hilly country	
OPEN-FOREST	<i>E. dalrympleana</i>			Alluvium in valleys	
WOODLAND	<i>E. pauciflora</i> <i>E. rubida</i>			Valleys with frost hollows	
21d	<b>"Pagoda Rock Complex"</b>				
OPEN-HEATH	<i>Allocasuarina nana</i> <i>Leptospermum arachnoides</i> <i>Lepidosperma viscidum</i>	Narrabeen Group		Exposed sites on rock outcrops with shallow soils.	
OPEN SCRUB	<i>Eucalyptus sp. nov MOKII</i>			Associated with extensive rocky platforms, and 'pagoda' rock formations.	
WOODLAND	<i>E. rossii</i> , <i>E. piperita</i>			Small sheltered gullies.	



The Scarlet Robin, a threatened species, is one of the most colourful of at least 45 bird species whose homes could be saved – if the open-cut mine is not granted development consent.

Photo by Akos Lumnitzner.



Threatened mammals that live in the area to be mined include three bat species and the Squirrel Glider (above). These beautifully adapted creatures emerge at dusk from their leaf-lined tree hollows in the dry forests and woodlands to glide from one feeding tree to the next, feeding on invertebrates and the gum of wattles and eucalypts. Mostly found west of the Great Divide, the Squirrel Gliders in Ben Bullen State Forest are close to the eastern limit of their range. Photo (above) by Julian Robinson.

Swamp Wallabies are one of the three macropods living in the area to be mined. Others are the Eastern Grey Kangaroo, and Red-necked Wallaby.

Photo by L & M Turton.

The 18 native mammals which live in the mine area includes a number of secretive species. More often encountered are some favourite Australians such as the Wombat  
Photo by L & M Turton (right).



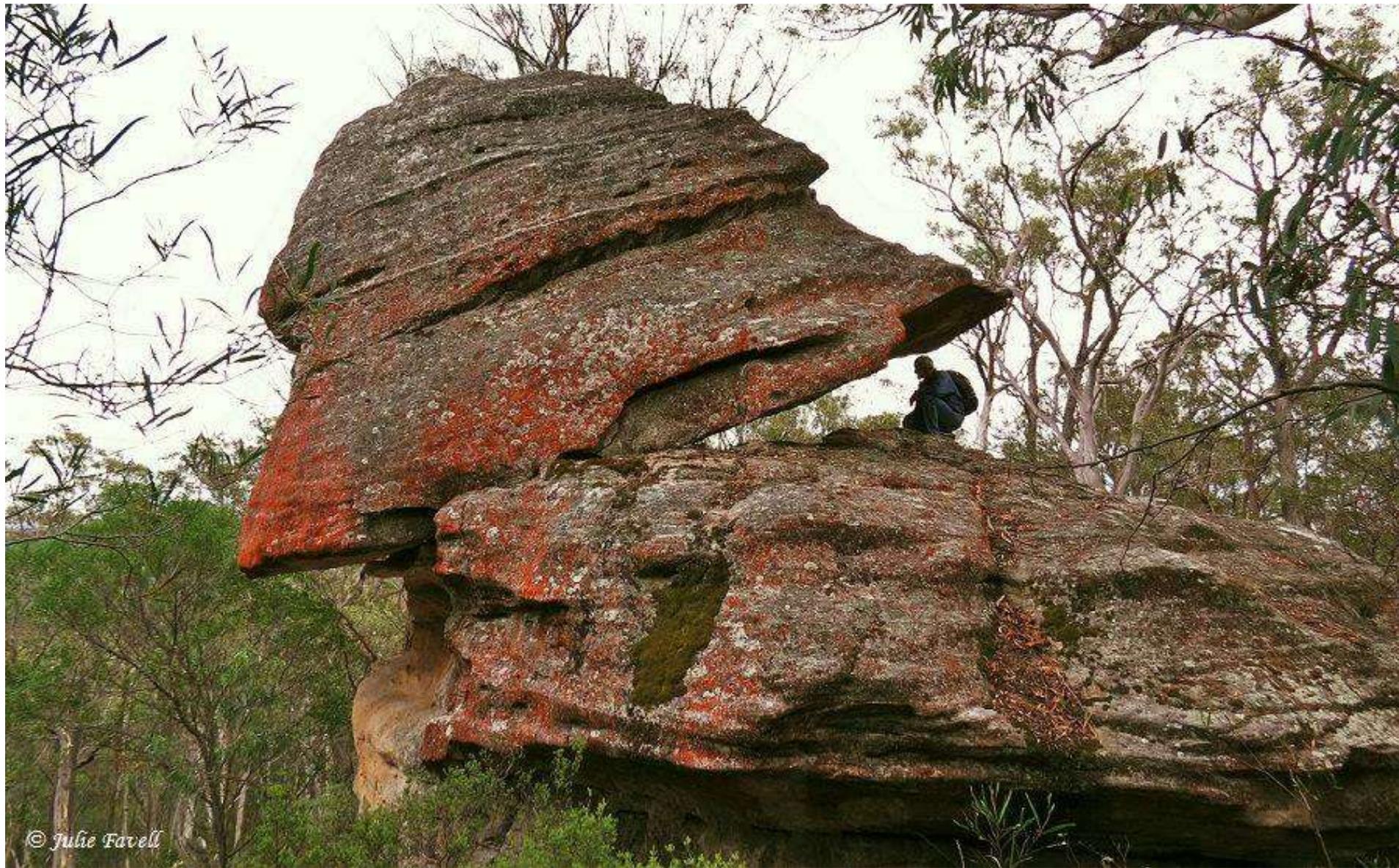
This Broad-headed Snake was photographed within the pagodas of the area.  
This highly threatened reptile is only found in the sandstones of the Sydney Basin, where it shelters amongst rock shelves, and is here close to its western limit.  
Areas of Broad-headed Snake habitat are threatened by the mining proposal.





