

This document is substantially the same as that submitted to the Commonwealth Department of the Environment and Heritage on 27th February 2009. Since that date some details have been updated and revised.

Paola Cassoni
Bimblebox Nature Refuge
Glen Innes Station
ALPHA 4724
P: 07-4985 3474
E: bimblebox@gmail.com

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The Director
Referrals Section (EPBC Act)
Approvals and Wildlife Division
Department of the Environment and Heritage
GPO Box 787
CANBERRA ACT 2601

Dear Director

Submission on Referral: Waratah Coal Incorporated/Mining/Alpha in the Galilee Basin to Abbot Point/QLD/Establishment of Galilee Coal Mine and Associated Infrastructure (Ref: 2009/4737).

Proponent making the referral: Waratah Coal Incorporated

Please consider my comments on the above referral from Waratah Coal Incorporated (WCI) for approval to develop a large open-cut coal mine, railway and port in central Queensland. I write as a co-owner of 'Glen Innes', covered by the Bimblebox Nature Refuge Agreement (Lot 4, Plan BF22, Parish of Saltbush, County of Jericho). This nature refuge is largely encompassed by the proposed mine site, but never mentioned by WCI in its referral documents.

My submission provides substantial evidence that the proposed WCI mine is a serious and major threat to the ecological values of Bimblebox Nature Refuge and the broader regional environment.

LEVEL OF ASSESSMENT

While this submission focuses on the mine proposed by WCI, the larger project involving rail and port development is of such a scale and potentially impacting on so many Matters of National Environmental Significance and other components under the legislation, that there is a strong case for the Minister to require a Public Commission of Inquiry and/or a Strategic Assessment under section 146 of the EPBC. A broader inquiry is warranted to allow a proper review of the probable and potential impacts of the mines proposed for the Galilee Basin. Compared with, for example, an EIS assessed by the Queensland Government, an inquiry

would be able to better uncover the full range of potential and likely impacts of the proposed development. It would also provide an appropriate time-frame for the public to present their concerns.

The matters raised below could only be fully and properly addressed by a public inquiry. Certainly they demonstrate why the current proposal by WCI must be subject to the most rigorous review.

OPENING COMMENTS

We can learn from the recent Queensland floods and Victorian bushfires that severe weather conditions and associated disasters will be more common in the future, given current climate change predictions. What we now consider ‘acceptable’ risk and ‘sufficient’ conservation may become seriously inadequate as changes in average temperature and rainfall put new stresses on regional ecosystems. Therefore, while these comments are framed in terms of the EPBC Act, to ignore the broader pressures on ecosystems and species would be to fail badly as guardians of the fragile Australian environment. The absurdity of the case at hand is that it would see vital ecological areas destroyed for the sake of digging up more climate-changing coal.

The totality of the impact of all planned and current mining activities, transport infrastructure and related industries must be considered to determine their combined impact on the region. Piecemeal consideration of isolated cases can only lead to inaccurate assessment. In particular, tenement 1040 held by WCI directly adjoins those held by Hancock Prospecting Pty Ltd. The mines proposed by these two companies alone would result in a combined mine area of over 60 000 ha. The total area taken up by rail and port facilities of both projects would also be significant.

The necessity of integrated regional risk assessments is strongly urged by eminent scientists and organisations. The CSIRO in their submission to Infrastructure Australia recommends the “development and application of models to predict the cumulative, citywide and region-wide spill-over impacts (benefits and costs) of infrastructure projects”.

[www.infrastructureaustralia.gov.au/public_submissions/published/files/451_csiro_SUB.pdf (p.7)]

The CSIRO identifies water quality, energy, greenhouse gas emission, and social and economic implications as requiring system-wide quantitative assessment. All of these issues are highly relevant to the mines and related infrastructure proposed for the Galilee Basin coal deposits.

CONTROLLING PROVISIONS

It is of deep concern that in their referral document WCI provides little to no detail of the anticipated impact on the flora and fauna of the mine site, or measures proposed to avoid or reduce this impact. Rather, they claim that an Environmental Management Plan will be developed during the EIS phase to “address the relevant risks associated with the construction, operation and decommissioning phases of the project” (p.31). This is inadequate for a number of reasons, not least of which is the fact that they have failed to

provide crucial information for scrutiny under the EPBC Act during this referral process. The lack of attention to the fate of flora and fauna in the current referral is a major omission, given that there is a number of vulnerable and threatened species within the proposed mine site. Accordingly, it would be appropriate for WCI to re-submit a referral with such information included.

