

PROPOSED MODIFICATION TO HVO SOUTH COAL PROJECT



Environmental Assessment

Prepared for Coal & Allied Operations Pty Limited | May 2010



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Proposed Modification to HVO South Coal Project

Final Report

J10017 | Prepared for Coal & Allied Pty Ltd | 11 May 2010

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The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or recommendations contained within the report are based only on the aforementioned circumstances.

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1 Introduction

This Environmental Assessment (EA) has been prepared to support an application under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to modify the Hunter Valley Operations South (HVO South) Coal Project Approval 06_0261.

The modification proposed is to reallocate the Archerfield Property provided as a Biodiversity Enhancement Area to offset impacts caused by the clearing of native remnants (48ha) and regrowth (92ha) for the HVO South Coal Project to an alternative site within the Goulburn River Biodiversity Area (see Figure 1.1). The Archerfield Property is herein referred to as Archerfield.

The modification proposed would allow Archerfield to be used as part of the Northern Biodiversity Offset Area described in the proposed Warkworth Extension.

Hunter Valley Operations (HVO) is an open cut coal mining complex owned by Coal & Allied Operations Pty Limited (Coal & Allied) in the Hunter Valley, located approximately 18 kilometres (km) west of Singleton (Figure 1.1). HVO is split geographically by the Hunter River into HVO North and HVO South. While HVO South and HVO North have separate project approvals, HVO is managed as an integrated operation.

1.1 Background

HVO South is located within the Singleton local government area and is in proximity to the communities of Maison Dieu and Jerry's Plains. The area surrounding the site is dominated by coal mining, industrial development and agriculture.

As previously discussed, the mining and processing activities at HVO are geographically divided by the Hunter River into HVO South and HVO North with movements of coal, coarse and fine reject, overburden, topsoil, operational water, equipment, materials and personnel between the two areas.

HVO North comprises the active West, Carrington and North pits and the mined out Alluvial Lands. In addition, three coal preparation plants (CPPs) are located at HVO North; Hunter Valley CPP, Newdell CPP and Howick CPP. There are two train load out areas; Hunter Valley Load Point and Newdell Load Point. In addition, Ravensworth Coal Terminal is utilised.

HVO South comprises the Cheshunt, Riverview and Lemington pits and the Lemington CPP.

