

# Environmental Offsets Inquiry

April 2014

**NSW MINERALS COUNCIL**



## Introduction

The NSW Minerals Council (NSWMC) welcomes the opportunity to inform the Environment and Communications References Committee with regard to environmental offsets.

The NSW minerals industry accepts the responsibility to offset the residual significant impacts of mining projects on the valuable biodiversity of Australia and NSW. How impacted biodiversity is valued, what is an acceptable offset, and how offsets can deliver the best conservation outcomes are complicated issues. The NSW minerals industry, through the NSWMC and the Minerals Council of Australia, have taken an active role in the development of offset policies at the NSW and national level, along with many other industry and stakeholder groups.

Offsets provide a vital tool for decision makers approving all types of development. The use of offsets is not restricted to the resources industry. Offsetting is also a vital component in facilitating development of employment land, housing and infrastructure throughout Australia.

While offsetting should always be the final option for dealing with impacts on biodiversity, robust offset policies, underpinned by a consistent scientific methodology for assessment, as well as good governance, provide opportunities to improve long-term conservation outcomes.

The current Commonwealth policy with regard to offsetting, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (Commonwealth Offsets Policy)*, has only been in place since October 2012. The Government has committed, through the policy, to its review. It is understood that while this review has been delayed, it will be undertaken.

NSWMC believes that given the complexity of this area of policy and the technicality of scientific assessment processes, the appropriate course for detailed consideration of this relatively new policy is through the Department of Environment review. Recommendations by the Committee on areas for investigation during the course of the Department of the Environment's review of the policy would be a valuable use of the Committee's time and resources.

### About the NSW Minerals Council

The NSW Minerals Council represents the \$21.2 billion minerals industry in NSW, including explorers and producers of minerals and coal in NSW, as well as suppliers to the industry.

NSWMC provides a single, united voice on behalf of our 100 member companies: 40 full members (producers and explorers), 25 associate members (junior explorers) and 35 associate members (service providers) and works closely with government, industry groups, stakeholders and the community to foster a dynamic, efficient and sustainable minerals industry in NSW.

### Terms of Reference and this submission

This submission follows the order of Section 1 of the Terms of Reference (ToR). NSWMC does not deal in detail with the projects referred to in Section 2 of the ToR. Whitehaven is a NSWMC member, and will be making a submission to the inquiry in relation to that project, which is the only NSW project referred to in the ToR.

This submission focuses on the Commonwealth offsetting process, however examples of NSW practices and offsets for NSW threatened species are provided where we believe these will be of assistance to the Committee.

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## 1. The importance of mining to NSW

Mining is a strategic industry for NSW worth \$21.2 billion in total. Around 83%<sup>1</sup> of NSW coal is exported, with the remainder used to power 85.5%<sup>2</sup> of the state's electricity at coal-fired power stations and fuel 100% of its blast-furnace steelworks. Coal is the state's most valuable export commodity, accounting for 35%<sup>3</sup> of all merchandise leaving NSW in 2011-12.

The NSW mining industry directly employs 50,000 people.<sup>4</sup> In 2012/13 mining companies operating in NSW spent \$12.8 billion on wages, contractors, suppliers and community contributions and indirectly supported local businesses and service industries through spending by employees.<sup>5</sup> This contribution to the economy of NSW generated an additional \$13.7 billion in indirect economic activity.<sup>6</sup>

Mining underpins the regional economies of the Hunter Valley (contributing to 35.8% of Gross Regional Product (GRP)), Illawarra (16.5% of GRP), Central West (18.9% of GRP) and other towns and communities across the state.<sup>7</sup> In 2012/13 mining generated \$1.3 billion in royalties for NSW.<sup>8</sup> Recently the NSW Government has made a concerted effort to return royalties to the mining regions, with \$120 million of funding being allocated under the Resources for Regions program in 2013/14.<sup>9</sup>

Mining uses natural resources efficiently, generating this very significant contribution to the NSW economy while using only 0.1% of NSW land and 1.55% of the state's water.<sup>10</sup>

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<sup>1</sup> Coal Services Pty Ltd, Spreadsheet No. 07 – NSW coal exports by destination, by coal type, 2011/12

<sup>2</sup> BREE 2013, 2013 Australian energy statistics, BREE, Canberra, July

<sup>3</sup> Australian Bureau of Statistics, International Merchandise Trade, and Department of Foreign Affairs and Trade, 2011/12

