

We pay our respects to the Gomeroi /Gamilaraay custodians and elders and we are grateful to them for the opportunities to visit their beautiful homeland.

Our main points

1. **The Pilliga as an irreplaceable integrated whole system**
 2. **Fallacy of The Pilliga as a largely protected area**
 3. **Fragmentation as a Key Threatening Process (KTP) under the BC Act**
 4. **Regent Honeyeater critically endangered**
 5. **Cumulative effects**
 6. **Failure of DPIE to properly assess risk factors in relation to biodiversity obligations, food production and cultural and social issues**
1. **The Pilliga as an irreplaceable integrated whole system**

“The Pilliga Forest has long been recognised as one of the most important areas for biodiversity in eastern Australia” (Narrabri Shire website)

The Pilliga, as an **integrated whole**, and homeland of the Gomeroi is a one of-a-kind place with State, National and International recognition for its **unique natural values which cannot be replicated or replaced**. Within The Pilliga, Gomeroi/Gamilaraay graciously share their vibrant current culture

- The Pilliga forest is the **largest surviving intact remnant native forest** in the predominantly cleared Brigalow Belt South Bioregion, western NSW
- **The Pilliga is a whole entity and a rarity** at a bioregional scale of western NSW forests – the proposed gas development alone further diminishes the last remaining remnant of native vegetation in the region. **The Pilliga is a unique ecological refuge for wildlife**
- **The Pilliga’s diversity** encompasses habitat quality for many species determined by a gradient in fertility from higher elevations in the south-east to the more fertile outwash zone in the north west. (IBRA sub-regions of Australia’s bioregions – the Pilliga Province and the Pilliga Outwash Province)
- The Pilliga’s deep sandy loams and sands of moderate fertility on flat outwash plains associated with sandstone peneplains support a **variety of distinct plant communities** including
- Open eucalypt forest up to 25 m tall, dominated by box, red gum and ironbark eucalypts interspersed with an open sub canopy of white cypress & other pines, casuarinas and wattles;
- Open sclerophyll shrub stratum dominated by legumes and semi-continuous groundcover of grasses,
- Mallee heathlands. Eucalypt species include the Narrow-leaved Ironbark, several species of Red Gums, Rough-barked Apple, Pilliga Box and Poplar Box, Bull Oak and Belah
- **The Pilliga is a National Biodiversity Hotspot of State and National biodiversity significance – one of only two in NSW and one of only 15 in Australia** (Federal Government SEWPAC 2009). The biodiversity hotspot concept identifies "exceptional concentrations of endemic species that are undergoing exceptional loss of habitat"
- The Pilliga was **globally listed as Important Bird Area 2009 (IBA)** now Key Biodiversity Area (KBA) with over 230 recorded bird species

- 900 plant species with 10 threatened plant species (Biodiversity Conservation Act (BC Act) and Environmental Protection Biodiversity Conservation Act (EPBC Act))
- 7 migratory species listed in the EPBC Act
- 27 threatened animal species (BC Act and EPBC Act)
- 3 endangered ecological communities (BC Act and EPBC Act)
- The Pilliga as a **place of discovery and wonder** with new species **continuing to be discovered** eg **stygofauna** recognised as high ecological value in the sandstone aquifers –(Stygofauna contribute important ecological services by creating a nutrient cycle and have been recognised as indicators of groundwater health. The Pilliga sandstone aquifer has been found recently to contain rare species of stygofauna. A survey of 22 sites within the Pilliga sandstone aquifer conducted in 2016/2017 reported a total of 11 taxa of invertebrates, which include 10 families from five orders of stygofauna. The results show stygofauna exist across the entire area. Stygofauna are vulnerable to extinction from environmental changes and human impacts. They also are classified as being of high ecological value, as the area there is covered by the Lowland Darling Aquatic Endangered Ecological Community listed under the Fisheries Management Act of 1994.)
- The Pilliga is a **vital recharge area for the Great Artesian Basin**

In *A Million Wild Acres* Eric Rolls celebrates the diversity and inter-connectedness of landscapes across The Pilliga, east-west and north-south, the inter-play of geology, hydrology, biodiversity. He recognises and demonstrates The Pilliga's importance **as a whole entity**. He vividly demonstrates with great affection how the dark skies are important for many species and how the myriad plant communities support a vast range of birds, mammals, reptiles, insects and invertebrates. He is attuned to and in wonder of the spectrum of nature – from aged hollow-bearing large trees to tiny flowers, to butterflies, tiny ants, wasps, reptiles, to the diurnal & nocturnal animals and the resident and migratory animal and bird species.

1. 1.1. The Gas project area is an integral part of The Pilliga as:

‘It provides a continuous forested link between the Pilliga Nature Reserve and other important areas of habitat to the north-west, north and north-east. This crucial connectivity not only increases the biodiversity values of all sectors but is essential for maintaining the long-term evolutionary potential of resident populations by facilitating genetic exchange. The Pilliga Nature Reserve Plan of Management (NSW National Parks and Wildlife Service 2003) states that: “Land adjoining the Reserve to the north and west is administered by State Forests. These areas provide continuous uninterrupted habitat. The large size of the Reserve and its connection to adjacent forest make the Reserve an important habitat for a wide range of threatened species including nomadic species such as the Regent Honeyeater”. The latter reference highlights another significant attribute of the Pilliga Forest, its role in providing seasonal habitat for a suite of migratory and nomadic birds as part of the eastern Australian bird migration system (Nix 1976, 1993, Griffioen and Clarke 2002).’ Milledge et al.

Birds, mammals, insects, flora and fauna in general do not recognise the boundaries of target project areas or any other human designated boundaries!

Field recorded sightings in the gas targeted area reveal that the project target area provides home or habitat for: 4 threatened species, one migratory species and one ecological community as listed under the Commonwealth Environmental Protection and Biodiversity Conservation Act (EPBC Act) These comprise: Listed vulnerable plant species *Rulingia procumbens*; Listed critically endangered ecological community White Box-Yellow Box-Blakely's Red Gum grassy woodland and derived native grassland; Three listed vulnerable vertebrate species – the koala *Phascolarctos cinereus*, South eastern Long-eared Bat and Pilliga Mouse (The Pilliga Mouse records showed that this species occurs and breeds in a wider range of floristic associations than previously reported, although established key structural habitat attributes of a dense low shrub layer, sparse ground cover vegetation and a well-developed litter layer were consistent throughout. A rapid habitat assessment indicated that approximately 20% of the Project Area area represented potential Pilliga Mouse habitat.); Endangered Five-clawed-worm-skink *Anomalopus mackayi*; Barking owl *Ninox connivens* (vulnerable); Pale-headed Snake (*Hoplocephalus bitorquatus*); Torquoise parrot (*Neophema pulchella*), Black-striped wallaby (*Macropus dorsalis*), Torquoise Parrot (*Neophema pulchella*); Eastern Pygmy-possum (*Cercartetus nanus*) and the Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*); Endemic Pilliga invertebrates such as the mollusc species, *Galadistes pilligaensis*. Migratory Bee-eater *Merops ornatus*.