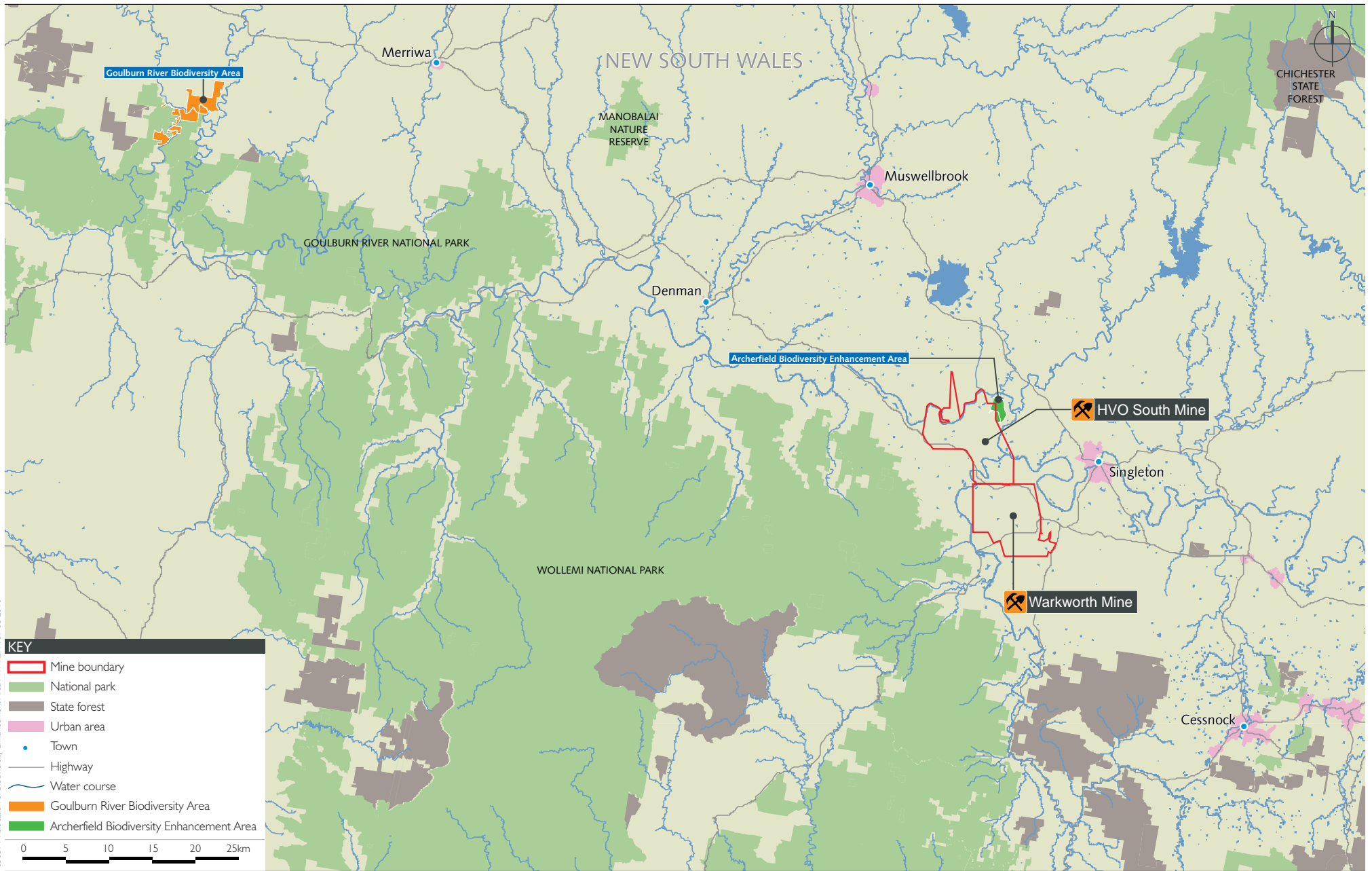
1.2 Approval history

HVO has expanded over time through a process of extension of existing mines and acquisition of additional mines. As a result there were numerous historic development approvals that applied to the operation.

In 2003, Coal & Allied obtained development consent for the continued operation and amalgamation of all its coal mining and processing operations north of the Hunter River. This consent also amalgamated 18 differing consents and approvals with a single, unambiguous consent that sets out Coal & Allied's obligations, limits and controls for the HVO North operations.

In 2009, Coal & Allied obtained project approval for the continued operation and amalgamation of all coal mining and processing operations south of the Hunter River. The project approval also amalgamated 25

separate consents and 10 associated modifications that apply to HVO South with a single project approval. The current Project Approval 06_0261 is included in Appendix **A**.



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KEY

- Mine boundary
- National park
- State forest
- Urban area
- Town
- Highway
- ~ Water course
- Goulburn River Biodiversity Area
- Archerfield Biodiversity Enhancement Area

0 5 10 15 20 25km

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2 Proposed modification

The modification proposed is to reallocate remnant woodland vegetation and native enhancement areas (140ha) of Archerfield to an alternative site within the Goulburn River Biodiversity Area (see Figure 2.1). Archerfield is provided as a “Biodiversity Enhancement Area” for the life of the development, to offset impacts caused by the clearing of native remnants (48ha) and regrowth (92ha) vegetation for the HVO South Coal Project.

The modification proposed would allow Archerfield to be used as part of the Northern Biodiversity Offset Area described in the Proposed Warkworth Extension. Further details on the Northern Biodiversity Offset Area are provided in the *Proposed Warkworth Extension Environmental Assessment* (EMGA Mitchell McLennan 2010).

2.1 HVO South ecological assessment

Ecological impact assessments for the HVO South Coal Project considered the previous assessments undertaken and the potential direct, indirect and cumulative impacts of the existing approvals for vegetation clearance within HVO South. Any threatened species, populations or ecological communities not previously assessed under section 5A of the EP&A Act and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were identified and discussed with respect to the potential for them to be impacted by existing approvals for vegetation clearance within HVO South.

The impact assessments were made on the basis that previous impact assessments have concluded that no significant impacts to threatened species or ecological communities were expected. Much of the habitat upon which these assessments were undertaken has since been cleared due to approved mining operations.

The ecological assessment for the HVO South Coal Project (*Hunter Valley Operations South Coal Project, ERM 2008*) revealed that the majority of general environments at HVO South are low in habitat complexity. The greatest number of species recorded at HVO South are birds, with a general low diversity of ground-dwelling and arboreal mammal species, reptiles and amphibians. This would be expected given the isolated nature of the vegetation remnants found within HVO South, making them more suited to mobile species such as birds and bats.

The diversity of flora species varied across the site and was greatest in areas where disturbance levels were low or where disturbances have been removed. All areas contained exotic species, which were generally dominant in areas of high disturbance such as roadsides and riparian zones.

Three extension areas were proposed for the HVO South Coal Project. Only one of the extension areas had not been assessed in previous ecological impact assessments undertaken at HVO South. This area located to the south east of the Riverview Pit, and covers some regrowth woodland, cleared and developed land and part of the Hunter Valley Gliding Club property. The area contains previously disturbed and cleared land with some regrowth woodland (immature trees to 8m and Diameter at Breast Height of 10cm) and was considered to be of limited value as fauna and flora habitat. Threatened birds such as the Grey-crowned Babbler may forage in this area but it is unlikely that any fauna species would rely on this area for resources given its current condition, and the availability of habitat in adjacent areas. Therefore it was considered that the removal of this small area was unlikely to impact on any threatened species such that potential impacts would be significant.