<sup>4</sup> ABS, Labour Force, Cat. 6291.0.55.003, November 2013

<sup>5</sup> Lawrence Consulting, NSW Mining Industry Economic Impact Assessment 2012/13

<sup>6</sup> Ibid

<sup>7</sup> Ibid

<sup>8</sup> NSW Budget Statement 2013-14. Budget Paper 2, Chapter 6

<sup>9</sup> NSW Trade & Investment, Resources for Regions <http://www.trade.nsw.gov.au/>

<sup>10</sup> Australian Bureau of Statistics, Water Account Australia, Cat. 4610.0, 2011–12

## 2. Principles that underpin the use of offsets

Environmental offsets provide a vital tool for decision makers when considering the impacts of development. Offsets provide environmental benefits to compensate for residual significant impacts that remain after avoidance and mitigation measures have been accounted for. Importantly offsets do not make unacceptable impacts acceptable.

The Committee's terms of reference focus almost exclusively on resource developments. It is important to remember that the use of offsets to facilitate development is not restricted to the resources industry. Offsetting also provides a valuable tool to deal with the residual impacts of other development, including housing. New land releases in Western Sydney and the Melbourne growth corridors have relied on offsetting to provide 284,000 new dwellings in Melbourne<sup>11</sup> and 180,000 new dwellings in Sydney<sup>12</sup>.

Offsets can provide improved environmental outcomes in the following ways:

- Restoration and regeneration, which entail restoring, enhancing or establishing biodiversity.
- Protection and security involving protecting biodiversity from further threats such as grazing, fire, overfishing and deforestation
- Indirectly through programs that enhance conservation.

Offsets are particularly important to the types of development where opportunities to avoid impacts are limited. Mining and infrastructure development are examples of development with limited flexibility to avoid impacts. Mining is limited by the location of the resource, while infrastructure developments can also have limited opportunities to avoid impacts because of restriction on location.

### Environmental gain from offset sites

Fundamental to offsetting is that an offset can provide an environmental gain to compensate for the residual impacts of a development. There is a misapprehension that offsetting cannot provide any additional benefit, thereby resulting in a net loss.

Significant improvements to biodiversity can be achieved through the process of active management of land for conservation. The situation of NSW's Hunter Valley demonstrates that the effective management of degraded and highly modified environments can result in the regeneration of high conservation value vegetation communities (endangered and critically endangered ecological communities – EECs and CEECs) and threatened species habitats.

Numerous detailed ecological studies in the Hunter Valley have shown that buffer land for coal mining operations, where agricultural pressures such as grazing have been removed or reduced, have regenerated over the last 15 to 30 years to a state where they now comprise significant biodiversity value. This includes (in almost every case) the regeneration of vegetation communities that have been demonstrated to conform to the descriptions of both State and Commonwealth EEC and CEECs and provide known habitat for a range of threatened flora and fauna species.

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<sup>11</sup> Delivering Melbourne's Newest Sustainable Communities, Program Report, December 2009, 7

<sup>12</sup> SEWPAC, Western Sydney Growth Centres Strategic Assessment Fact Sheet, April 2012, 1

In Western NSW the North Parkes Mine example (**see Case Study 2 – North Parkes Mine’s Kokoda Offset**) illustrates that areas that have been highly modified and cleared can support threatened ecological communities and habitats for threatened species.

### Opportunities provided by offsetting

While offsetting should be the final option, where it occurs it provides the opportunity to secure vital resources for conservation from private business. These resources can be in the form of land for conservation, improvement and ongoing management of that land, security for the land, recovery action plans as well as research and other forms of indirect offsets. Coal & Allied’s contribution to offsetting (**see Case Study 3 – Coal & Allied**), illustrates the very significant level of private contributions to conservation that can be made through offsetting.

Where offsets are used, they provide opportunities to secure improved and long term conservation outcomes, including:

- In fragmented landscapes, trading smaller areas of remnant vegetation for larger, secure areas, with resources for management and greater connectivity.
- Providing connectivity by adding to regional corridors and existing conservation areas (**see Case Study 1 – Mt Owen Mine and Case Study 4 – Charbon Mine**).
- Providing funds for private landholders to manage land for conservation, which would have otherwise been at risk of continuing degradation (for example through the NSW BioBanking Scheme).