The Pilliga as a whole provides an important habitat for a wide range of threatened species including nomadic species. Six of the seven sedentary declining woodland bird species listed under BC Act: Brown Treecreeper (*Climacteris picumnus*), Grey-crowned Babbler (*Pomatostomus temporalis*), Black-chinned Honeyeater (*Meliphreptus gularis*), Varied Sittella (*Daphnoesitta chrysoptera*), Hooded Robin (*Melanodryas cucullata*) Speckled Warbler (*Chthonicola sagittata*), Diamond Firetail (*Stagonopleura guttata*)

There are 176 vertebrate species consisting of 13 frog, 11 reptile, 119 bird and 33 mammal species, with groups such as diurnal raptors, parrots, honeyeaters and microchiropteran bats well represented in the target area. A number of species were recorded at or close to the limits of their ranges including Bibron's Toadlet *Pseudophryne bibroni*, the Eastern Pygmy-possum and Eastern Horseshoe Bat *Rhinolophus megaphyllus* at their eastern limits, and the Wood Mulch Slider *Lerista muelleri*, Spotted Nightjar *Eurostopodus argus* and Crested Bellbird *Oreoica gutturalis* at their western limits. Migratory and nomadic bird species including cuckoos, woodswallows, lorikeets and honeyeaters and one nomadic mammal species, the Little Red Flying-fox *Pteropus scapulatus*, were prominent in assemblages and a number of declining woodland birds not currently listed under the BC Act such as the White-browed Babbler *Pomatostomus superciliosus*, Crested Shrike-tit *Falcunculus frontatus* and Red-capped Robin

Petroica goodenovii were also recorded. (Milledge et.al). An example of newly discovered Australian genus of insect is a longhorn beetle *Kaputar gen.nov* with paratype findings in The Pilliga.

The proponents of the extraction of coal seam gas dismiss the significance of The Pilliga in order to underplay its ecological importance and the vital role of the aquifers replenishing the Great Artesian Basin. In The Pilliga, will cause serious fragmentation and threaten the health of ground water and air quality and will have effects on climate change – these have not been adequately addressed in Santos EIS.

2. Fallacy of The Pilliga as a largely protected area

Only about 30% of The Pilliga is fully protected from mineral exploration and mining. Santos Petroleum Exploration Licences (PELs) 238 and 450 cover about 70% of The Pilliga and are only exempt from lands reserved as national parks or nature reserves or Aboriginal Areas.

State Conservation Areas (managed by NPWS) are subject to mineral exploration and mining. (see attached appendix land tenure and maps of PELs and Pilliga land tenure)

Santos states their Project area is mostly (around 60%) on state land in a section of The Pilliga set aside by the NSW Government for uses including logging and extractive industries and does not include National Parks or Nature Reserves.

So although the current Santos gas project.. ‘will have operational facilities located on about 1000 hectares or around 1% of the 95,000 hectare Project area’ (Santos Fact Sheet) there is the potential to develop future gas operations over 70 % of The Pilliga.

Listing as its first factor in favour of Narrabri Gas Project the DPIE states ‘*it is a relatively small project compared to coal seam gas development in other jurisdictions with up to 850 gas wells to be drilled over 25 years compared to the over 6,800 wells that have been drilled in Queensland over the last decade and the thousands of additional wells that are likely to be drilled in that State over the same period as the Narrabri Gas Project*’ Thus the DPIE dismisses the immediate and long term impact on The Pilliga and surrounding lands and this assessment is especially alarming in relation to the potential of coal seam gas mining in other parts of The Pilliga and surrounds, with 11 CSG titles covering 5.37 million hectares of north west NSW.

Species have already disappeared from The Pilliga and considerable efforts and costs are being expended by the Australian Wildlife Conservancy to try to re-introduce some species (AWC). Perhaps one of Pilliga’s iconic threatened species, the Koala, once abundant in The Pilliga, and now clinging for survival will have to be reintroduced.

But why in the first instance destroy their habitat to make it harder for them to survive ?

3. Fragmentation as a Key Threatening Process (KTP)

Fragmentation and degradation of 850 wells on 425 sites

Predicted key threatening processes include: Loss of Hollow bearing trees from habitat loss or change

Santos SEIS Appendix J2 states that:

“The native vegetation in the development site currently constitutes 80,398 ha of highly connected large patches of continuous vegetation. The development Footprint would fragment the existing patches into smaller patches but would not decrease the overall score for percentage of native vegetation cover”

This is a nonsense – as the project area will have a significant impact on the landscape and its biodiversity because the gas project will chop Pilliga forests into little patches of vegetation bordered by 446 km of linear tracks, roads and pipeline corridors between gas well pads. It is essential that Santos reveals where the wells and infrastructure will be as details are unclear, but will cause extensive fragmentation with serious cumulative impacts, especially on avian biodiversity, and on the viability of remaining koala and other threatened fauna populations. [EIS Appendix C Field development protocol]

“Intactness analysis” as discussed in EIS 15.1.7 indicates that the number of separate patches (islands) of habitat in the Pilliga project area would increase from 387 to 721, almost doubling the number of existing patches and reducing the intactness index.

Santos EIS in Appendix J1 states “Up to 10,143 hollow-bearing trees would be removed during construction of the project... The loss of hollow-bearing trees in the project area would result in a loss of roosting and nesting habitat for birds and arboreal mammals such as possums and bats”. This is a very

significant impact because hollow-bearing trees cannot be replaced by rehabilitation or replanting efforts, as most trees take well over 50 years to mature and to develop hollows.

Santos also states that its operational facilities, will be located on about 1000 hectares or around 1% of the 95,000 hectare project area. (Santos Fact Sheet).

This is akin to cutting out a section out of a person's brain, which may only constitute 1% of that person, leaving a wound permanently open to infection and then stating that it will not affect the rest of the person's body.

The Narrabri Gas Project will fragment and destroy the integrity of the last remaining large, relatively intact forest/woodland west of the Great Dividing Range - an impact that cannot be offset or remediated. It will result in the degradation and loss of foraging and breeding habitat for all threatened woodland birds and animals, including vulnerable koalas. Fragmentation is likely to lead to unbalanced increase in numbers for some native bird species such as Noisy Miners (now listed as a Key Threatening Process) which invade the edges of disturbed forest and dominate patches by disturbing and excluding other birds. It also allows increased access for feral cats and foxes and for predatory bird species such as Currawongs, Crows, or Butcherbirds which reduce breeding success of other birds by predation of nestlings.