This HVO South Coal Project involves increasing the area of mining and infrastructure disturbance by 250ha, which includes 48ha of remnant vegetation and 92ha of regenerated vegetation. The assessment of extension areas concluded that no threatened or endangered species or communities will be significantly impacted by the proposal.

A site-specific conservation significance assessment was developed as part of the ecological assessment to identify areas that provided the greatest biodiversity enhancement opportunities. This assessment rated the various ecological parameters of each area to be cleared and of adjoining remnant vegetation areas as identified by Coal & Allied.

2.2 Archerfield Biodiversity Enhancement Area

As part of the HVO South Coal Project (*Hunter Valley Operations South Coal Project, ERM 2008*), a conservation significance assessment was undertaken which identified the highest rating area as Archerfield, this area is located to the north east of the Project Application area. The 140ha area of remnant woodland vegetation and native enhancement area was retained and managed for its potential to provide a significant area of habitat for native flora and fauna.

The 140ha offset was proposed to provide a biodiversity enhancement area, the Archerfield Biodiversity Enhancement Area for the life of the development (see Figure 2.2). It was determined that the area was appropriate to provide a reasonable biodiversity offset for the loss of vegetation and habitat that would be caused by the project.

The Archerfield Biodiversity Enhancement Area contains 123.3ha of woodland including almost 20ha of the State listed Warkworth Sands Woodland (WSW). The conservation and ongoing management of this higher value woodland and the potential for WSW to regenerate in the area was proposed to result in the ongoing viability of a large area of flora and fauna habitat within HVO South and the locality.

The Archerfield Biodiversity Enhancement Area also has an extensive area of the soil type and geology required for the growth of WSW. These areas have recently been mapped as containing 195.8ha of Warkworth Sands Derived Native Grassland. This derived grassland does not form part of the 140ha offset for the HVO South Coal Project.

2.3 The proposed Warkworth Extension

Warkworth Mining Limited (WML) operates Warkworth Mine, an existing open-cut mine located approximately 15km southwest of Singleton. Warkworth is one of several mines in the area, others being Mount Thorley, Bulga and Wambo mines and HVO. Economic resources of coal have been identified south and south west of the Warkworth Mine and WML is seeking a project approval under the EP&A Act to extend mining activities into these areas, refer to *Proposed Warkworth Extension Environmental Assessment* (EMGA Mitchell McLennan 2010).

Biodiversity offset areas have been proposed for the proposed Warkworth Extension. These include the Southern, Northern and Goulburn River Biodiversity Areas. Warkworth Sands Woodland covers approximately 202.0ha of the study area for the proposed Warkworth Extension. Of this, approximately 103.5ha of WSW is proposed to be progressively cleared consisting of high and medium quality vegetation. This includes, 35.6ha that has been previously approved for clearing before 2017, with a further 67.9ha proposed to be progressively cleared after 2017.

The quality of this community varies considerably and can be considered to vary from high to low depending upon species composition, structural formation and the level of recent disturbance. The higher quality areas tend to occur on deep sands and have the full complement of tree and shrub species

associated with this community, while the low quality vegetation typically consists of grassland with scattered trees.

WML has assessed the mapped occurrences of WSW in an attempt to offset impacts from the proposed clearing of 103.5ha of this community for the proposed Warkworth Extension. Accordingly, WML propose to avoid and protect 104.9ha (19.5ha at Archerfield) as offsets for this community and proposes to enhance and re-establish some 195.8ha (mapped as Warkworth Sands Derived Native Grassland) of this community within a Northern Biodiversity Area at Archerfield; to establish a large, fully functioning ecological community.

Approximately 103.8ha of the Central Hunter Grey Box- Iron Bark Woodland contained at Archerfield is also proposed to offset clearing for the proposed Warkworth Extension.

2.4 Justification

This HVO South Coal Project modification proposes that the Archerfield Biodiversity Enhancement Area would be better utilised as an offset area for the proposed Warkworth Extension, which is likely to have an impact on the State listed WSW, refer to *Proposed Warkworth Extension Environmental Assessment* (EMGA Mitchell McLennan 2010).

Coal & Allied and WML have considered options for offsetting both the HVO South Coal Project and the proposed Warkworth Extension using an integrated approach aimed at achieving the best conservation outcomes for the impacts from their activities on Endangered Ecological Communities (EEC) and threatened species. In order to achieve strategic conservation outcomes both mines have reassessed their current offset strategies.