Bimblebox Nature Refuge

A brief history of Bimblebox Nature Refuge (BNR) is needed to understand why it must be considered a significant ecological entity. In the early 1980s vast areas of Queensland's grazing lands were being cleared at an ever-increasing rate. In the year 2000 when very few uncleared properties remained, 'Glen Innes' was purchased by several concerned families, with the assistance of about \$300 000 from the Federal Natural Reserve System program. A permit had been approved to clear more than half the property, so its purchase effectively secured it as vital remnant native bushland.

In 2003, the Bimblebox Nature Refuge Agreement was signed with the state government to "permanently protect" the conservation values of Glen Innes. This perpetual Nature Refuge Agreement (category VI Protected Area under the IUCN classification system) covers the property's entire 7 912 ha. A minor portion of Glen Innes had been cleared at a previous time, so that 7 632 ha remains as original vegetation.

During the last five years, BNR has become host to a number of long-term research projects conducted by the CSIRO, DPI&F, Birds Australia, EPA and the Queensland Herbarium. (See Appendix A for details of scientific studies related to BNR.) It is also a test case for sustainable grazing, since the property is carefully managed with a small herd of beef cattle. Profits are returned for native habitat rehabilitation and conservation.

WCI fails to mention BNR anywhere in the referral document. There is no indication given that the company's "identified coal resources" underlie the vast majority of BNR (Lot 4, Plan BF22). The referral states that the proposed mine is "near Kiora" (section 1.3, p.6) which is a property adjoining BNR. It is claimed that the "majority of the proposed mine and water supply pipeline component of the project study area is located on cleared farmlands of leasehold tenure devoted to beef production" (section 3.3 (j), p.30). However, it is clear that a significant portion of the proposed mine area coincides with BNR, which is most certainly uncleared and home to significant native animal and plant communities. (See Appendix B; map 1: Location of Bimblebox Nature Refuge in tenement 1040; and map 2: Waratah's identified coal resources.)

WCI has had to negotiate with the Queensland Government in relation to its Exploration Permit for drilling within BNR (details available on request). Clearly WCI must be aware of BNR's status as a Category C protected environmental area but this information has not been included in their referral. This serious omission bears the question of whether, unintentionally or not, other environmental and heritage protected areas have also been left out of the WCI referral.

Fauna within BNR

Both the CSIRO and Birds Australia have conducted fauna surveys on Bimblebox Nature Refuge (BNR). These surveys found the following significant species:

Scientific name	Common name	Type of Presence
<i>Chrysococcyx basalis</i>	Horsfield's bronze-cuckoo	Migratory
<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike	Marine
<i>Hirundo nigricans</i>	Tree martin	Marine
<i>Manorina flavigula</i>	Yellow-throated miner	Endangered, JAMBA
<i>Merops ornatus</i>	Rainbow bee eater	JAMBA
<i>Sminthopsis murina</i>	Common dunnart	Conservation significance #
<i>Lagorchestes conspicillatus</i>	Spectacled hare-wallaby	Conservation significance #
<i>Vespadelus baverstocki</i>	Inland forest bat	Conservation significance #
<i>Climacteris picumnus</i>	Brown treecreeper	Conservation significance #
<i>Chthonicola sagittata</i>	Speckled warbler	Conservation significance #
<i>Melanodryas cucullata</i>	Hooded robin	Conservation significance #
<i>Pomatostomus temporalis</i>	Grey-crowned babbler	Conservation significance #
<i>Phascolarctos cinereus</i>	Koala	Conservation significance # ^

As listed in the Queensland EPA technical report on vertebrate fauna species of conservation significance recorded in the Desert Uplands regional ecosystems.

[See www.epa.qld.gov.au/media/nature_conservation/biodiversity/desert_uplands_conservation/Table4-6.pdf]

^ Observed by owners and visitors.