Fragmentation by linear clearing in relatively intact forest for the Santos project has the potential effectively to turn the whole Santos lease into Noisy Miner habitat, thus exacerbate the impact of the Noisy Miner Key Threatening Process on four EPBC Act endangered species (Superb Parrot, Swift Parrot, Regent Honeyeater, Painted Honeyeater) as well as the many TSC Act threatened birds and animals.

4. Regent Honeyeater, critically endangered

Let us pause to consider just one species, the NSW & Commonwealth listed critically endangered Regent Honeyeater (*Anthochaera phrygia*) and the necessity to consider the importance of the target project area in relation to adjoining parts of The Pilliga. The Regent Honeyeater is known to have bred sporadically in eastern Pilliga. Three Regent Honeyeaters were colour banded in Pilliga NR bordering the Pilliga East State Forest. Several birds were near an active nest in an Angophora tree. Two more sightings in the same general area on the same day of two separate pairs...a total of 8 Regent Honeyeaters therefore were recorded and three of them were colour banded. One of these banded male Regent Honeyeaters was subsequently sighted again in the Gwydir Park Road TSR, near Kingstown on the northern tablelands, a reserve long monitored as a breeding place by members of the Regent Honeyeater Recovery team** Although this is a species capable of travelling more than 530 km (Geering 2004; 2006), the loss of breeding habitats especially, impacts on its survival. Drought has compounded this problem with the loss of Regent Honeyeater food resources becoming more frequent. Some of the eucalypts and ironbarks in the Gwydir River TSR are dead or depleted due to the recent long drought.

Another important consideration for the survival of species is that habitat fragmentation often leads to the proliferation of Noisy Miners (*Manorina melanocephala*) listed as Key Threatening Process (KTP) which can disadvantage species such as the Regent Honeyeater,

The Regent Honeyeater is facing an extremely high risk of extinction in NSW in the immediate future determined in accordance with the criteria prescribed by the Threatened Species Conservation Regulation 2010. It is estimated that only 350 birds remain.

5. Cumulative effects

The proposed gas-field project alone poses many unacceptable risks to clean water, clear air and vital biodiversity. When combined with the Whitehaven long-wall coal mine to create extractive industrialisation in the north eastern section of the Pilliga, the cumulative negative impacts constitute considerable threats to the integrity of The Pilliga and surrounding areas. (see Slide no. 10 in the attached powerpoint presentation Sky-Earth-Water-Life as presented at the IPC Hearing 20 July 2020) Fragmentation caused by clearing vegetation for the Narrabri Gas Project is an unacceptable cumulative risk to the avian and other biodiversity of the Pilliga.

The DPIE's second factor in favour of Narrabri gas is '*that there is limited scope for cumulative impacts with the Narrabri Gas Project as it is the only coal seam gas project in the region and there are unlikely to be any significant interactions with the coal mines in the area, including the Narrabri underground mine which is located on the eastern border of the project.*' (see Slide no. 10 in the attached powerpoint presentation Sky-Earth-Water-Life as presented at the IPC Hearing 20 July 2020)

The cumulative effects definitely warrant rejection of the project.

6. Failure of Santos and the DPIE to properly accord risk factors in relation to biodiversity obligations, food production and cultural and social issues

With regard to water thank you DPIE for recognising that potential impacts on Namoi catchment water resources is a key risk associated with the Narrabri gas project and we trust that you will continue to research the unknowns of the hydrology of the project area and reject the gas project as Santos does not have an adequate groundwater management plan and there is still so many questions regarding the water sharing plan **However, in light of the many issues at stake that are not adequately addressed by Santos in 2017 EIS, nor by the DPIE assessment, we ask the following questions which we trust the IPC will consider.**

- Where is the exact replicate of this forest that is claimed to be 'offset' ?
- Why have Key Threatening Processes under the BC and EPBC Acts not been addressed ?
- Where exactly are the wells to be located ?
- Where are the **detailed** Plans of Management with regard to species management ?
- Where are the **detailed** environmental repair and threat management programs, such as erosion mitigation measures, pest management, and activities arising from threatened species requirements?
- How is DPIE factoring in the value of retaining The Pilliga intact in relation to the Regent Honeyeater, one of the nation's most endangered species ?
- Who is responsible for fire management plans and for fire responses?
- How has DPIE factored in the effects from climate change as listed as a Key Threatening Process (KTP under the BC Act) ?
- How does the DPIE equate it's statement '*We strive to be a global leader in the planning and management of resources, environmental and socio-economic security, financial affordability, land use and **carbon emissions***' (DPIE website) with it's approval of Narrabri Gas Project which will add about 5 MtCO₂ 2 million tonnes of green house gasses annually to Australia's direct emissions at a time when Australia needs to find about 7.5 MtCO₂ new **reduction** every year to meet it's 2030 goal ?
- Where is the cost benefit and risk analysis by DPIE with regard to NSW primary production now and in the long term that is potentially affected by depletion and contamination of water supplies ?
- Where is the cost benefit analysis of tourism and scientific research associated with Warrumbungle Dark Sky National Park and Siding Springs Observatory with regard to light sky pollution from gas flares and other associated light sources from the Narrabri Gas operations ?
- In relation to amount of forest destroyed by the project, where is the cost benefit analysis of the expenditure in NSW of all environmental projects including Save Our Species, Local Land Services, bush regeneration etc including the amounts of voluntary hours = ? how many dollars ? (In March 2015 the NSW Government pledged \$100 million over 5 years to protect the state's threatened species, commencing July 2016. The new funds 'will allow the Saving Our Species program to expand to cover more species as well as threatened ecological communities and key threatening processes. The programme's current legislative basis is the NSW Biodiversity Conservation Act (BC Act)
- How will Santos meet EPA requirements? Where currently are the monitoring devices located and where in future (if project approved) will the sensitive receivers be located to monitor air quality, noise and 'other environmental criteria'?
- Where is the overall cost benefit analysis of NSW expenditure re state significant development projects v amounts required to remediate future possible depletion of water and potential water and air contamination and to fund programs to save threatened species ?
- How does the DPIE assessment of the Narrabri gas project meet it's own statements of attainment:
'A strong and liveable NSW; Maximum community benefit from government and property;
Resilient and sustainable environment and energy; Sustainable and productive regional industries and communities;
Sustainable and secure water resources
Our Place on Country Aboriginal Outcome Strategy – it is more than a statement of intent or a recognition of Aboriginal identity; it is a roadmap to empower Aboriginal voices within decision-making; to give Aboriginal people greater choice, access and control over land, water, housing'

Armidale NPA - who are we ?