The HVO South Coal project required approximately 140ha of remnant vegetation to be conserved for the life of the development. HVO South as such is proposing to utilise an area of 140ha within the Goulburn River Biodiversity Area. This area has a high biodiversity value and ability to regenerate.. The Goulburn River Biodiversity Area offers greater habitat complexity and strategic conservation outcomes than that provided by the current offset arrangements for HVO South. Further details on the Goulburn River Biodiversity Area are in Section 2.5.

The ability to include the Archerfield Biodiversity Enhancement Area as part of the Northern Biodiversity Area for the proposed Warkworth Extension also has long term strategic conservation outcomes. The Northern Biodiversity Area has a high biodiversity value and ability to regenerate for a net positive impact on the WSW. The desired outcome of enhancement and re-establishment of the WSW community in the biodiversity areas is considered achievable through research undertaken by the University of New England and site selection. The Warkworth Sands Derived Native Grassland in the Archerfield Biodiversity Enhancement Area contains a naturally occurring intact sand profile which once supported the WSW. This sand profile provides the foundation and hydrology suitable for the reestablishment of the woodland. The Northern Biodiversity Area provides an increase in the area of conservation to 342ha. This area will offer long term protection of 123.3ha of woodland (including almost 20ha of WSW to be enhanced) as well as conservation, re-establishment and long term protection of some 195.8ha of WSW. A Biodiversity Management Plan has been prepared for all the offsets for the proposed Warkworth Extension, including the Goulburn River Biodiversity Area and is included in Annex E of the *Proposed Warkworth Extension Environmental Assessment* (EMGA Mitchell McLennan 2010). The vegetation and threatened species locations of the Northern Biodiversity Area are shown in Figure 2.3 and Figure 2.4, respectively.

2.5 Goulburn River Biodiversity Area

This HVO South Coal Project Approval modification proposes a 140ha offset of remnant Narrow leaved Ironbark Woodland at the property adjacent to the Goulburn River, known as the Goulburn River Biodiversity Area. As previously discussed, the Goulburn River Biodiversity Area is also proposed to form part of the offsets for the proposed Warkworth Extension. WML has an agreement to acquire the Goulburn River Biodiversity Area, in the unlikely event that the agreement is not realised, WML commits to providing an alternative area of similar ecological value, subject to agreement with the Department of Planning and the Department of the Environment, Water, Heritage and the Arts.

The Goulburn River Biodiversity Area is approximately 1,562ha in size and is located approximately 100km to the north west of HVO (see Figure 2.1). The property sits adjacent to the northern side of Goulburn River National Park and has river frontage along the Munmurra and Goulburn rivers and includes the junction of the two rivers. The site also sits a short distance from the Krui River, which along with the Munmurra has a constant flow of water fed by underground aquifers upstream. The vegetation on the site has been generally cleared along the river flats while the vegetation of the lower foothills and upper sandstone escarpments seems relatively undisturbed. Despite the past agricultural use of the river flat areas weed invasion was found to be relatively low.

The vegetation on the river flats and valley floor corresponds to the State listed EEC Box Gum Grassy Woodland and Derived Native Grasslands with canopy species, where present, including White Box, Yellow Box and Blakely's Red Gum. Regeneration of the canopy species is common throughout the valley floor and it is considered that the vegetation would return to a functioning sustainable community with the cessation of grazing. The riparian vegetation is dominated by River Oak and Roughbarked Apple while the vegetation of the lower foothills forms four different intergrading communities with composition depending upon slope, geology and aspect. These communities are; a shrubby version of the State listed EEC White Box woodland; Rough-barked Apple woodland; Narrow-leaved Ironbark woodland and Slaty Gum (*Eucalyptus dawsonii*) open woodland. The upper slopes and ridges typically contain two intergrading communities dominated by Narrow-leaved Ironbark and Narrowleaved Stringybark as well as Narrow-leaved Ironbark and Grey Gum (*Eucalyptus punctata* var. *punctata*). Other canopy species occur within these communities depending upon location such as Black Cypress Pine (*Callitris endlicheri*), Bullock (*Allocasuarina luehmannii*) and Brown Bloodwood (*Corymbia trachyphloia*).

The site provides known habitat for the State listed endangered species *Pomaderris queenslandica*, five separate epiphytic Tiger Orchids (the species forms part of an endangered population in the Hunter Catchment), Speckled Warbler, Brown Treecreeper and Diamond Firetails. It is also considered possible that during flowering periods that this site could provide potential breeding habitat to the Regent Honeyeater particularly during heavy canopy tree or mistletoe flowering periods. The Goulburn River Biodiversity Area is located approximately 100km to the north of the Capertee Valley, an area known to be the core breeding habitat for this species. Due to the nomadic foraging habits of the Regent Honeyeater it is not unlikely that the species would forage and/or breed on this site if suitable blossoming is present. The vegetation and threatened species locations of the Goulburn River Biodiversity Area are shown in Figure 2.1 and Figure 2.5, respectively.