Other threatened species likely to occur with BNR according to a Protected Matters search for the exact area of the property, are listed below:

Birds

Threatened Species	Status	Type of Presence
<i>Geophaps scripta</i> Squatter pigeon	Vulnerable	Vulnerable
<i>Neochmia ruficauda ruficauda</i> Star Finch (eastern), Star Finch (southern)	Endangered	Species or species habitat likely to occur within area
<i>Poephila cincta cincta</i> Black-throated Finch (southern)	Endangered	Species or species habitat likely to occur within area
<i>Rostratula australis</i> Australian Painted Snipe	Vulnerable	Species or species habitat may occur within area

Migratory Birds

<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Species or species habitat likely to occur within area
<i>Hirundapus caudacutus</i> White-throated Needletail	Species or species habitat likely to occur within area
<i>Ardea alba</i> Great Egret, White Egret	Species or species habitat likely to occur within area
<i>Ardea ibis</i> Cattle Egret	Species or species habitat likely to occur within area
<i>Gallinago hardwickii</i> Latham's Snipe, Japanese Snipe	Species or species habitat likely to occur within area
<i>Rostratula benghalensis s. lat.</i> Painted Snipe	Species or species habitat likely to occur within area
<i>Apus pacificus</i> Fork-tailed Swift	Species or species habitat likely to occur within area

Vegetation within BNR

Prominent groundcover species on BNR include desert bluegrass (*Bothriochloa sp.*), black spear grass (*Heteropogon contortus*), wire grass (*Aristida sp.*), kangaroo grass (*Themeda australis*), spinifex (*Tridodia sp.*), native millet (*Panicum sp.*), golden beard grass (*Chrysopogon fallax*), amongst other grasses and forbs. Unlike all neighbouring properties, management at BNR is targeted at keeping the occurrence of buffel grass (*Cenchrus ciliaris*) to a minimum. Buffel grass on BNR has generally only been found in disturbed areas, such as old stock and kangaroo camps, along tracks and around stockyards – and more recently around coal exploration drilling sites.

The prominent arboreal communities on BNR as found by on-ground assessment, are listed below. Each of these communities is representative of a regional ecosystem, two of which are considered “of concern”.

Regional Ecosystems

Code	Ecosystem name	Management status (Aug. 2003)	Biodiversity status (Nov. 2001)
10.5.12	Poplar box open-woodland on sand plains	Not of concern	No concern at present
10.5.5	Silver-leaved ironbark open-woodland on sand plains	Not of concern	No concern at present
10.3.27	Poplar box woodland with ground layer of tussock grasses	Not of concern	Of concern
10.3.12	Fringing (bloodwood) woodlands on sandy alluvial terraces	Not of concern	Not of concern
10.3.14	River red gum and/or coolabah open-woodland along channels and on floodplains	Not of concern	Of concern

http://www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/desert_uplands/

There is also around one hectare of Brigalow (*Acacia harpophylla*), listed as an endangered ecological community, in the north east corner of BNR. Individual Brigalow trees are also scattered through some of the box woodlands on BNR. Unfortunately, there are very few stands of Brigalow remaining in the region. One nearby patch of Brigalow about one kilometre south of BNR, on the neighbouring property Lampton Meadows, is also in the immediate path of the proposed mine.

Impacts on vegetation

As mentioned above, WCI provides little to no detail of any proposals to reduce or mitigate negative impacts, other than the very general comment in section 4 of the referral that: “vegetation clearing will be undertaken in accordance with best practice to minimise the impact on flora and fauna species...” (p.31). Since large areas of vegetation would be cleared, this statement can be seen as little other than farcical. Those of us who have lived with the consequences of land clearing know full well that habitat removal is the end game. From first hand observation, when habitat is destroyed so too are the lives of those within it. For the mine site alone, some 8 500 ha would be cleared, including 7 632 ha of intact woodland on BNR.

Also significant would be the spread of weeds and the vulnerability of native grass communities. While many of the commonly recognised weeds may be mentioned later in an EIS, serious consideration must be given to buffel grass (*Cenchrus ciliaris*). Buffel is the dominant exotic pasture grass in the Desert Uplands and thus is not currently listed as a weed. However, its domination has dire consequences for native plants and animals. It very effectively out-competes most other grasses, and is a strong colonising plant following soil disturbance. In Queensland pro-buffel cattle interests dominate this discussion, but in the Northern Territory buffel grass is regarded as an aggressive weed and removed from key locations, such as around the base of Uluru.

