22 May 2017

Ms C. McNally
Secretary
NSW Department of Planning & Environment
Level 22, 320 Pitt St, Sydney 2000

Submitted via majorprojects.planning.nsw.gov.au

Dear Ms McNally

Re: SSD 6456 Narrabri Gas Project

BirdLife Australia is an independent science-based conservation organisation with over 100,000 supporters throughout Australia. We have an extensive ongoing program of bird conservation research and a range of citizen science projects that engage thousands of Australians. Our primary objective is to conserve and protect Australia's native birds and their habitat.

BirdLife Australia is opposed to the Narrabri Gas Project (**the Project**) because it is likely to have a significant impact on the integrity of the Pilliga Key Biodiversity Area (see below).

BirdLife Australia finds that the EIS for the Project greatly underestimates the potential impacts of the Project on the ecology of the Pilliga and that the Project is likely to have a significant impact on the area's biodiversity, including threatened and declining woodland birds.

Irrespective of any mitigation and offsetting measures, the Project will cause irreversible fragmentation of the largest remaining, relatively intact block of dry sclerophyll forest and woodland in eastern Australia; an area of very high conservation value.

The Project will have clearly unacceptable environmental impacts and must not proceed.

If you have any questions relating to this submission, please contact BirdLife's Conservation Manager, Dr Jenny Lau via jenny.lau@birdlife.org.au.

Yours sincerely

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Head of Conservation

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Global conservation significance of the Pilliga

The Pilliga is a globally significant biodiversity hotspot. It is the largest remaining, relatively intact block of dry sclerophyll forest and woodland in eastern Australia. It is a crucial refuge and hotspot for a suite of threatened and declining flora and fauna, including woodland birds.

In 2009, BirdLife Australia and its partner BirdLife International designated the Pilliga as one of Australia's 314 Important Bird Areas, now known as Key Biodiversity Areas (KBA). KBAs are areas recognized as globally significant for conservation, the most important places left for life on earth. To qualify as a KBA each site must meet at least one of five criteria developed by BirdLife International.

1. Threshold numbers of globally threatened species
2. Representative populations of restricted-range species
3. Ecological integrity
4. Biological processes
5. Irreplaceability through quantitative analysis.

The Pilliga was designated as a KBA for meeting criterion one for both Painted Honeyeater and Diamond Firetail; species which are listed as Vulnerable and Near-Threatened, respectively, on the IUCN's Red List of threatened species. Other species such as Barking Owl and Turquoise Parrot have clear regional significance and records of EPBC-listed species, such as the Critically Endangered Regent Honeyeater, in the Pilliga further illustrate the high conservation value of the area.

BirdLife Australia's Atlas of Australia's Birds has records of almost 40 woodland-dependent bird species in the broader Pilliga area, including many considered to be threatened and/or declining (Table 1); 18 of these have been recorded within the Project boundary.

The Pilliga is also recognised as part of the 'Brigalow North and South' Biodiversity Hotspot, one of 15 National Biodiversity Hotspots in Australia and only 2 in NSW. The biodiversity hotspot concept identifies "exceptional concentrations of endemic species that are undergoing exceptional loss of habitat".

The Pilliga is vast and remote. Much of it is inaccessible and difficult to survey; consequently BirdLife Australia considers it to be under-surveyed.

We strongly disagree with the assertion in the EIS Executive Summary, Terrestrial and aquatic ecology, that the "ecology of the project area is well understood". While there is overwhelming evidence that the Pilliga is a biodiversity hotspot of high conservation value, our understanding of the distribution and ecology of a broad range of species within the Pilliga, including birds, is poor.

Table 1: Woodland-dependent bird species recorded in the Pilliga in Atlas surveys conducted between 1998 and 2009. Asterisks indicate species recorded within the Project area. Threatened species listed under state (*TSC Act 1995*) or federal (*EPBC Act 1999*) legislation indicated in bold.

Species
***Brown Treecreeper**
*Jacky Winter
Yellow-tufted Honeyeater
***Speckled Warbler**
***Grey-crowned Babbler**
*Brown-headed Honeyeater
*Blue-faced Honeyeater
***Restless Flycatcher**
Dusky Woodswallow
***Little Lorikeet**
***Turquoise Parrot**
*White-browed Babbler
*Apostlebird
*White-bellied Cuckoo-shrike
*Crested Shrike-tit
Western Gerygone
*Varied Sittella
*Red-capped Robin
Black-eared Cuckoo
Regent Honeyeater
***Diamond Firetail**
***Black-chinned Honeyeater**
Hooded Robin
Fuscous Honeyeater
*Spotted Quail-thrush
Chestnut-rumped Heathwren
Painted Honeyeater
Painted Button-quail
Scarlet Robin
Southern Whiteface
Square-tailed Kite
Barking Owl
Crested Bellbird
Superb Parrot
Gilbert's Whistler
Bush Stone-curlew
Flame Robin

Note: This list only includes bird species considered to be woodland-dependent. It does not represent the full diversity of birds recorded in the Pilliga.