The Armidale Branch of the National Parks Association (NPA) was established in 1974. We have members throughout north-west NSW, some of whose rural properties are severely impacted by drought and fire, and yet those members are still keen to see special areas preserved and protected. Armidale NPA has a long association with The Pilliga, as for more than twenty years, our members have voluntarily conducted regular environmental educational excursions and tours, supporting businesses in Coonabarabran, Narrabri, Baradine and Pilliga by staying in local accommodation and purchasing food and fuel from local outlets. The Pilliga is a cultural landscape shared by Aboriginal and non Aboriginal residents and a place where, as visitors, we have been made welcome and have made lasting friendships.

In 2019 we visited The Pilliga on four separate occasions and organised a forum - *Sky-Earth-Water-Life, Conversations in The Pilliga* with five expert local speakers and one from Tamworth. People who come on our excursions, open to all comers, are keen to learn about local cultural traditions and to share stories while learning about local history and experiencing unique ecosystems within The Pilliga and nearby areas. In addition, we enjoy promoting and visiting the natural and cultural attractions publicised by Coonabarabran and Narrabri Shires. The Pilliga is strategically located between Warrumbungle Dark Sky National Park with Sidings Springs Observatory and Mt Kaputah National Park. We visit places such as Baradine Discovery Centre, Pilliga bore baths, Pilliga Pottery, Barkala Farmstay, the Sandstone caves, Salt Cave firetower and the Dandry Gorge Aboriginal Area Sculpture walk.

Lynne Hosking
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NPA Armidale Branch
8 August 2020
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References :

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- . DPIE (Narrabri Gas Project SSD 6367 Assessment Report)
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- . National Significance A Report prepared for the Northern Inland Council for the Environment and the Coonabarabran and Upper Castlereagh Catchment and Landcare Group Parks Vol 26 1May 2020
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- . *Pilliga Fieldtrip Nature* R. Fitzhardinge NSW Journal of the National Parks Association of NSW Vol. 63 No.2. 2019
- . Santos EIS 2017, Santos website and Santos Fact Sheets
- . Wildflowers of The Pilliga Anthony O'Halloran Bilby Blooms 2011

DPIE website : DPIE states that in it's culture 'We share a common goal to maximise the long-term wellbeing of New South Wales. We do this by protecting and improving : prosperity ; environmental sustainability ; safety and security ; social inclusion and cohesion and attractiveness as a place for recreation and relaxation.' (DPIE website August 2020)... We make decisions based on advice and analysis that are transparent, efficient and reflect the diversity of New South Wales..We strive to be a global leader in the planning and management of resources, environmental and socio-economic security, financial affordability, land use and carbon emissions...By working together we will make NSW a better place for all. In our workplace we value collaboration, humility, accountability, kindness and reflect the diversity of our communities. Outcomes of the DPIE cluster are responsible for : resources within the state; to drive success in Aboriginal organisations and businesses; and to create better outcomes for every Aboriginal person in NSW

**Reference for Regent Honeyeater sightings in eastern Pilliga

** Pilliga Regent Honeyeater Records : fide Andrew J. Ley, pers.com Beth Williams OAM. Regent Honeyeater Pilliga Records from eastern Pilliga 23.11.1991 of Andrew Ley. Mrs Williams and Andrew Ley (licensed bird bander) are members of the Regent Honeyeater Recovery team with BirdLife Australia Monitoring Program (formerly RAOU) - the programme is now under the auspices of Save our Species. Volunteers have spent considerable observation hours at own expense and worked on many projects including with Kingstown Primary school children to plant ironbarks. (The location sites in eastern Pilliga Forest can be supplied to the IPC if required.)

Appendix : Complex Land tenure of The Pilliga resulting in lack of protection for The Pilliga

Land tenure is complex in The Pilliga consisting of freehold land, Forestry Corp state forests, Crown travelling stock routes, Crown leases and NPWS estate managed as national parks (NP), nature reserves (NR), state conservation areas (SCA) and Aboriginal Areas (AA). For the latter, NPWS enters into MOUs with the Gawambaraay Pilliga Co-management committee, who are Elders and representatives from local Aboriginal communities.

In 2005 the Brigalow and Nandewar Community Conservation Area (CCA) was created and divided into several zones.

Zone 1 CCAs are reserved as 'national parks primarily to conserve nature and cultural heritage and provide opportunities for appropriate and sustainable recreation', for example Timmallallie CCAZ1NP.

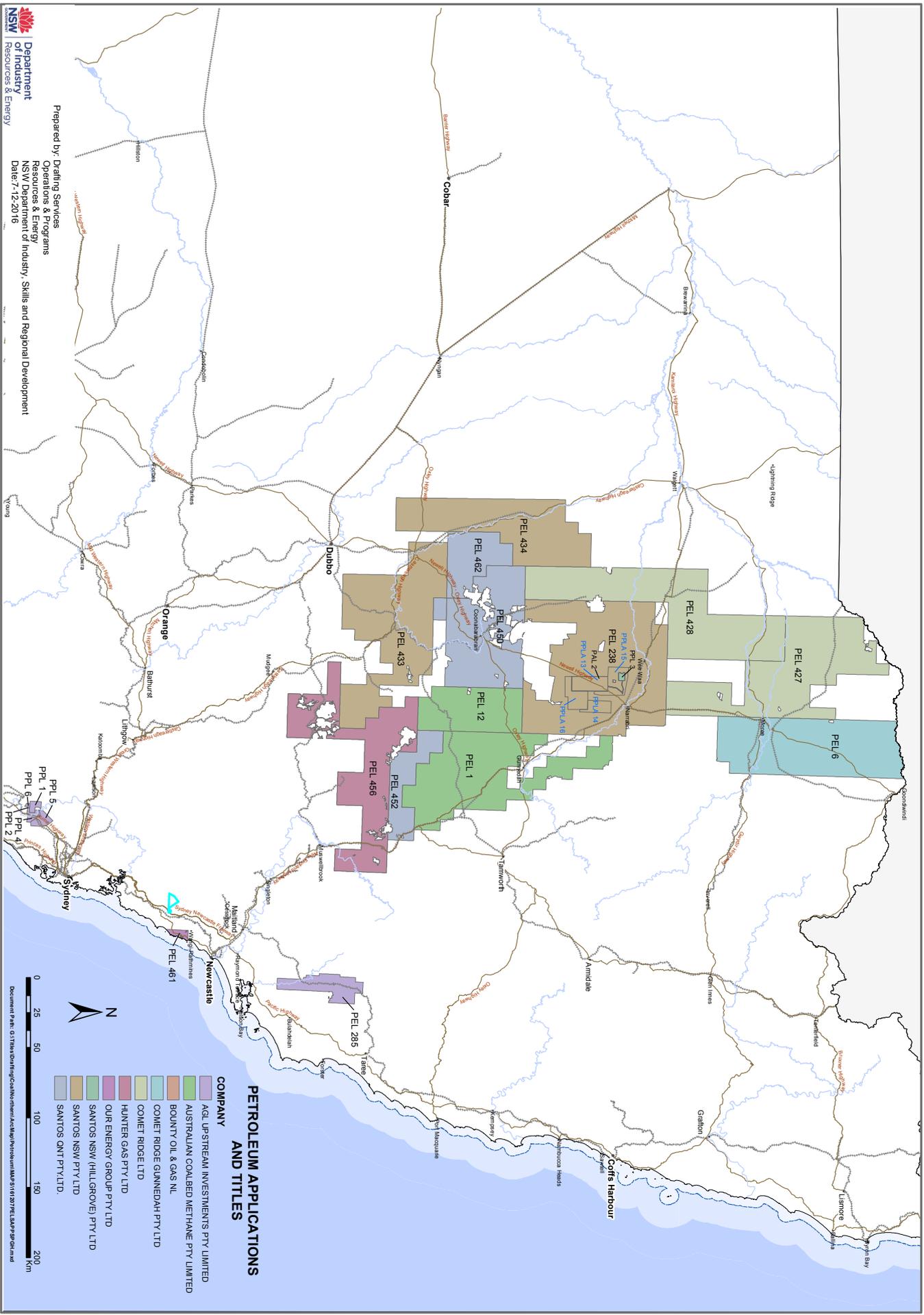
Zone 2 protects places of significance to Aboriginal people eg Dandry Gorge CCAZ2 AA.