[For details see: http://www.weedsrc.org.au/documents/wmg_buffel%20grass.pdf]

The managers of BNR have specific management strategies in place to control the spread of buffel grass. The rich composition of native grass species within BNR is a rare and valuable ecological asset. The likely major impact on local grass species from the proposed mine should be specifically addressed by WCI.

Exploration on BNR

Around May 2008, WCI began exploration on tenement 1040 where Bimblebox Nature Refuge (BNR) is situated. An Environmental Management Plan (EMP), which included provisions added by the BNR leaseholders, was signed between the EPA and WCI. This plan was intended to protect the ecological values of, and limit damage to, the nature refuge during the mine exploration phase.

In December 2008 an EPA officer made an inspection of several exploration sites at BNR. He recorded a range of violations of the EMP, including oil spills and significant track damage from blade clearing. The lack of care shown at BNR during exploration by WCI raises questions as to how well the company would comply with future provisions, such as

those included on an EIS. Two reports of impacts from exploration on BNR are included in Appendix C.

Site rehabilitation

Section 2.3.6 (p.14) of the Initial Advice Statement (IAS) by WCI claims that:

It is intended that all mining disturbance will be rehabilitated as soon as possible after mining... The post mining land use aim is to return disturbed areas to bushland which may support limited grazing in the longer term. Landform stability is intended to be achieved through the establishment of a diverse vegetative cover that is self-sustaining.... all final voids will remain open and become water storages collecting runoff from the void catchment areas.

Given the semi-arid nature of the Desert Uplands, returning “disturbed areas to bushland” is improbable without a great deal of time and labour intensive work. Such a commitment is highly unlikely given the enormous size of the land areas to be affected. More probably, these would be invaded and dominated by buffel grass. Our experience has shown that control of buffel grass on a large scale is practically impossible using currently available methods.

Given that the massive pits or “voids” would remain open and collect water, important questions need to be answered. Specifically: How much water would the voids be taking out of the local environment? What are the displacement effects of this water when taken from local sustainable uses? What would the effect be on the local ground water systems from such large incisions in the land? What are the risks of acidic water and the resulting dissolved heavy metals infiltrating other parts of the environment? Recent news reports on the contamination of surrounding land and waterways from the flooding of open-cut mines and tailings dams demonstrate the consequences that may be unleashed from these large developments (see <http://www.news.com.au/couriermail/story/0,23739,25111319-3102,00.html>). This concern is even more vital when future climatic conditions cannot be assumed to fit within a 10-year, or even 100-year, average range.

Protection for BNR

As one of the few uncleared properties in the region, and with its strong research and conservation focus, BNR is a unique ecological entity. It stands out as one of the very few properties in central-west Queensland able to offer trials of sustainable cattle grazing within intact bushland. It also has the potential for income-generating alternatives such as eco-tourism. The issue of food security cannot be dismissed either, as viable farming and grazing land becomes more precious as the results of years of unsustainable practices across much of Australia.

The WCI tenements and applications in the Galilee Basin cover a total area of 1 525 000 ha (Referral, p.8; Initial Advice Statement, p.1). I strongly urge that consideration be given to the exclusion of BNR and other conservation worthy areas from any future mining activities. Since BNR comprises around half of one percent of WCI’s total tenements and application areas it would be reasonable to ensure that the nature refuge was protected from destruction due to mining. So far, WCI has given no suggestions for the protection of the ecological values of BNR. To the contrary, in the current referral WCI has ignored its existence.

Timetable

The project milestones presented in the table on p.19 of the Initial Advice Statement (IAS) are of great concern. WCI anticipates completion of the EIS and development approval processes by mid 2011, the commencement of onsite construction in the second half of 2011, and the first shipment of coal two years after that. A thorough EIS would need to extend at least several years past the date of the first anticipated coal shipment. The proposed timeline is totally inadequate to allow for an ecological survey across a number of seasons and then to uncover the full range of likely impacts.