The area is extraordinarily rich in native bats, with at least 11 species, three of them threatened, and all of which roost in the threatened tree hollows and caves. The vulnerable Yellow-bellied Shearwater Bat roosts in tree hollows. The other threatened bats are the Eastern Bent-wing Bat and Large-eared Pied Bat.

Photo by John Harris.



A balancing rock less than 300 metres from the proposed southern project open-cut.

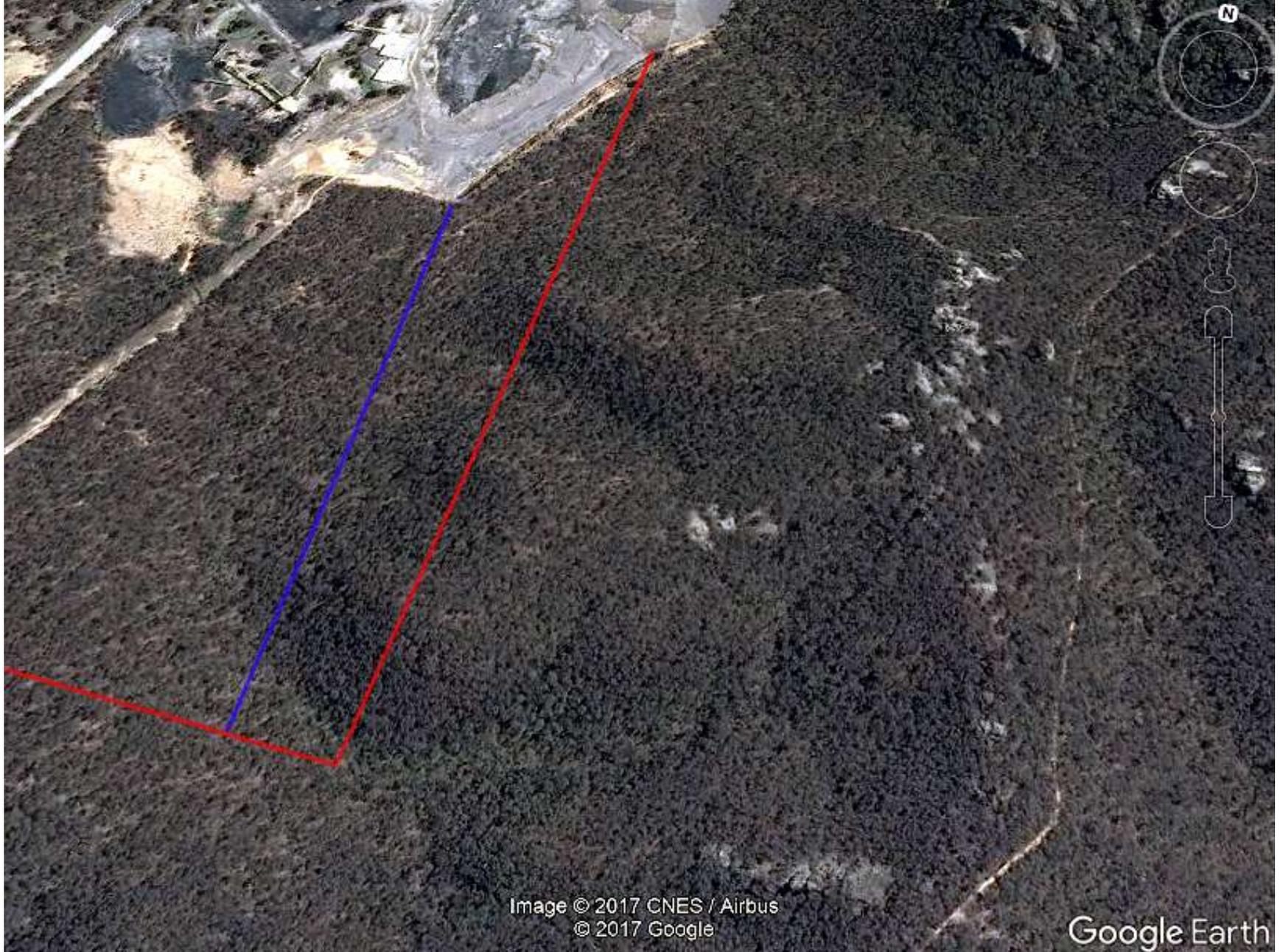
**Proposed modification 5 will mine Tableland Grassy Woodlands close to pagoda rock formations, in the Ben Bullen pagoda landscape complex – (closer than this!)**