Analysis of offsets for Commonwealth projects in the Upper Hunter Valley over the five years illustrate the effectiveness of offsetting in securing land for conservation. During this period<sup>13</sup>:

- 4,744.40 hectares of Environmental Biodiversity and Protection Act (EPBC Act) listed threatened ecological communities (TECs) have been approved for disturbance (4,183.5 hectares of white box woodland CEEC).
- 19,522.30 hectares of TECs and \$1,000,000.00 of TEC related offsets have been approved as offsets (including 13,955.2 ha of white box woodland CEEC).
- 8,639.70 hectares of habitat of EPBC listed species approved for disturbance.
- 19,430.16 hectares of habitat and \$2,900,000.00 of habitat related offsets approved.

The Hunter Remnant Vegetation Project (HRVP) included the botanical survey of 327 sites and mapping of approximately 60,000 hectares of forest or woodland remnants. The HRVP found that most remaining forest and woodland remnants on the Hunter Valley floor are small, with 87 per cent being less than 10 hectares in size, and the median remnant size being 1.6 hectares (Peake 2006)<sup>14</sup>. Peake found that the vast majority, if not all, of the ‘remnant’ vegetation in the central Hunter Valley was indeed regrowth vegetation.

Due to the extent of historic clearing within the Hunter Valley for agriculture the achievement of effective biodiversity conservation outcomes will rely on the comprehensive regeneration and re-

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<sup>13</sup> There is currently no Commonwealth Offsets Register, and no aggregate data for offsets available publicly. This information has been gathered from approvals, and may not be exhaustive.

<sup>14</sup> Peake, T.C., The Vegetation of the Central Hunter Valley, New South Wales. A Report on the Findings of the Hunter Remnant Vegetation Project. Hunter – Central Rivers Catchment Management Authority, Paterson, 2006

establishment of native vegetation and fauna habitats within a patchwork of older remnants of vegetation. In this way biodiversity offsets resulting from mining developments will form the most significant means of re-establishing vegetation and habitats in the Hunter Valley in the short to medium term future. The establishment of the New Forest by Mt Owen Mine in the Hunter Valley of NSW illustrates the gains that can be made through active management, protection and security through offsetting (**see Case Study 1 – Mt Owen Mine**).

### 3. Processes used to develop and assess offsets

NSWMC members operate under two different systems for offsetting: where matters of national environmental significance are proposed to be impacted, the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (Commonwealth Offsets Policy)* applies; where NSW listed species and communities are impacted, the *NSW Offset Principles for Major Projects (State significant development and State significant infrastructure) (NSW Offset Principles)* applies. Frequently different offsets are required to achieve the outcomes required by the two different jurisdictions.

The Commonwealth Offsets Policy was finalised in October 2012 and applied new referrals and projects under assessment from 2 October 2012. The policy was the result of two years of work by the former Labor Government and involved the CSIRO.

The policy was developed with input from the Australian Conservation Foundation, Conservation Council, World Wildlife Fund, the Humane Society, Birds Australia, Invasive Species Council, the Australian National University and University of Queensland. 54 submissions were received on the consultation draft of the policy and substantial changes were made including a reduction in the percentage of the offsetting liability that could be provided by indirect offsets.

The Commonwealth Offsets Policy provides that:

- Offsets will not be considered until all reasonable avoidance and mitigation measures are considered or acceptable reasons are provided as to why avoidance or mitigation of impacts are unacceptable
- Offsets should align with conservation priorities for the matter that is impacted in order to deliver a conservation gain.

The policy provides for different categories of offset:

- Direct Offsets - which must provide a measurable conservation gain for the protected matter.
- Compensatory measures - which do not directly offset the impacts on the protected matters but are anticipated to lead to benefits for the impacted matter. These are limited to 10 percent of the offsetting requirement and include measures such as research or educational programs.
- Advanced offsets - these are offsets that are set up in advance of any development.

The proponent undertakes the detailed assessment of biodiversity on the project area and any proposed offset. Survey and mapping are undertaken and provided to the Department of the Environment, which applies the Offset Assessment Guide to assess the offset requirements for the impact. There are significant penalties in the EPBC Act for providing false or misleading information, including imprisonment and the setting aside of an approval made in reliance on that information. The Offset Assessment Guide is a tool developed for departmental officers to assess impacts and proposed offsets and is also available for industry to assess impacts and to assist in determining appropriate offsets.