Water sources

WCI states that “some 7 500 ML per annum of raw water” (Referral pp.8-9; IAS, p.12) would be required by the proposed mine and lists various potential sources:

- Local bores
- Mine dewatering
- “a structure on the Belyando River”
- Lake Dalrymple on the Burdekin River

Use of water from these sources would be of extreme concern. While the quantity estimated by WCI is significant in itself, it is the total impact of water withdrawal of all mine developments in the region that must be considered. The combined demand from the WCI mine and that of the parallel mine proposed by Hancock Prospecting Pty Ltd, would be close to 20 000 ML per annum. The impact this would have on other water uses is potentially critical. The proposed water usage must be thoroughly investigated, with consideration given to the extreme climatic/rainfall variations that occur over time. While Queensland has received more than its average rainfall in the past year, severe droughts will inevitably occur again.

The site of the proposed mine is in the recharge area for the Great Artesian Basin, which has been widely recognised as needing greater care. Only in recent years has anything like a reasonable understanding begun to emerge of the operation of this huge and amazing water system. It would be impossible to ensure adequate protection and management of the artesian basin, if a massive new development with the potential to negatively affect the basin was allowed, before we understood the system and how it would be affected. The current push for landholders to tap their bores would become meaningless and current management plans thrown into disarray if any significant amount of water was extracted for use by the mine.

On p.31 of the WCI referral, it is stated that detailed studies will be made of “surface water hydrology and water quality”. There is in fact very little surface water in the proximity of the mine site. The greater issue regarding water use is the major impact the mine would have on ground water, in a district with a grazing industry heavily reliant on bore water. The amounts of artesian water drawn for residential and livestock use are trivial compared with the quantities the proposed mines in the Galilee Basin would draw. Coal geologists have been known to say that “anyone who claims to know what is happening with groundwater is lying”. Clearly, careful consideration must be given to the amount of water that the proposed mine would extract from the Great Artesian Basin, and to the effect of large open-cut pits collecting ground water.

Prudent management of the Great Artesian Basin demands that the WCI proposal not be allowed to proceed unless and until its potential impact on the underground water system is adequately researched. In particular, water should only be drawn from local bores if the likely impact is properly understood and documented.

Stock Route Network

The mine and associated rail development would inevitably have a severe impact on the local Stock Route Network throughout the Barcaldine and adjacent regional council areas. This network is currently home to rare and endangered fauna and flora. It also has important cultural heritage values.

The stock routes were established over a century ago when, by necessity, transport routes were built along geographical lines, rather than cutting through them. Ever since the routes have been subject to various burning and grazing regimes that today provide an invaluable contrast to adjacent pastoral land.

Large-scale mining would disrupt this network, which in many places serves as a critical source of connectivity for fragmented ecosystems, providing corridors for the movement of wildlife and plant species. Inevitably, the WCI project would cause increased degradation of local stock routes.

The Desert Uplands

The plan by WCI for a mine, railway and port is one of many gas and mineral extraction projects proposed for the Galilee Basin. This vast inland coal-bed is most easily exploited in the portion that coincides with the south-western half of the Desert Uplands Bioregion.

This bioregion is recognised by the Queensland EPA as home to a rich diversity of ecosystems and is classified an Australian Biodiversity Hotspot. As such it is an area of national environmental significance. The basic selection criteria for Biodiversity Hotspots reveals that the Desert Uplands is home to many endemic species and that there are many existing threats to biodiversity, which a large open-cut mine would severely exacerbate. [See http://www.hsi.org.au/editor/assets/admin/HSISpecialTB_Jan09.pdf]. The Australian Government Natural Resource Atlas reports 29 vulnerable and 14 endangered regional ecosystems. Twenty-one species are listed as threatened, nine endangered and twelve vulnerable in the Desert Uplands Bioregion. However, this is unlikely to represent all ecosystems and species threatened by the proposed mine, as demonstrated in the following point.

A recent CSIRO study of the Desert Uplands' vertebrate fauna described the region as both a barrier and refuge for the Torresian fauna of the coast and the Eyrean fauna of the inland. Notably, the study revealed a stunning paucity of information. The author of the study, Dr. Alex Kutt, found that "the vertebrate fauna of Queensland's tropical savannas are almost entirely unknown and unsurveyed" and commented that this lack of data is "quite inexplicable given the mounting need to find an effective balance between the twin land-management goals of economic viability and nature conservation".