It is proposed to allocate 140ha of the Narrow Leaved Iron Bark woodland depicted in Figure 2.1 for the HVO South Coal Project. The exact position of HVO's offset is not nominated within this woodland as the Goulburn River Biodiversity Area is an integrated offset for both Coal & Allied and WML.

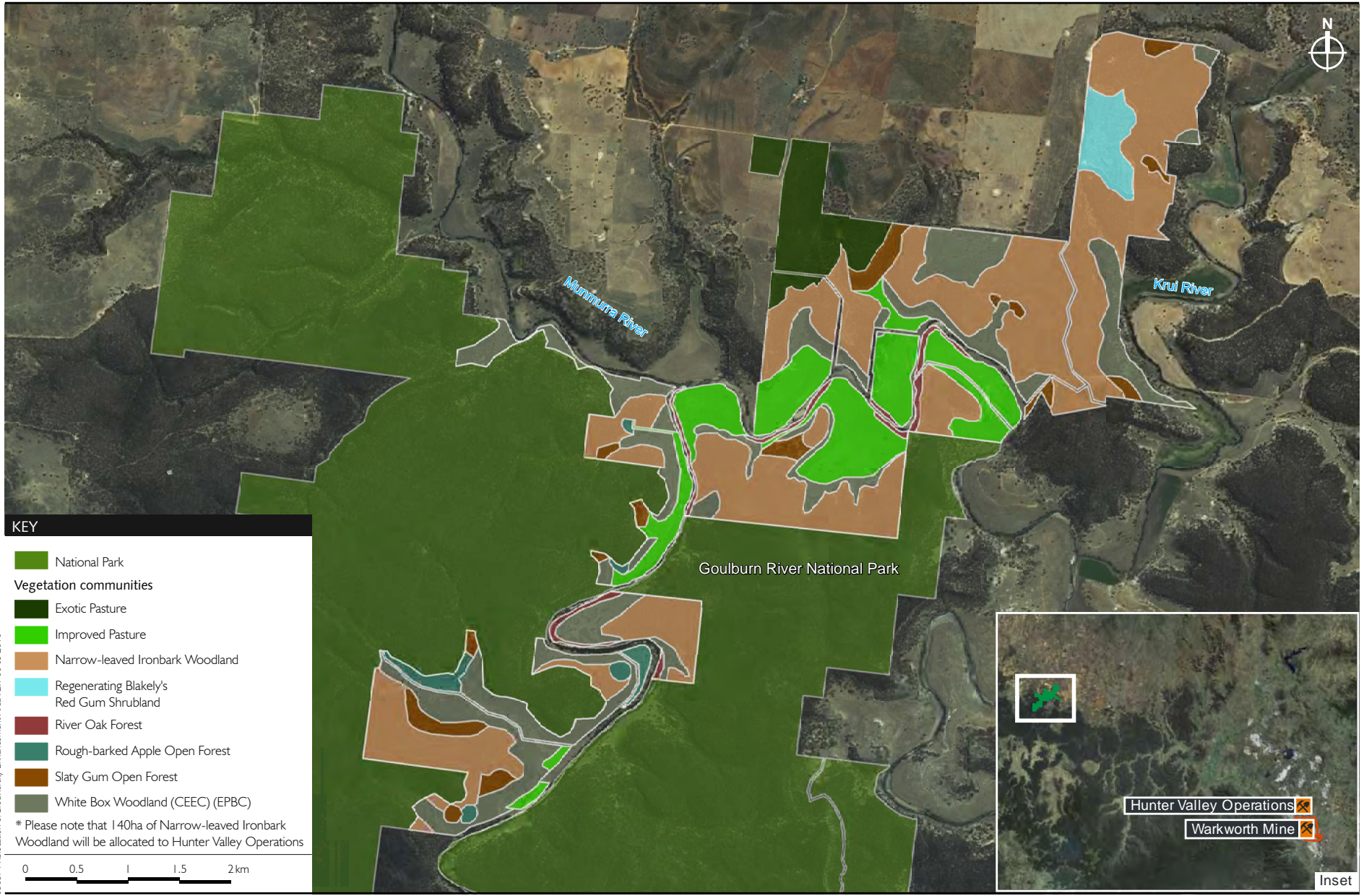
The Goulburn River Biodiversity Area offers long term protection and security of forest and woodland due to its location immediately adjacent to the Goulburn River National Park, see Figure 2.1. The implementation of the Goulburn River Biodiversity Area, an area of 1,562ha (of which a 140ha offset for

HVO South) when coupled with strong biodiversity management practices and long term security of the land for conservation purposes would produce a net improvement in biodiversity outcomes.

2.6 Monitoring and management plans

The Goulburn River Biodiversity Area will be reserved for long term conservation and will be managed by the proposed Warkworth Biodiversity Management Plan which has been prepared for all the offsets for the Proposed Warkworth Extension including the Goulburn River Offset and is included in Annex E of the *Proposed Warkworth Extension Environmental Assessment* (EMGA Mitchell McLennan 2010).