Zone 3 enables land that is 'important for its mineral values, but which also has significant natural and cultural heritage values, to be reserved under the *National Parks and Wildlife Act* and managed for conservation, public appreciation and enjoyment', without unnecessarily restricting mining and exploration activity eg Pilliga East CCAZ3SCA. The intention of the SCA category is to reserve lands 'only where conservation values and mineral values do not allow for reservation under any other reserve category, such as national park or nature reserve' (Minister for the Environment, Second Reading Speech, December 2001). The NSW Office of Environment and Heritage and the Department of Trade and Investment, Regional Infrastructure and Services work together to ensure that 'any exploration or mining activities proposed in SCAs are subject to rigorous environmental impact assessment, while also allowing the mining industry to have the access needed to carry out its business'. Pursuant to the *National Park Estate (South Western Cypress Reservations) Act 2010* and the *Brigalow and Nandewar Community Conservation Area Act 2005*, the status of the land was reviewed to determine which areas should remain as SCA and which areas should be reserved as national park, having regard to evidence of mineral values of the land and are subject to review of classification every 5 years in consultation with the Minister administering the Mining Act. This results in approximately 70% of The Pilliga subject to mineral exploration and mining and only the remainder afforded adequate cultural and environmental protection.

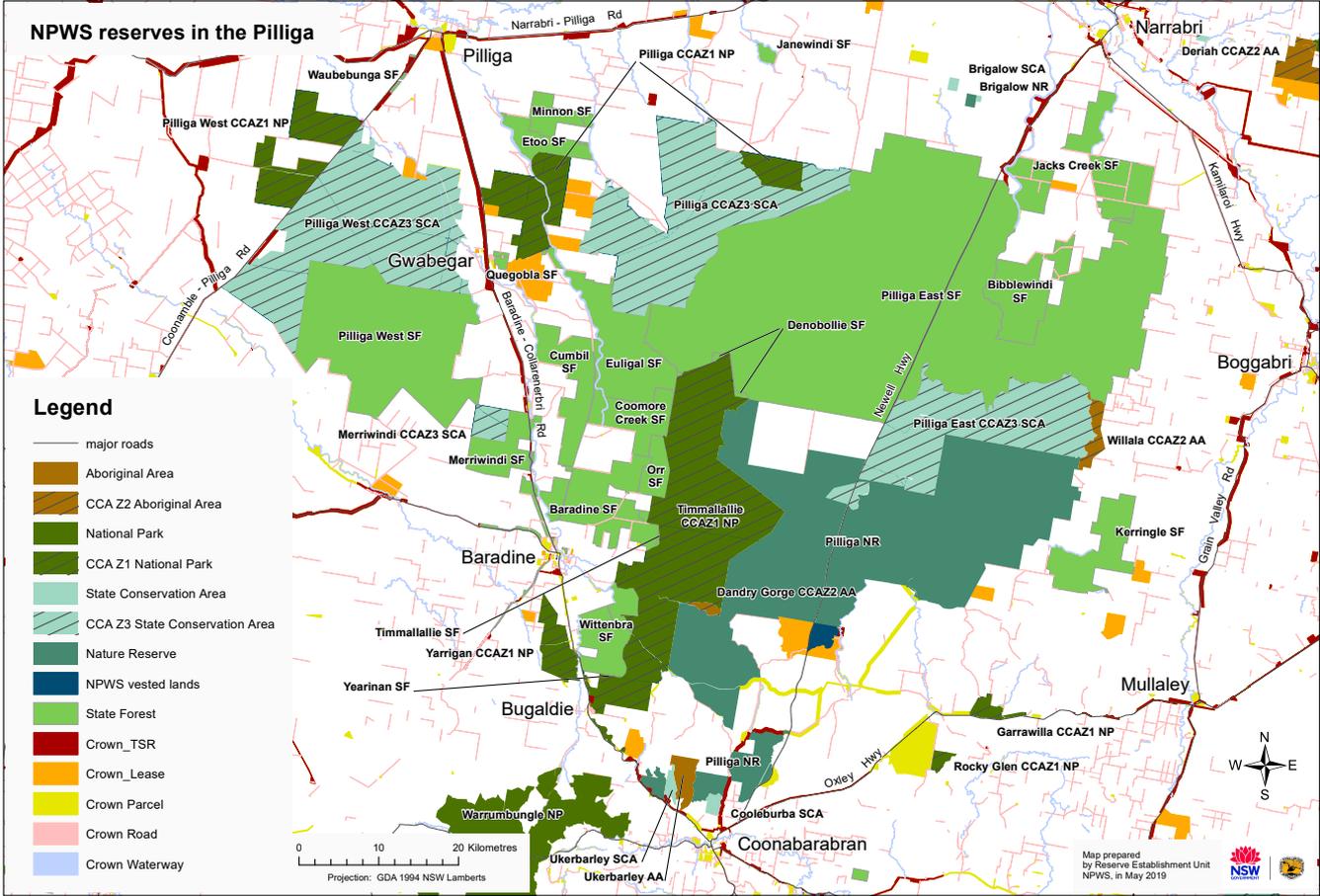
Thus we find, for example, located between Ukerbarley AA and a parcel of Pilliga NR, that the Ukerbarley SCA is subject to mineral exploration and mining as is potentially Pilliga CCAZ3SCA where the Australian Wildlife Conservancy (AWC) has an area of 35,632 hectares and within this, have a fenced enclosure of 5,800 hectares for their re-wilding program.