[http://savanna.cdu.edu.au/education/alex_kutt.html]

The Kutt study discovered two previously unknown reptile species (*Ctenotus terrarossa sp. nov* and *Lerista sp.nov*) as well as: “a number of unexpected finds and range extensions including Spinifexbird and Painted finches, rodents and dasyurids such as the Lakeland Downs mouse *Leggadina lakedownensis*, Desert Mouse *Pseudomys desertor* and Pebble-mound mouse *Pseudomys patius*, Common Dunnart *Sminthopsis macroura* and the Julia Creek Dunnart *Sminthopsis douglasi*, and reptiles like the Brigalow Scaly-foot *Paradelma orientalis* and the Centralian Blue-tongue lizard *Tiliqua multifasciata*”.

These recent discoveries by the CSIRO suggest that any current decision relating to the impact of mining in the Desert Uplands would be made on incomplete information. Based on the evidence of recently discovered species, the WCI mine would be likely to impact on rare and endangered species not yet discovered.

The Australian Natural Resources Atlas includes the following descriptions of particular rare and threatened species in the Desert Uplands:

The skink (*Ctenotus capricorni*) is regionally endemic and the spectacled hare-wallaby (*Lagorchestes conspicillatus*) occurs uncommonly across the bioregion (Morton, *et. al.*, 1995). Artesian mound springs in the bioregion support endemic species such as the fish red-finned blue-eye (*Scaturiginichthys vermeilipinnis*). The wetlands of the bioregion, including Lakes Buchanan and Galilee are of national significance for waterbird breeding (Sattler & Williams, 1999).

About 33 fauna species are listed as rare and threatened, of which the western quoll (*Dasyurus geoffroii geoffroii*) is presumed to be extinct. There has been substantial decline in some bird species such as the Gouldian finch (*Erythrura gouldiae*), red goshawk (*Ethrotriorchis radiatus*), star finch (*Neochmia ruficauda*) and plain wanderer (*Pedionomus torquatus*). For a list of rare and threatened fauna and fauna surveys refer to Sattler & Williams (1999).

[<http://www.anra.gov.au/topics/rangelands/overview/qld/ibra-deu.html>]

Considering the low level of baseline information, it is most unlikely that any flora and fauna survey conducted by WCI would uncover the breadth and complexity of the region's biodiversity. This would be especially difficult within the proposed time scale, with commencement of on-site construction by mid 2011 and exporting of coal by late 2013. Furthermore, due to the climatic variability of the region which ranges from periodic severe drought to occasional monsoonal flood, a thorough biodiversity assessment would be needed over a representative number of seasons. The issue of insufficient knowledge and understanding is confirmed by findings in the EPBC Act Protected Matters Report. Due to a lack of familiarity with the Desert Uplands ecology, the dangers to threatened species from the proposed mine are unlikely to be reasonably estimated.

As well as insufficient and incomplete surveying and reporting of the Desert Upland's ecosystems and species, there is an extremely poor level of protection of ecosystems and species within the region. According to the Australian Government's reported biodiversity assessment (available on the Australian Government's Natural Resource Atlas), only 2.3% of the Desert Uplands bioregion is held in conservation tenures, and less than one third of the region's ecosystems are represented in the region's two National Parks.

The Natural Resource Atlas describes how a range of factors contribute to the processes threatening species in the region. The factors include: feral animals, increasing

fragmentation, grazing, clearing, changed hydrology, pathogens, illegal trapping and collecting, weeds, fire management, salinity and pollution. Large scale mining in the Desert Uplands, as proposed, would exacerbate several of these key threatening processes, including increased fragmentation, clearing of vegetation, changed hydrology, and the proliferation of pathogens and weeds.

An important reason for undertaking a bioregional assessment of the potential impacts from mining is the likely changes to bioregional scale habitat, species abundance and distribution, and ecosystems from climate change. Considering that ecological boundaries are expected to shift under changed future climatic regimes, assessing a limited area is inadequate, as species distribution and habitat are likely to change over the coming decades.