There remain a number of areas where the Commonwealth Offsets Policy could be improved, including:

- **Providing credit for ecological rehabilitation of mined land.** Many of the areas where the NSW minerals industry operates are highly cleared. For instance in the Upper Hunter there has been considerable clearing of the valley floor. Areas of the lower classes of grazing land



make up a significant proportion of land disturbed for mining in the region. Mining presents an opportunity to undertake ecological rehabilitation on those areas, providing improved conservation outcomes by adding habitat for threatened species, re-establishing ecological communities and adding to remnant areas and conservation corridors. Mt Owen Mine illustrates the gains that can be made through a strategy involving both offsets and rehabilitation (**see Case Study 2**). Providing offsetting credit for ecological rehabilitation is a strong incentive to mining operations to undertake this type of rehabilitation, which is significantly more resource intensive than returning the rehabilitated areas to pasture.

- **Providing market based and environmental trust offsetting options.** These options are available or being developed in NSW. The Commonwealth should also consider providing these options for offsetting as they can encourage private landholders to manage their land for conservation, facilitate strategic offsetting, and move responsibility for the long term management of offsets to professional land managers (rather than developers).

The Minerals Council of Australia submission to the Committee outlines in detail areas of improvement for the Commonwealth policy, which are supported by NSWMC. These and other concerns with regard to the Commonwealth Offsets Policy can best be dealt with in the review of the policy.

### **Interaction with NSW**

Biodiversity offsetting policy in NSW has been under review for two years. In March 2014 the NSW Government introduced a draft *Biodiversity Offsets Policy for Major Projects* for consultation. This is a whole of government policy developed with input from all agencies responsible for assessment and compliance of major projects.

At the time of writing this submission the draft policy is under review by the NSW minerals industry, however there are many positive aspects of the policy, not the least that it is one whole of government policy, providing a consistency of expectations around offsets which has been missing in NSW.

## 4. Monitoring and evaluation of offsets

The Commonwealth Policy sensibly provides the principles for security and governance of offsets, rather than prescribing one particular mechanism. This allows for a project specific approach to securing the offset through Commonwealth or State mechanisms depending on the project. The policy establishes that an offset must be designed in a way that can be measured, monitored, audited and enforced.

The monitoring and evaluation process must meet the principles set out in the policy, but the details are dependent on the type of mechanism. The policy also provides for the following:

- A register of offsets at the Commonwealth level.
- Annual reports to the Department of Environment.
- A requirement to report data to the Department of Environment to assess the success of the offset.

Although the Department of Environment holds records of all Commonwealth offsets, a public register is yet to be developed. The NSWMC supports the development of a public register of offsets. The NSW Government is in the process of finalising an offsets database.

These requirements are in addition to the management and reporting requirements inherent in the security mechanism. The Commonwealth policy acknowledges that there are a number of legal mechanisms for securing land based offsets including state based conservation agreements and agreements under Part 14 of the EPBC Act. The policy provides principles for determining whether a legal mechanism is suitable for offsets on private land:

- Should be legally secured for conservation for at least the duration of the impact
- The securing scheme should actively monitor for compliance, with covenant requirements enforced
- Any changes in legal status should require Ministerial or statutory approval.

In NSW there are a number of options that can be used to secure land based offsets, these include:

- Purchasing land and securing it with the conservation agreement.
- Using an EPBC Act conservation agreement.
- Adding the land to the national parks estate.
- Using a NSW BioBanking Agreement.
- Other less utilised mechanisms including restrictive covenants, Voluntary Planning Agreements.

In NSW there is also, in theory at least, the option of purchasing and retiring BioBanking credits in lieu of securing land for an offset. BioBanking credits are generated by landholders through a BioBanking Agreement, requiring the landholder to protect and manage land to maintain or improve biodiversity. The BioBanking Scheme has had limited uptake to date and at this time does not provide an efficient

market for credits. Purchasing BioBanking Credits would meet all the requirements of the Commonwealth Offsets Policy.

## 5. Strategic assessment and other innovative approaches to offsetting

The use of environmental offsets in Australia has evolved over a number of years. Significant improvements in offsets policy settings have been made in recent years, with lessons learned leading to better conservation outcomes and more robust, scientific methods for assessing impact and offsets.

The project-by-project approach to offsetting can result in a lack of strategy and coordination to the securing of offsets. This has resulted in some older offsets being located in areas close to mines. The disadvantages of this type of offset have become apparent over time; some offsets are in areas where there is a resource that is now viable to mine; offsets are fragmented; and the opportunities arising from the integration of offsets have been missed.