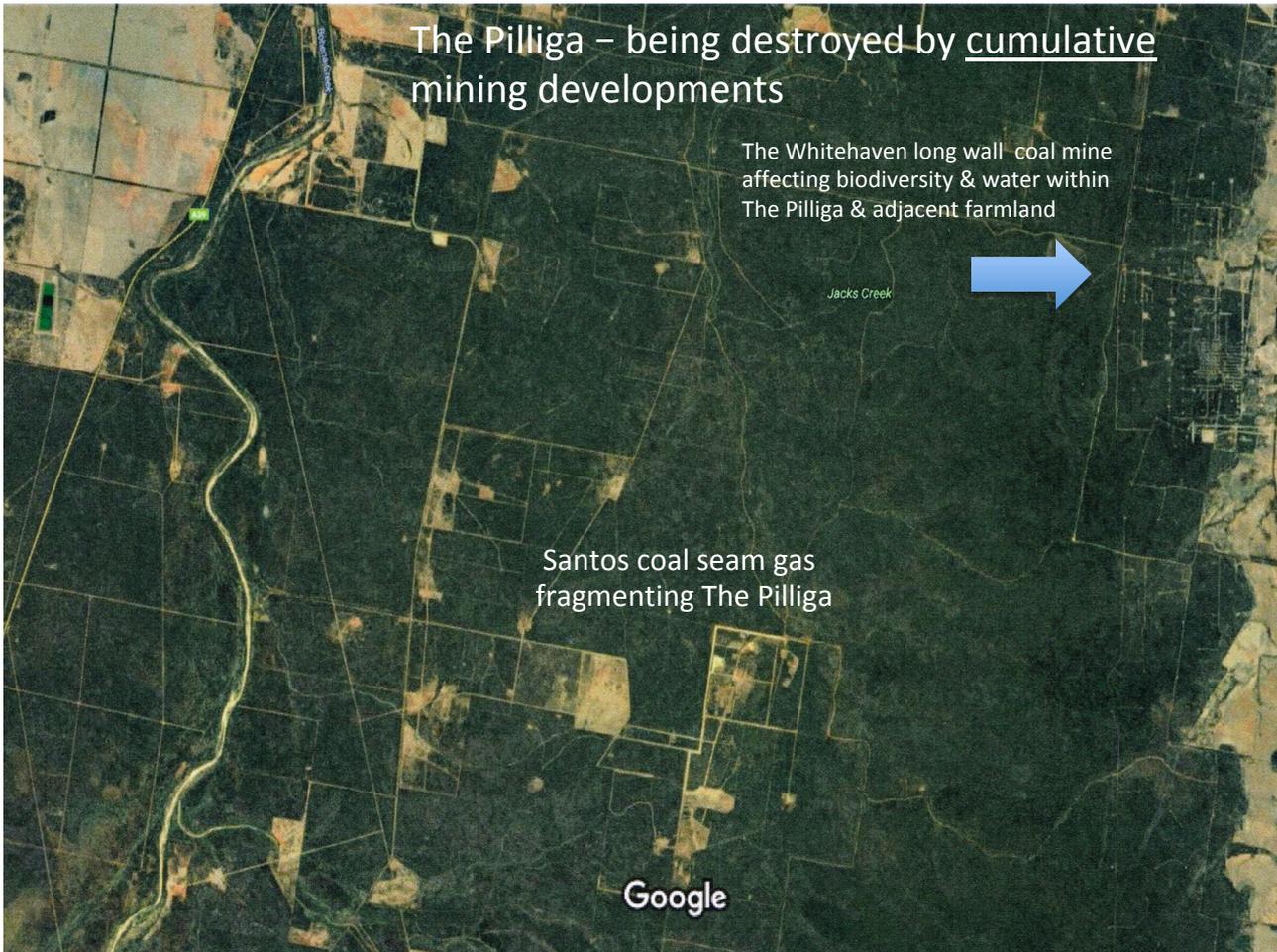
Santos Petroleum Exploration Licences 238 and 450 cover about 70% of The Pilliga and are only exempt from lands reserved as national parks or nature reserves or Aboriginal Areas.

State Conservation Areas (managed by NPWS) are subject to mineral exploration and mining.



Prepared by: Drafting Services
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NSW Department of Industry, Skills and Regional Development
Date: 7-12-2016





The Pilliga - being destroyed by cumulative mining developments

The Whitehaven long wall coal mine affecting biodiversity & water within The Pilliga & adjacent farmland

Jacks Creek

Santos coal seam gas fragmenting The Pilliga

Google

Sky-Earth-Water-Life

What is special about The Pilliga and surrounds?

National Parks Association NSW (NPA) is a not for profit community conservation group
Protecting Nature through community action since 1957
Armidale & Tamworth Branches were formed in 1974

NPA is **not to be confused** with the NSW Government agency National Parks & Wildlife Service (NPWS)

Lynne Hosking
Armidale Branch NPA
20 July 2020

Photo taken from Salt Cave Firetower L.Hosking June 2019

We pay our respect & gratitude to the traditional custodians of The Pilliga



Gomeroi womens' flora & fauna tactile sculptures "Respect Mother" on the Sculpture Walk at Dandry Gorge, especially magical at dawn or sunset

- “The Pilliga Forest has long been recognised as one of the most important areas for biodiversity in eastern Australia” Narrabri Shire website
- Largest surviving remnant of native forest in the predominantly cleared Brigalow Belt South Bioregion
- National Biodiversity Hotspot of State & National biodiversity significance - 1 of only 2 in NSW & 1 of 15 in Australia (Federal Government SEWPAC 2009)
- Globally listed Important Bird Area (IBA)
- 900 Plant species - 10 threatened plant species BC Act & EPBC Act
- 7 migratory species listed in the EPBC Act EPBC Act
- 27 threatened animal species BC Act & EPBC Act
- 3 endangered ecological communities BC & EPBC Acts

Visiting a Gazetted Aboriginal Area co -managed by Gamilaraay-NPWS

19 August 2019

‘Clear association of Aboriginal people with the land’

‘You can see thousands of years of activity and management’