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Vegetation Communities within the Goulburn River Biodiversity Area

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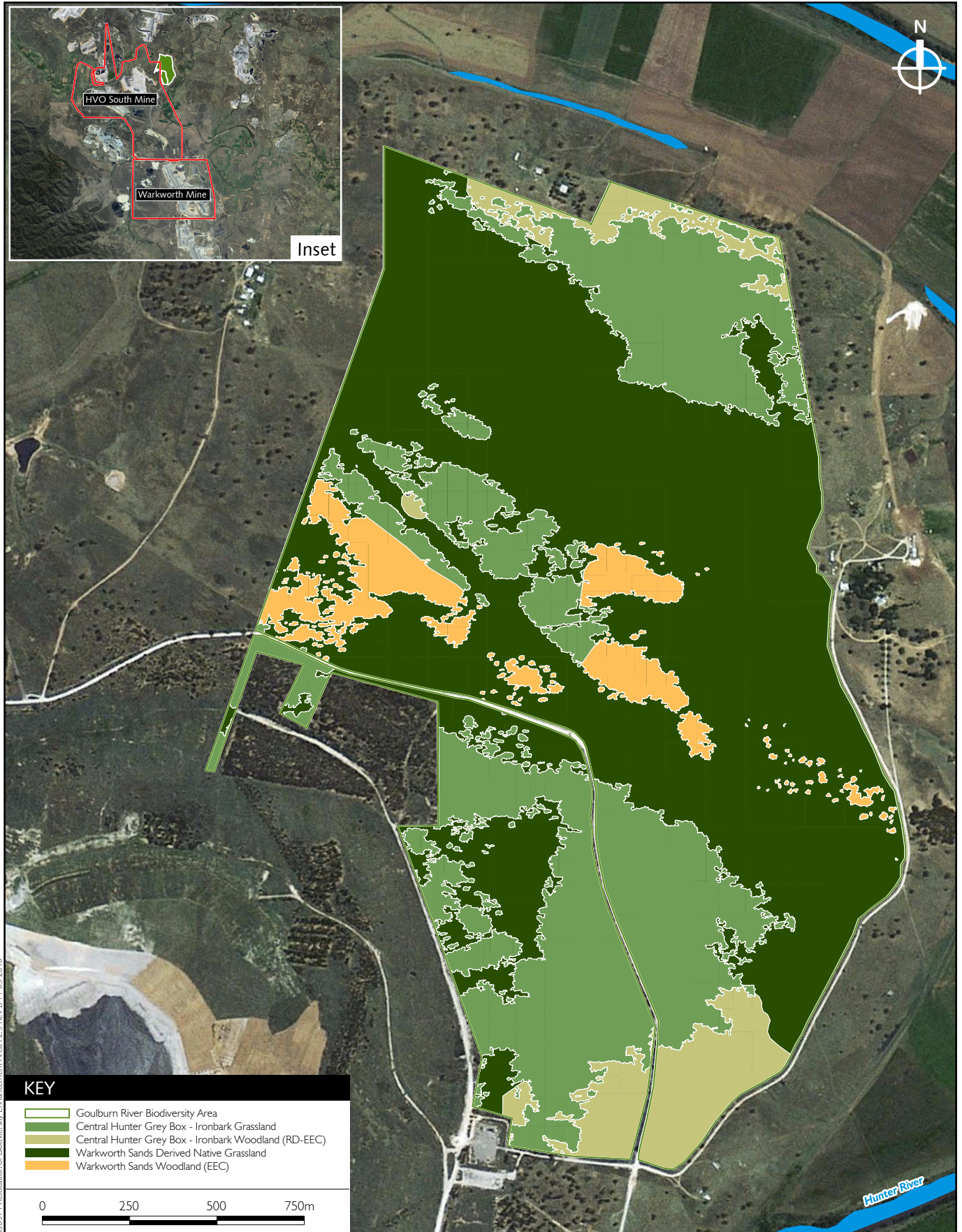
FIGURE 2.1