Several projects currently operating in the Desert Uplands aim to protect and enhance the region's conservation values. Notable is the Biodiversity Stewardship program known as Landscape Linkages which rewards landholders who maintain continuous ground cover between the region's bordering ranges. (For further details see a letter from the Desert Uplands Committee; Appendix D.) A vast open-cut coal mine, as proposed, would seriously compromise the positive conservation outcomes from such programs.

The Desert Uplands also features the significant ecosystem of Lake Galilee, about 150 km north-east from the proposed mine site. As described by the Queensland EPA, this internally drained lakebed covers approximately 220 km² and along with the more distant Lake Buchanan, is a highly distinctive ecological feature of the Desert Uplands region. Lake Galilee is a wetland of national significance and an important breeding and nesting ground for a population of over 50 000 waterbirds. Its importance as a refuge for biological diversity in arid Australia has been recognised as such by the DEWHA [<http://www.environment.gov.au/biodiversity/publications/series/paper4/bio133.html>]. The WCI referral document fails to address potential and likely impacts on the ecology of the Lake Galilee catchment and particularly on migratory birds and resident water-dwelling wildlife.

In summary, WCI must be required to state specifically how the proposed mine would impact biological diversity in the Desert Uplands, and particularly that area in the south-east of the region where the mine would drastically change the local environment.

Pipeline, railway and port

This submission focuses on the mine site, but included here are some comments on the proposed water pipeline, railway and port. I understand that a submission from the Mackay Conservation Group contains many more details about these matters.

The IAS lists several important conservation areas that would be directly affected:

- Caley Valley Wetland, adjacent to the proposed coal stockyards (p.30)
- Scartwater Aggregation, a DOI on floodplain of the Suttor River, which the pipeline would cut through (p.31)
- Epping Forest National Park, which the pipeline would cut through (p.31)
- Great Barrier Reef World Heritage Area, to host proposed shipping activities (p.31)
- Great Barrier Reef Marine Park, to host proposed shipping activities (p.31)

Potential impacts on these crucial conservation areas must be considered thoroughly. The Caley Valley Wetlands would be particularly threatened by the coal stockyards, which are likely to seep acidic water carrying heavy metals. The construction of the pipeline through the Scartwater Aggregation and Epping Forest National Park would cause major disturbance during construction and permanent disruption to local ecological values.

WCI claims that their rail options would not transect any “wetlands of international significance (i.e. Ramsar listed), nature refuges, national parks or conservation parks” (IAS p.31). This has been extremely difficult to substantiate given the vague descriptions of the proposed rail lines provided in their documents. However, I have received information from the Mackay Conservation group that rail line option one goes close to or through:

- Eaglefield Creek Nature Refuge (includes remnant Brigalow)
- Black Mountain Nature Refuge (habitat for the vulnerable *Croton magneticus*; potential habitat for the rare Black-chinned honeyeater *Melithreptus gularis* and the rare reptile *Anomalopus brevicollis*)
- Mount Pleasant Nature Refuge (suitable habitat for Squatter pigeons and Black-chinned honeyeaters)
- Abredeem Nature Refuge (important wildlife corridor)
- Homehaven Nature Refuge (remnant eucalypt and dry vine forest)

WCI concede that their proposed water supply pipeline would go through Epping Forest National Park (IAS, p.31) which is the *only* remaining native habitat of the endangered Northern Hairy Nose Wombat. The construction of a pipeline through this precious habitat would obviously create significant disturbance for the remnant wombat population. Furthermore, the existence of a pipeline would inhibit the movement of many fauna species. WCI has failed to provide any details of how they intend to avoid or reduce such impacts.

The way in which WCI has proposed a pipeline directly through a vital habitat (apparently because this is the shortest route between water source and mine site) demonstrates a reckless approach to endangered wildlife. This careless approach is consistent with a company that sought approval for a port at Shoalwater Bay.

Climate change

Overwhelming much of the detail in the WCI referral is the climate change imperative. We have reached a level of maturity in our understanding of extractive and consumptive activities on the global level, so that a products’ full life cycle is now considered in many assessments. Thus, it would be incredibly negligent to dismiss the impact of increased atmospheric CO² concentrations on the global climate, and the local impacts such as ocean acidification and coral bleaching in the Great Barrier Reef.