Photo : Ukerbarley 2019 LH

Mammals Reptiles Amphibians

- 34 native mammal species including including 17 species of bat:
- 40 reptiles, at least 19 frog species
- More than 27 species listed as endangered, vulnerable

Threatened species include Squirrel glider, Pygmy possum, Spotted-tailed quoll, Corbens Long-eared bat, Black-striped

wallaby, Pale-headed snake & Koala



Pilliga Mouse, *Pseudomys pilligaensis* - IUCN Red List of Threatened Species



Birds

Over 230 recorded species including threatened woodland birds:

Grey-crowned babbler, Speckled warbler, Varied sitella, Brown tree-creeper, Little lorikeet, Turquoise parrot, Glossy black cockatoo, Diamond firetail, Masked owl, Barking owl & **critically endangered Swift parrot & Regent honeyeater**

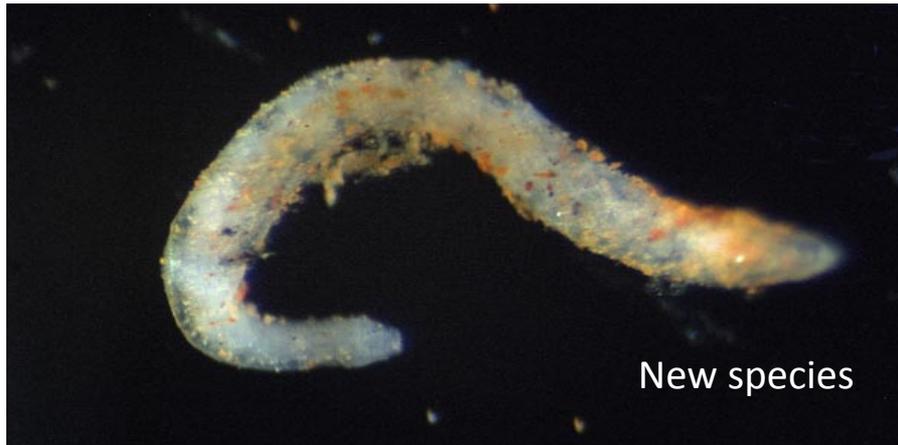
Photo of Babblers by Gary Dunnett, Pilliga August 2019

Butterflies, Insects & Stygofauna (& Entomologists!) – vanishing species! ...And yet there are still new species of insects and invertebrates to discover

Sixty-three butterfly species including seven species which meet on hilltops & fire-towers for their romances!

Stygofauna

'The discovery of bizarre new groundwater species' **Australian Geographic** 2013



Geoscapheus dilatatus is an endearing native burrowing cockroach which looks after its young in a burrow for about a month, delivering fragments of leaves for it's babies to eat ! Australian species do not carry disease & are important recyclers, aiding nature

Department of Planning, Industry and Environment Assessment Report 2020:iv states that the Narrabri gas project:

'has been designed to minimise any impacts on the region's significant water resources, including the Great Artesian Basin, the biodiversity and heritage values of the Pilliga State Forest and the health and safety of the local community';
'would not result in any significant impacts on people or the environment'

Of the 27 threatened animal species (BC Act & EPBC Act) – are vulnerable by:

- 13 are hollow dependent – i.e. they require mature age trees with hollows
- 16 threatened by feral predators
- 23 species are threatened by inappropriate fire

The Pilliga – to Preserve or Plunder?

No recognition of landscape connectivity

Complexity of land tenures & management

Serious Fragmentation of forest

Roads, new fenced areas & developments,
pipeline, potential rail line

CSG & long-wall coal mining

- tracks, roads, pads, pipeline
- chemical spills & air pollution
- methane gas pollution
- Expansion of all mining activities

Depletion & poisoning of water

- In The Pilliga water recharge depleting
- the Great Artesian Basin

Fire

- increased frequency, intensity with
- longer seasons and unpredictable behaviour

Dark Sky & Light Pollution

- Impacts on behaviour & survival of many species
- Impacts on astronomy - Siding Springs Observatory
- Impacts on tourism - Warrumbungle NP is a declared Dark Sky park



Koala listed as a threatened species – once populous in The Pilliga – now clinging on in severely reduced numbers

In The Pilliga clearing & fragmentation by the Narrabri CSG project is assessed as having significant impacts that include increased fire & access for feral animals - risks affecting twenty seven endangered or vulnerable species & three endangered ecological communities (Federal Govt. assessment). This is unacceptable especially within the context of a bioregion that has been largely cleared

Fragmentation is recognised as a key threatening process (KTP) under the Biodiversity Conservation Act.

For example, fragmentation increases habitat suitability for Noisy Miners – their aggression towards other birds is another Key Threatening Process under the Biodiversity Conservation Act



The Narrabri gas development impacts on essential ecosystem processes far beyond the immediate gas project footprint. Dispersed impacts include:

- Disruption of groundwater flows and
- Contamination of ground and surface waters on a vast landscape scale;
- Fragmentation of habitat connectivity across at a vast landscape scale;
- Increased potential for large scale fire events on a vast scale
- 5 Listed threatened plant species are particularly vulnerable to frequent fires

(BC Act & EPBC Act)



Photo: Pilliga echidna L. Hosking

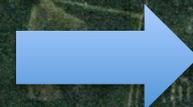


Santos flare at Bibblewindi, Pilliga
Flares permitted during total fire ban periods

Photo March 2019, JT

The Pilliga – our public forest being destroyed by cumulative mining developments