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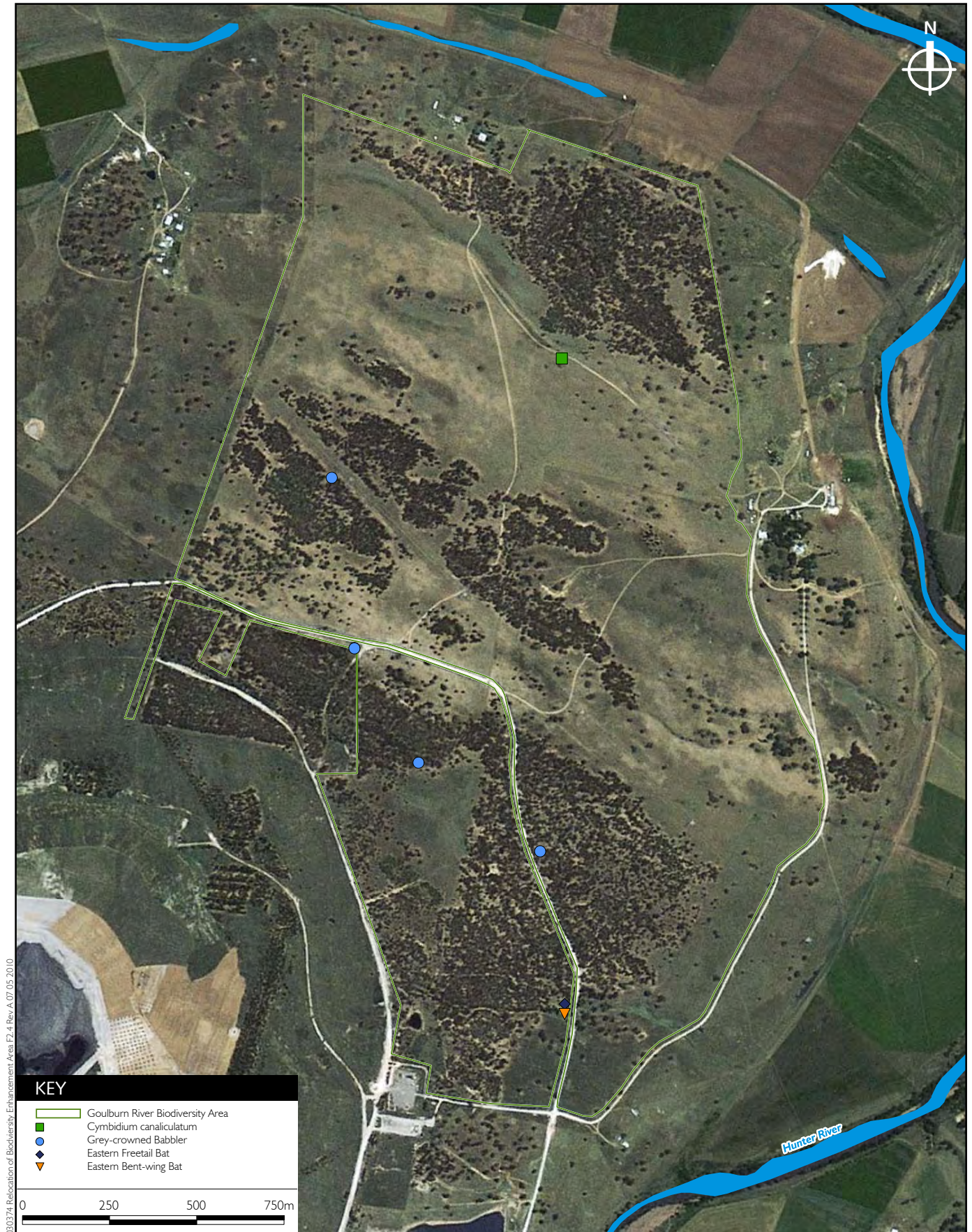
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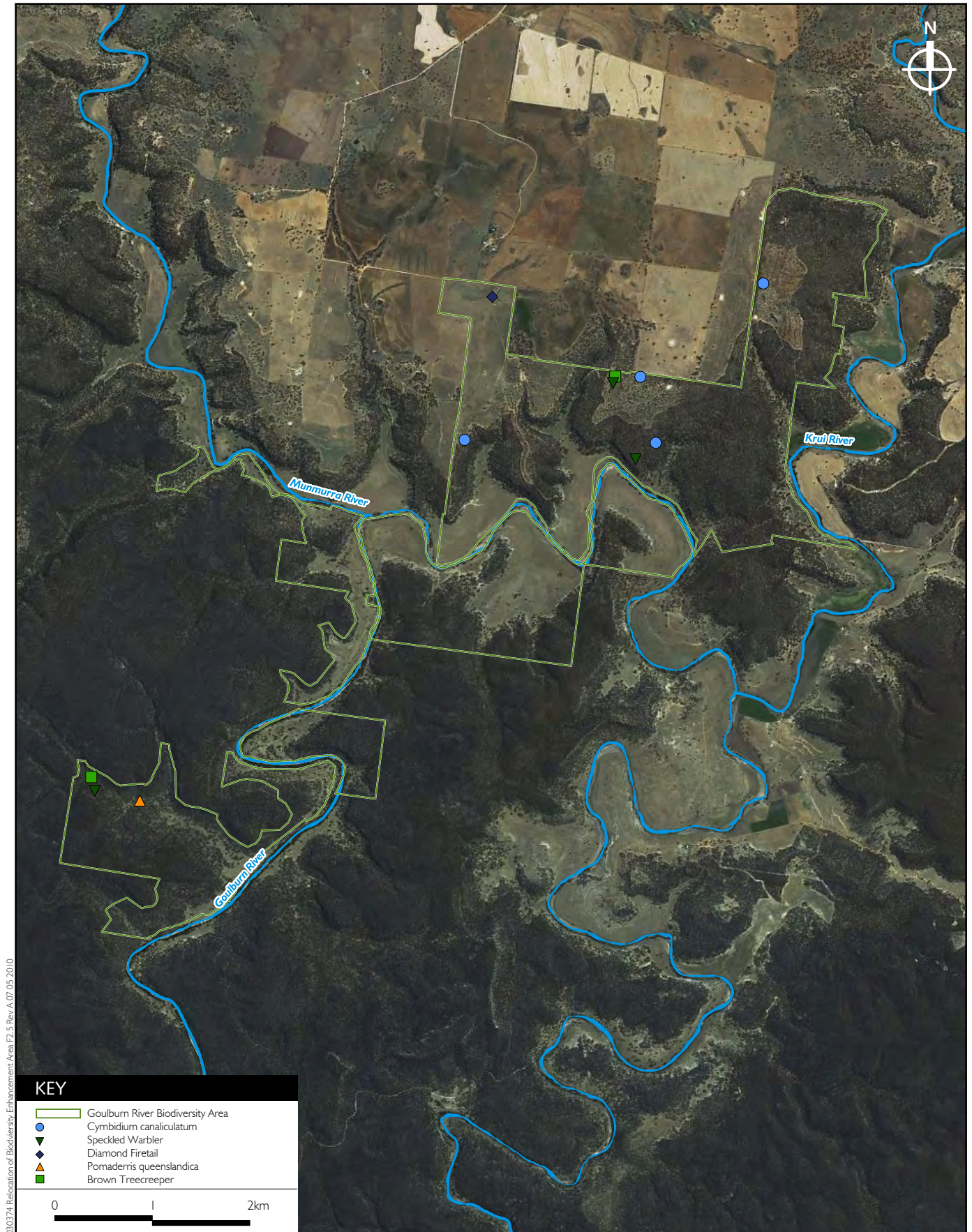