Farmers and local government have raised concerns in NSW about the risk of offsets locking up areas of agricultural land for conservation. There are a number of reasons for these concerns including the loss of productive land, the loss of rateable land, and the incursion of native and feral animals from conservation lands, including National Parks and offsets, onto farms.

Strategic assessments and other innovative offsetting mechanisms and tools that begin to address these concerns above are being developed, including:

- **Strategic Assessments** - Strategic assessments have been responsible for opening up important areas for development, including the Western Sydney growth areas and the Melbourne's growth corridors.

The Upper Hunter Strategic Assessment of Biodiversity is a joint initiative of the NSW and Commonwealth governments and will produce a Biodiversity Plan for the region. The Biodiversity Plan will identify and document biodiversity values within the assessment area, particularly threatened ecological communities and species listed under the EPBC Act and protected under the NSW Threatened Species Conservation Act 1995 (TSC Act). The Biodiversity Plan will also identify mechanisms to achieve desired conservation outcomes, including through avoidance, mitigation and offset arrangements and adaptive management measures.

Development of the assessment is a complex process, which if successful will provide better, more strategic outcomes for conservation and greater certainty and predictability, benefitting industry, regulators and the community.

- **Conditioning projects to cooperate on regional biodiversity** - Conditioning of individual projects in the same area to ensure a cooperative, strategic approach is taken to biodiversity. This approach was taken by the NSW Government in relation to the impacts of projects on the Leard State Forest in the New England North West region of NSW. Projects in the area are required to fund an independent consultant to develop the Leard Forest Mining Precinct Regional Biodiversity Strategy. Approvals for these projects under the EPBC Act refer to the NSW condition and require the terms to be implemented. The purpose of the strategy is to provide an integrated framework for the management, monitoring and security of offsets in the area. A working group including Local Government and catchment management authority, Department of the Environment and NSW regulators is overseeing the strategy's development.
- **Publishing information** - The development of a NSW Offsets Database to gather and publish information on state based offsets currently held in individual project approvals. This

project is underway and will provide valuable information for proponents, government and community.

- **Developing a centralised approach to offsetting** - Development in NSW of an offsets trust that will be able to strategically source offsets, including by purchasing BioBanking credits. It is proposed that an offset liability will be able to be converted into a payment to a trust, which will then be responsible for securing offsets. The trust would be in a position to broker BioBanking agreements with landholders, increasing the available credits and providing incomes streams to private landholders to manage conservation.
- **Recognising innovative ways to offset** - Recognition of indirect offsets, including research by the Commonwealth Offsets Policy, and the draft NSW Offset Policy.

## 6. Conclusion

Environmental offsets provide a necessary tool in the development of residential, commercial, infrastructure and resource developments. The development of major projects is vital to the Australian economy, while large-scale land developments provide housing for a growing population. Important infrastructure including ports and airports are also facilitated by the ability to offset.

Whilst the use of environmental offsets should remain the final option, where offsetting is appropriate it can provide significant opportunities to harness private investment in conservation and make environmental gains. In the highly cleared landscapes of the Hunter Valley, Western and North Western NSW, offsetting provides opportunities to improve and connect remnant areas of vegetation, in combination with mine rehabilitation.

Government should be looking to take advantage of the opportunities provided by offsetting for environmental, social and economic gains. Any consideration of the environmental offsets policy needs to be cognisant of those opportunities and be informed by an appreciation of the importance of this tool in the continued economic growth of Australia.

## 7. Case Studies

### Case Study 1 - Mt Owen Mine

Open cut mining commenced at Mt Owen near Singleton in the Hunter Valley in 1993. The mine currently operates under a 2004 NSW approval granted to the current owners Glencore. The mine is disturbing part of the Ravensworth State Forest. Regeneration and revegetation efforts across Mt Owen's offsets and rehabilitation are targeted towards re-establishment of the Central Hunter Ironbark-Spotted Gum-Grey Box Forest<sup>15</sup>.

At the end of the mine's life, it is expected that rehabilitation of mined areas, and active plantings and management of vegetation across Mt Owen's offsets will result in an area of native woodland approximately five times larger than the woodland community that existed prior to mining. This total area of woodland - 1774 hectares - will be comparable with the largest areas of existing remnant vegetation on the Hunter Valley floor.