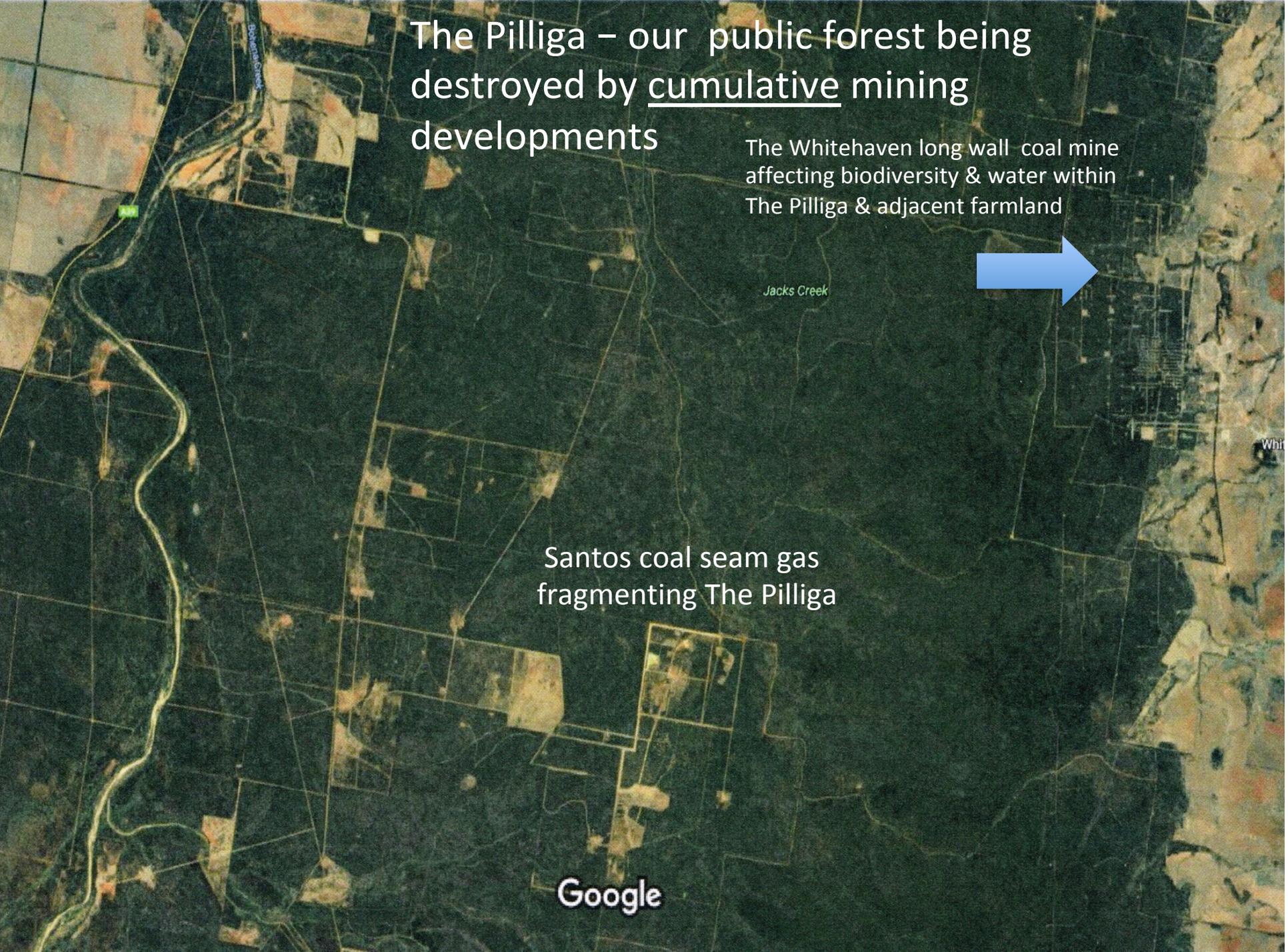
The Whitehaven long wall coal mine affecting biodiversity & water within The Pilliga & adjacent farmland



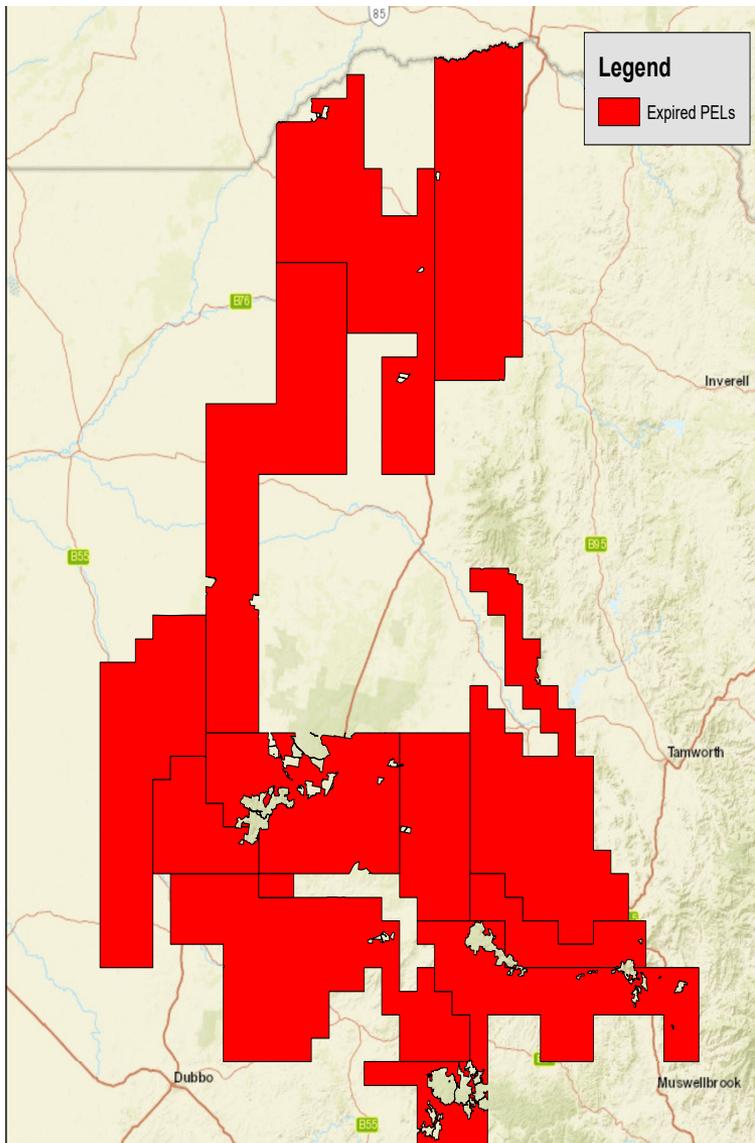
Jacks Creek

Santos coal seam gas fragmenting The Pilliga

Google



Coal seam gas threatens water and food resources



Petroleum Exploration Licences (PELs)

- **CSG titles over north-west NSW create massive uncertainty for farmers**
- 11 CSG licences covering 5.37 million hectares, from Murrurundi to the Qld border.
- Prime agricultural land and productive groundwater at risk
- The NSW National Party annual conference at Inverell 27 June 2019 passed a motion calling for these licences to be extinguished as soon as they expire.
- If they are not addressed, these 'zombie' licences may form a platform for Santos & other companies to roll out seven vast gasfields across north-west NSW.
- Many communities and shires, so concerned by water contamination & depletion, have made gas free declarations e.g. Moree Shire.

Respect for Traditional Custodians and
Respect for clean air +dark skies +intact forest +clean water
= inter-connected healthy biodiversity & communities 😊
The Pilliga is a National jewel too precious to plunder
Protect The Pilliga

'It nourishes my being to be here and to share this place with friends'

The Pilliga with the Warrumbungle Dark Sky National Park and Siding Springs Observatory