Relevant here is the precedent set by the Minister for the Environment and Heritage v Queensland Conservation Council (Nathan Dam) case in 2004. This was an issue under the EPBC Act in which the Full Federal Court found that “all adverse impacts” were not confined to direct physical impact of the development but included indirect impacts and effects which were “sufficiently close to the action to allow it to be said, without straining the language, that they are, or would be, the consequences of the action on the protected matter” (paragraph 53).

The WCI mine would have significant impacts on the global atmosphere and climate in several obvious ways:

- In the emissions from the clearing of pasture lands and intact woodlands. The emissions associated with clearing BNR alone would be upwards of 0.6 Mt, probably closer to 1.2 Mt CO₂-e. (The lower conservative estimate assumes an average above ground biomass of 30 t/ha for woodland environment, relating to around 15 t/ha of carbon and 55 t/ha of CO₂-e, plus another 40% for soil carbon loss.)
- In the loss of carbon-uptake potential from the areas that would be cleared of trees. The likely amount of loss from clearing of vegetation is currently unknown.
- In the extraction of large amounts of thermal coal for energy generation.
Minimum 25 Mt/annum = 57.3 Mt CO₂-e/annum.
Expanding to 50 Mt/annum = 114.6 Mt CO₂-e/annum.
Total estimated coal resource in proposed mine (3.12 Bt) = 7.2 Bt CO₂-e.
(Calculated using quantities and calorific content from WCI (p.1) and factors from the 2008 National Greenhouse Accounts Factors Workbook.)
- In the demand for electricity and fuel to operate the mine, railway and port.
The mine would use 100 MW per annum (IAS, p.12) but the amount of diesel and other fuels required to operate the mine, railway and port is unknown.

In 2006 Australia's net emissions were approximately 576 Mt CO₂-e. This indicates that in any one year of operation (with the anticipated extraction of 50 Mt coal), the WCI coal alone would account for 20% of Australia's total emissions of CO₂-e. While the coal is likely to be exported for energy generation elsewhere, WCI and the Australian Government must take some responsibility for the consequences it would have on the climate, and therefore on all species and ecosystems around the world.

A global perspective

I urge you to consider the wider context of the proposed WCI mine. It is hard to believe that there are proposals to open new mines when it is obvious we need to be closing them, given the huge body of scientific evidence coming in about the state of land, air and ocean. Global impacts on climate are not currently listed as an issue under the EPBC Act. If global warming does not rate as an issue of national significance, and is not factored into assessments of this proposal for massive coal extraction, what will we tell future generations? That sadly, the legislation in 2009 had not kept up with the best scientific knowledge of the time?

Coal mining activities have expanded significantly within the Central Highlands, Isaac and Whitsunday Regional Council areas in recent years. This expansion has fragmented and continued to degrade the natural ecosystems of central Queensland. In the current worldwide economic downturn, the future of mining has become far less certain. We could be left with a severely degraded environment and debilitated industries unwilling and unable to support the extensive scientific and hands-on work needed for ecological restoration. If it happens that global warming advances significantly in the next ten or twenty years, both economic and social politics may demand that we not burn coal. The continued expansion of the coal mining industry may well jeopardise our global and local environments. The fundamental well-being of our society is at stake.

CONCLUSION

As indicated on page one, I would urge the Minister to establish a Public Commission of Inquiry into the proposed expansion of the Queensland coal mining industry into the Galilee Basin. I would also request that the Minister consider whether a Strategic Assessment under section 146 of the EPBC Act may be appropriate.

The coal mining project proposed by WCI clearly raises extremely serious environmental concerns. It should be considered in the context of a wider push by coal and gas companies to exploit the Galilee Basin. There is a very real potential for such mining to destroy a large part of a Biodiversity Hotspot before we have even begun to really understand what would be lost.

Yours sincerely

Paola Cassoni

Enclosure (see accompanying PDF file):

- APPENDIX A Research Projects on Bimblebox Nature Refuge.
APPENDIX B Map 1: Location of Bimblebox Nature Refuge in tenement 1040.
 Map 2: Waratah Coal's identified coal resources.
APPENDIX C Report 1: Exploration compliance assessment by a co-owner of BNR
 (March 2009).
 Report 2: Exploration compliance assessment (diary extract) by a BNR
 caretaker (November 2008).
APPENDIX D Letter of Support from the Desert Uplands Committee.