The 1994 approval of the mine included conditions to establish the 430 hectare New Forest in compensation for the loss of 240 hectares of the Ravensworth State Forest. This was an area that was generally devoid of native woodland and forest vegetation. The successful re-establishment of vegetation communities and habitats enabled transfer of the New Forest to Forestry Corporation NSW in December 2003, and incorporation into the Ravensworth State Forest where it is designated for conservation.

The 2004 approval added a number of Biodiversity Offset Areas (BOAs) that adjoin to New Forest or Ravensworth State Forest. A comprehensive Biodiversity Offsets Strategy was established as part of the 2004 approval which includes conservation of existing vegetation (approximately 15 – 20 years old) and active planting of 133 hectares of existing pasture areas to return them to their original woodland state, while the remaining areas of existing pasture will be managed to enhance natural regeneration. Augmentation of fauna habitat, including constructing nest boxes and amphibian habitat is also part of the strategy.

#### Performance of the offsets

In 2013 Glencore commissioned an assessment of the ecological value of offset restoration works and mine rehabilitation to determine how these areas are trending towards completion / performance criteria.

Comparisons were made against the NSW Scientific Committee's Final Determination for the *Central Hunter Ironbark – Spotted Gum – Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions Endangered Ecological Community (EEC)* for each of the rehabilitation, revegetation, regeneration and remnant vegetation areas sampled as part of the Project:

- All areas show reasonable evidence of self-sustainability (through species recruitment), or at least early signs of self-sustainability
- All areas support a canopy dominated by spotted gum (*Corymbia maculata*) (which is a characteristic species of the EEC), and in some cases other characteristic canopy species
- All areas support a reasonable to moderate proportion of species that are listed as being characteristic of the EEC (assessed both as the proportion of the community that is represented on the EEC listing, and as the proportion of the EEC listing that is represented in the community).

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<sup>15</sup> Central Hunter Ironbark-Spotted Gum-Grey Box Forest is a NSW listed community. Mt Owen does not impact on Matters of National Environmental Significance and did not require a Commonwealth approval



Areas of the New Forest and the BOAs were found to meet the completion criteria and are now regarded to support vegetation communities consistent with the Central Hunter Ironbark-Spotted Gum-Grey Box Forest.

Annual fauna monitoring has taken place at Mt Owen since 1996. Approximately 20 native fauna species have been recorded during monitoring in mine rehabilitation sites and between 20 and 175 fauna species have been recorded in four regenerating monitoring locations in the BOAs and the New Forest. These locations provide habitat for key threatened species, such as the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) listed endangered spotted-tailed quoll (*Dasyurus maculatus maculatus*), which is regularly recorded in the New Forest Area, as well as a number of NSW Threatened Species Conservation Act 1995 (TSC Act) listed threatened woodland birds and micro-bats.



**Example of Regenerated Central Hunter Ironbark - Spotted Gum – Grey Box Forest EEC found in the Mount Owen Biodiversity Offset Areas**



**Wetland habitat augmentation at Mount Owen Complex to facilitate the return of locally occurring fauna species to rehabilitated and regenerated habitats.**



## Case Study 2 - North Parkes Mine's Kokoda Offset

The North Parkes Mine (NPM) is situated 27 km from Parkes in western NSW. NPM is a gold and copper mine that commenced operations in 1993.

The surrounding locality and region consists of mostly cleared agricultural land with patches of remnant vegetation generally associated with State Forests. NPM are in the processing of seeking approval for the North Parkes Mine Step Change Project. Despite the fact that most of this vegetation and habitat has been extensively modified and cleared in the past, the Project Area was found to support:

- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grassland of South-eastern Australia EEC (EPBC Act)
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland; along with the Commonwealth listed superb parrot (*Polytelis swainsonii*) (EPBC Act)
- The vulnerable grey-crowned babbler (*Pomatostomus temporalis temporalis*) (NSW threatened species) was also recorded in the habitats of the Project Area



**Moderate to Good Quality Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Fauna Habitat recorded in the NPM Project Area**

NPM undertook a number of project revisions to reduce the extent of potential impact on these species, including avoidance of impacts to the mapped extent of the White Box CEEC within the Project area to the greatest extent practicable. The residual significant impacts of the Project are proposed to be offset by a comprehensive biodiversity offset package..