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Threatened Species within Northern Biodiversity Area
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FIGURE 2.4

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Threatened Species within Goulburn River Biodiversity Area
 Proposed Modification to HVO South Coal Project - Environmental Assessment

FIGURE 2.5

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3 Conclusion

The Archerfield Biodiversity Enhancement Area is provided to offset impacts for the life of the development caused by the clearing of native remnants (48ha) and regrowth (92ha) vegetation for the HVO South Coal Project. This proposed modification to HVO South Coal Project Approval 06_0261 is to reallocate remnant woodland vegetation and native enhancement areas (140ha) at Archerfield to an alternative site within the Goulburn River Biodiversity Area (see Figure 2.1). The modification proposed would allow Archerfield to be used as part of the Northern Biodiversity Area described in the proposed Warkworth Extension.

The ability to transfer the Archerfield Biodiversity Enhancement Area as part of the Northern Biodiversity Area for the proposed Warkworth Extension also has long term strategic conservation outcomes. The Northern Biodiversity Area has a high biodiversity value and ability to regenerate for a net positive impact on the WSW. The Northern Biodiversity Area provides an increase in the area of conservation from 140ha to 342ha. This area will offer long term protection of 123.3ha of woodland (including almost 20ha of WSW to be enhanced) as well as conservation, re-establishment and long term protection of some 195.8ha of WSW. A Biodiversity Management Plan has been prepared for all the offsets for the proposed Warkworth Extension including the Goulburn River Biodiversity Area.

The HVO South Coal Project required approximately 140ha of remnant vegetation to be conserved for the life of the development. HVO South as such is proposing to utilise an area of 140ha of remnant Narrow-leaved Ironbark woodland within the Goulburn River Biodiversity Area. This area has a high biodiversity value and ability to regenerate for a net positive impact on biodiversity. The Goulburn River site offers greater habitat complexity and strategic conservation outcomes than that provided by the current offset arrangements for HVO South.

Coal & Allied and WML have considered options for offsetting impacts for both the HVO South Coal Project and the proposed Warkworth Extension using an integrated approach aimed at achieving the best conservation outcomes for the impacts from their activities on EEC and threatened species to provide a net positive impact. Coal and Allied recognises the impacts of their operations on biodiversity and seeks to provide suitable offsets for these impacts. The combination of the Northern Biodiversity Area increasing the conservation of Archerfield to 342ha with the inclusion of the HVO South offset of 140ha into the Goulburn River Biodiversity Area allows the development of both local and regional strategies to maintain and improve the conservation management and connectivity of ecosystems and habitats.

Appendix A

Current Project Approval

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