Project impacts on conservation values

There is little evidence to support the stated conclusion that the Project is unlikely to have a significant impact on threatened flora, threatened fauna or threatened ecological communities, including Matters of National Environmental Significance (MNES) such as Painted Honeyeater and Regent Honeyeater.

Clearance of more than 1,400 hectares of native vegetation for the Project is likely to have significant direct and indirect impacts on a suite of threatened and declining woodland-dependent birds. This includes Diamond Firetail, Barking Owl, Painted Honeyeater and Turquoise Parrot.

In particular, fragmentation effects are not adequately considered in the EIS but are likely to have a significant impact on threatened woodland birds.

While the removal of in excess of 1,400 hectares of native vegetation is in itself a significant loss in a region that has been so heavily cleared for agriculture, of serious concern is that this clearing would occur as patches around each of the 425 well pads, with linear strips along the gas pipes between pads and an extensive road system within the Project area.

Piecemeal fragmentation of the Project area will irreversibly alter the ecology of the area and provide new opportunities for invasive species, including predators such as cats and foxes.

The extensive edges around each patch will facilitate an increase in Noisy Miners across the Project area; 'Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala*' is recognised as a Key Threatening Process under the NSW *TSC Act 1995*. Noisy Miners are known to penetrate and dominate (i.e. exclude other birds) up to 300m into woodland from edges. Given the proposed density of well pads across the Project area, there is potential for Noisy Miners to exclude other woodland birds, including threatened and declining species, across much of the Project area. Of particular concern is the potential impact on Painted Honeyeater – a MNES and Diamond Firetail.

The extensive edges will introduce microclimatic changes, altering the distribution and abundance of plant species, and affecting habitat availability for declining woodland birds.

Edge effects will occur irrespective of any remediation efforts (e.g. revegetation of ¾ of the area around well pads) as it will take many decades for the vegetation to recover to the point where edges are reduced. There is also a high degree of uncertainty around the likely success of any revegetation efforts and, if successful, whether the revegetated area will have equivalent habitat structure and species diversity and abundance as the surrounding vegetation.

These fragmentation impacts will occur irrespective of any amendments to the layout of the gas wells or other mitigation measures, making it inevitable that the Project will have a significant impact on the internationally important conservation values of the Pilliga.

Unknown project layout makes impact assessment highly uncertain

It is not possible to determine the full extent of the Project's impact on threatened species because **the final layout of the well pads is unspecified**. This means it is impossible to determine:

- the extent of vegetation of each ecological community that will lost – making it difficult to assess the impact of habitat loss on individual species.
- the number of mature and/or hollow-bearing trees to be removed – making it difficult to assess the impact of the Project on hollow-dependent species. However, it is alarming that the EIS states that an estimated 10,000+ hollow bearing trees will be lost across the Project area without having a significant impact on a broad range of hollow-dependent species.
- the extent and location of edges between cleared and uncleared vegetation – making it difficult to assess the likely impact of Noisy Miners and other edge effects.

The estimated 10,000+ hollow bearing trees that will be lost across the Project area are likely to have a significant impact on hollow-nesting species such as Barking Owl and Turquoise Parrot. It is highly unlikely that the impact of this loss could be offset, with recent studies indicating that nest box projects fail to provide alternative nesting sites for threatened species (Lindenmayer 2017).

Fire risk underestimated

The Project represents a very severe fire risk as it will dramatically increase ignition sources and introduce a highly flammable gas into a very fire prone environment. The full risks to native vegetation from an increasing and potentially catastrophic fire risk in the Pilliga are unacceptable.

Precedence leading to cumulative impacts

In addition, the Project sets precedence for other developments in the gas fields. With a significant investment in gas infrastructure, including pipeline and export facilities, it is highly likely that other developers will seek to expand their gas field operations in the Pilliga.

Reference

Lindenmayer, D. B., Crane, M., Evans, M., Maron, M., Gibbons, P., Bekessy, S., and Blanchard, W. 2017 *Anatomy of a failed offset.* Biological Conservation 2017; 210(A):286-292.