NPM's proposed offset site, the Kokoda Offset, contains a total of 348 hectares of vegetation communities. These were mapped across the Kokoda Offset Site during detailed flora surveys and

comprise 237 hectares of woodland and 111 hectares of Derived Native Grassland (DNG). Two EPBC Act listed threatened ecological communities (TECs) have been recorded across the Kokoda Offset Site, Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia EEC (GBGW EEC) and White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland CEEC. Table 1 provides an overview of the approved Biodiversity Offset Package for the Step Change Project approved under the EPBC Act on 13 February 2014.

**Table 1– Proposed Action Impacts and Offset Actions for Key Matters to be Impacted**

Values to be Offset	Habitat to be Impacted and Likely Size/Area of Impact	Kokoda Offset Site	20 Year Offset Outcome
Grey Box Grassy Woodland	25 hectare woodland  21 hectare DNG	13 hectare woodland  96 hectare DNG (with active regeneration to woodland)	109 hectare woodland
White Box – Yellow Box – Blakely’s Red Gum Woodland	0.28 hectare	2.2 hectare	2.2 hectare
Habitat for the regent honeyeater and swift parrot	66 hectare	95 hectare of equivalent habitat	191 hectare of equivalent habitat
Habitat for the superb parrot	90 hectare	206 hectare of known habitat	206 hectare of known habitat
Habitat for threatened woodland birds and bats	81 hectare	236 hectare of potential habitat	348 hectare of potential habitat

Vegetation and habitats are currently occurring in low to moderate condition meaning that in accordance with the Commonwealth Biodiversity Offsets Policy, these areas can be actively and deliberately improved by way of the management actions to provide an environmental gain. The superb parrot, listed as vulnerable under the TSC Act and EPBC Act, was recorded at 23 locations across the proposed Kokoda Offset Site. The number of birds recorded at each location ranged between a single bird and 25 individuals, and totalling 169 individuals. 13 NSW listed species have been recorded at the site including the Grey Crowned Babbler.

The Kokoda site has been under pressure from grazing for a number of years, but with grazing removed and resources available for active management, significant environmental gains will be made. In addition, NPM will secure the in perpetuity conservation of this site through the placement of a covenant on the title of the land. The removal of existing grazing pressures, active regeneration and management, coupled with long-term security for the site will provide a significant conservation asset for the area that would not have existed without offsetting.



**Existing Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grassland of South-eastern Australia EEC at Kokoda Offset Site**

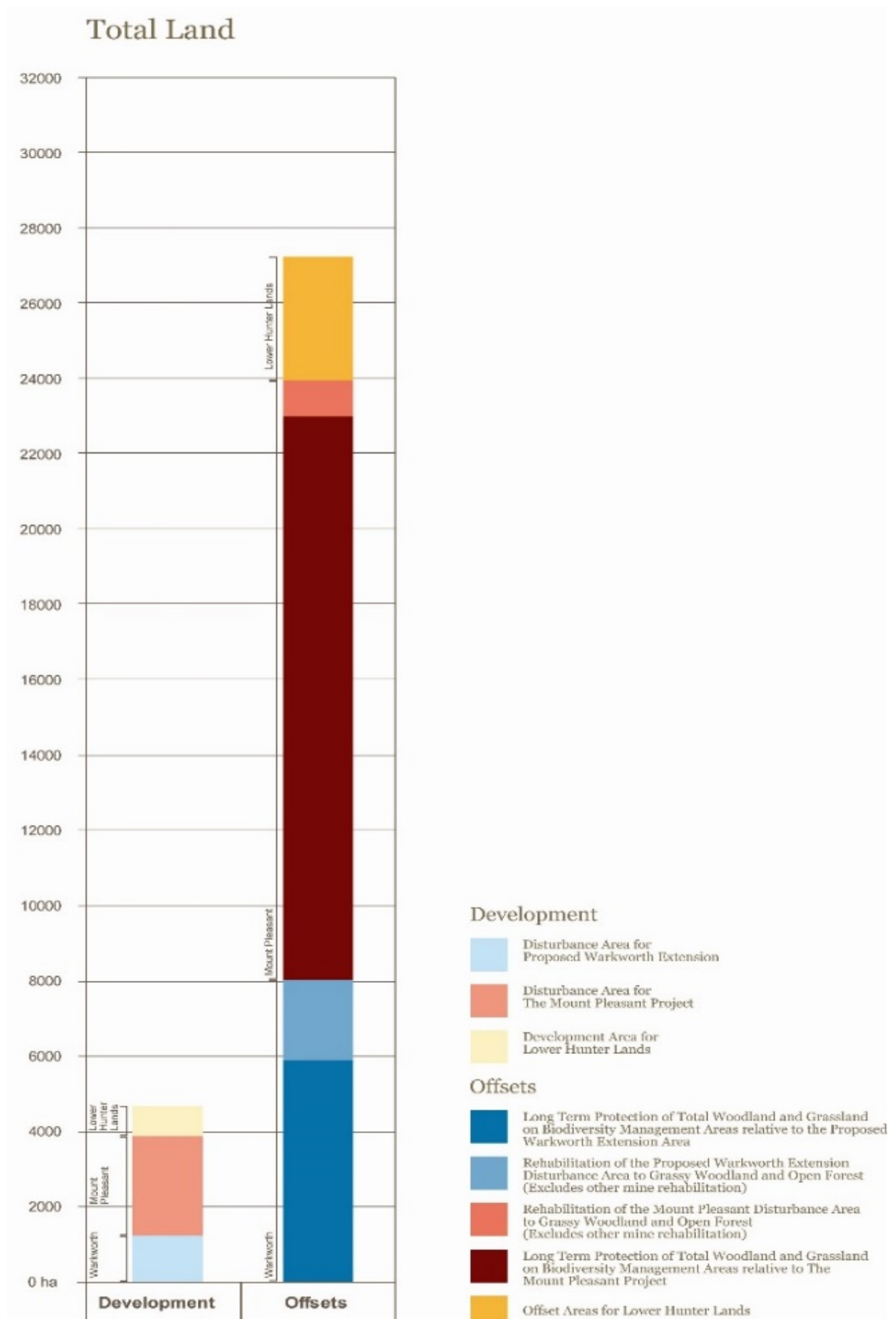
### Case Study 3 - Coal & Allied's Hunter Valley Offsets