Pagodas cannot be considered in isolation (DPI, June 2013).



Open-cut mining would commence on the left of the rock face behind the mine plant and the final face cuts obliquely upslope from that point.



The sensitivity for this project is heightened because it is located in an accessible and popular recreational area (PAC, 2012).

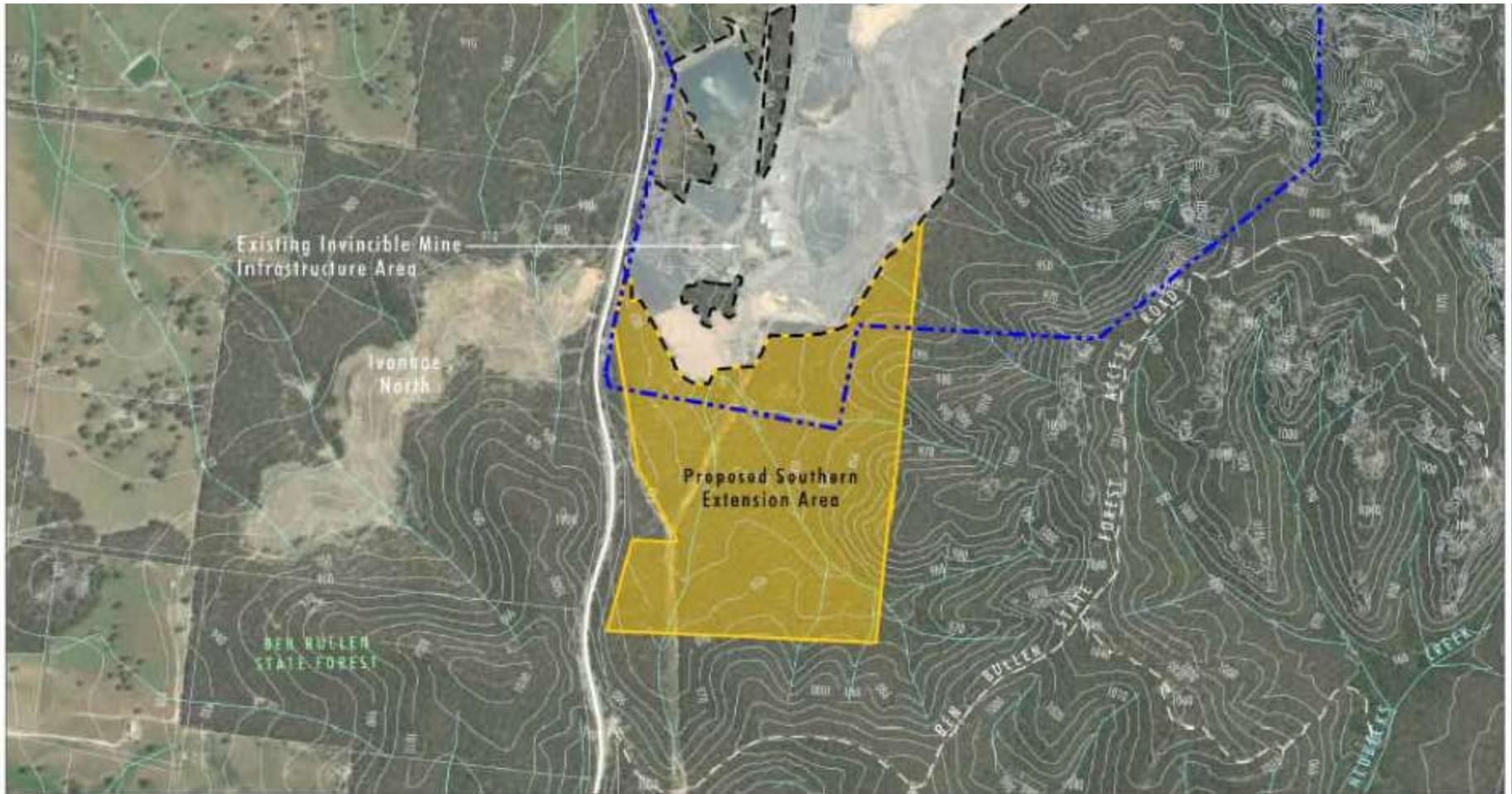


Image Source: Google Earth - CNES/Astrium (Nov 2014)  
 Data Source: LPI (2016), Forest Corporation of NSW (2015)  
 Note: Contour Interval 10m

### Legend

-  Existing Approved Mining Disturbance Area
-  Proposed Southern Extension Area
-  Invincible Project Approval Boundary (PA07/0127)

FIGURE 1.2

Invincible Southern Extension Project

## Ben Bullen Pagoda Land System



The biodiversity in the rehabilitated areas cannot replicate the pre-mining biodiversity in the forest and woodland areas (PAC, 2012).



# Environment groups oppose offsets





Pagoda forming type Triassic Narrabeen sandstone relatively and high nutrient status soils derived from Permian coal measures are absent from the proposed offset area.





There is little of the Grassy Tablelands Woodland left associated with the two other units of the Pagoda landscape of 'Special Significance' .

# Coal yield to impacted area - an environmental comparison

- THREE TIMES the area of high conservation value woodlands destroyed for each unit of coal produced due to re-mining a depleted resource, as well as