Recent approvals of Coal & Allied projects in the Hunter Valley have secured significant areas within the Hunter catchment as long-term biodiversity offsets<sup>1</sup>. **Figure 1** illustrates the offset ratio of more than 5:1 for a combined disturbance footprint of less than 5000 hectares. These offsets have been enhanced by indirect offset commitments to improve outcomes for Matters of National Environmental Significance and NSW biodiversity values.

Key indirect offsets associated with recent Hunter Valley projects include:

- Assisting with the establishment of critical conservation corridors connecting Watagans to Stockton Bight and the Wallarah Peninsula through contribution of approximately 3,000 hectares of land.
- Investment of \$1 million for invasive weeds research project, to address key threatening processes identified within the National Recovery Plans for Box Gum Grassy Woodlands CEEC.
- \$2 million to deliver a Woodland Birds project targeting priority actions from the National Recovery Plans for the regent honeyeater and swift parrot.
- A commitment of \$4 million over 5 years to restore and increase the area of endangered Warkworth Sands Woodlands and Central Hunter Ironbark ecological communities.
- An offer of 1,800 hectares of land next to the Goulburn River National Park to increase the National Reserve System for the Warkworth Continuation Project.

**Figure 1 – Coal & Allied - Development and Offsets**





## Case Study 4 - Charbon Mine

The Charbon mine is located in the western coal fields of NSW. The mine has Commonwealth approval to clear:

- 42 hectares of native vegetation which includes **13.3 hectares of White Box-Yellow-Box-Blakely's Red Gum Grassy Woodlands and Derived native Grasslands ecological communities**, which is in low condition.
- 47 hectares of cleared land.
- Remove no more than 40 individual Capertree Stringybark.

In order to mitigate and offset these impacts the mine will secure, restore and manage 373 hectares of land, including **120 hectares of White Box-Yellow-Box- Blakely's Red Gum Grassy Woodlands in good condition**, at a ratio of six hectares of offset land to one hectare of disturbance of the ecological community. This will result in an area many times larger than is being disturbed being protected. Importantly the offset area adjoins the Wollemi National Park, adding to the conservation estate.



***Charbon Mine – Offset Site***

In addition Carbon will undertake mine site rehabilitation that will involve restoring mined land to habitat for the threatened species impacted by the development. The photos below show rehabilitation of previous open cut mining at the Charbon mine.



*Charbon Open Cut 2006*



*Rehabilitated Charbon Open Cut 2014*

## References

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