- ONE TENTH of each coal unit mined is “nut coal”, the primary justification of the project, so that
- Mod 5 must be very much more damaging in terms of vegetation damage than say producing “nut coal” from the Katoomba seam (~100% nut coal) at Clarence Mine by underground methods.

# Limited energy security

- 2.4 Mt of coal over eight years is negligible security to Mt Piper Power Plant relative to stockpiles;
- 300 kilotonnes over eight years offers marginal security to Manildra's boiler for a short period;
- 3.5 years supply at 85 kilotonnes/year in fact;
- Security is better achieved with a 20 kilotonne "nut coal" stockpile = 3 months.

# Cost comparisons

- A marginal savings for Manildra's input costs is not worth an unreasonably rapid depletion of very high conservation value grassy woodlands of 'special significance'.
- If a mining precedent is established, Manildra will seek further rapid demolition of more tracts in these very important woodlands.
- Manildra has received a high ethanol rebate for years and so should not now be granted a right to rapidly destroy very highly valuable public woodlands for a low "nut coal" yield/hectare.



*"...we are also trying to ensure that our high conservation lands are protected... the Pilliga Forest and the Gardens of Stone...are both amazing areas of high conservation value...we intend to protect all areas of high conservation value..."*

*NSW Minister for Planning and Infrastructure Brad Hazzard,  
speaking in NSW Parliament, 25 November 2011*

