

**LYNWOOD QUARRY –
BOX GUM WOODLAND
MANAGEMENT PLAN**

September 2013



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Prepared by
Umwelt (Australia) Pty Limited

on behalf of
Holcim (Australia) Pty Ltd

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APPENDICES

1	EPBC Act Approval 2012/6560 Conditions
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Glossary of Terms

BGW	Box Gum Woodland
BGWMP	Box Gum Woodland Management Plan
Box Gum Woodland	'White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland' Critically Endangered Ecological Community
CEEC	Critically Endangered Ecological Community
DECCW	Department of Environment, Climate Change and Water (now Office of Environment and Heritage)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
Ha	Hectares
Holcim Australia	Holcim (Australia) Pty Ltd
The Minister	Minister administering the EPBC Act (includes a delegate of the Minister)
MNES	Matters of National Environmental Significance
Mtpa	Million tonnes per annum
NSW	New South Wales
NPW Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities (Commonwealth)

1.0 Introduction

Lynwood Quarry (the quarry) is a hard rock quarry currently under construction west of Marulan in the Southern Tablelands region of NSW (refer to **Figure 1.1**). Holcim (Australia) Pty Ltd (Holcim Australia) was granted development consent in December 2005 by the NSW Minister for Planning to construct and operate the quarry with a production rate of up to 5 million tonnes per annum (Mtpa) (refer to **Figure 1.2**). Holcim Australia commenced construction of the quarry in late 2010, with operation of the quarry planned to commence in the last quarter of 2014.

During construction, ecological matters of national environmental significance (MNES) were identified within the site. In September 2012, the future works associated with construction and operation of the quarry were referred to the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). On 25 October 2012, the project was deemed to be a controlled action requiring assessment and approval under the EPBC Act. The project was assessed by preliminary documentation and on 13 September 2013 the project was granted approval under the EPBC Act (EPBC Ref: 2012/6560) subject to conditions.

This Box Gum Woodland Management Plan (BGWMP) has been developed to meet the requirements of the approval decision for the Lynwood Quarry. As stipulated in Condition 2 of the approval decision, which is described in **Section 1.3**, and summarised below, this management plan includes:

- management actions;
- regeneration and revegetation strategies; and
- an ecological monitoring program for box gum woodland.

1.1 Background

Ecological impacts associated with the development of the quarry include impacts on ecological MNES, specifically, the removal of 7.9 hectares of the EPBC-listed critically endangered ecological community (CEEC), White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (hereafter referred to as box gum woodland); and around 160 individuals of the EPBC-listed endangered plant species hoary sunray (*Leucochrysum albicans* var. *tricolor*), out of a very large total population of approximately 558,000 plants (refer to **Figure 1.3**).

A range of measures to avoid or mitigate impacts on MNES will be implemented as part of the project, however due to residual and unavoidable impacts on box gum woodland, a Biodiversity Offset Package is required.

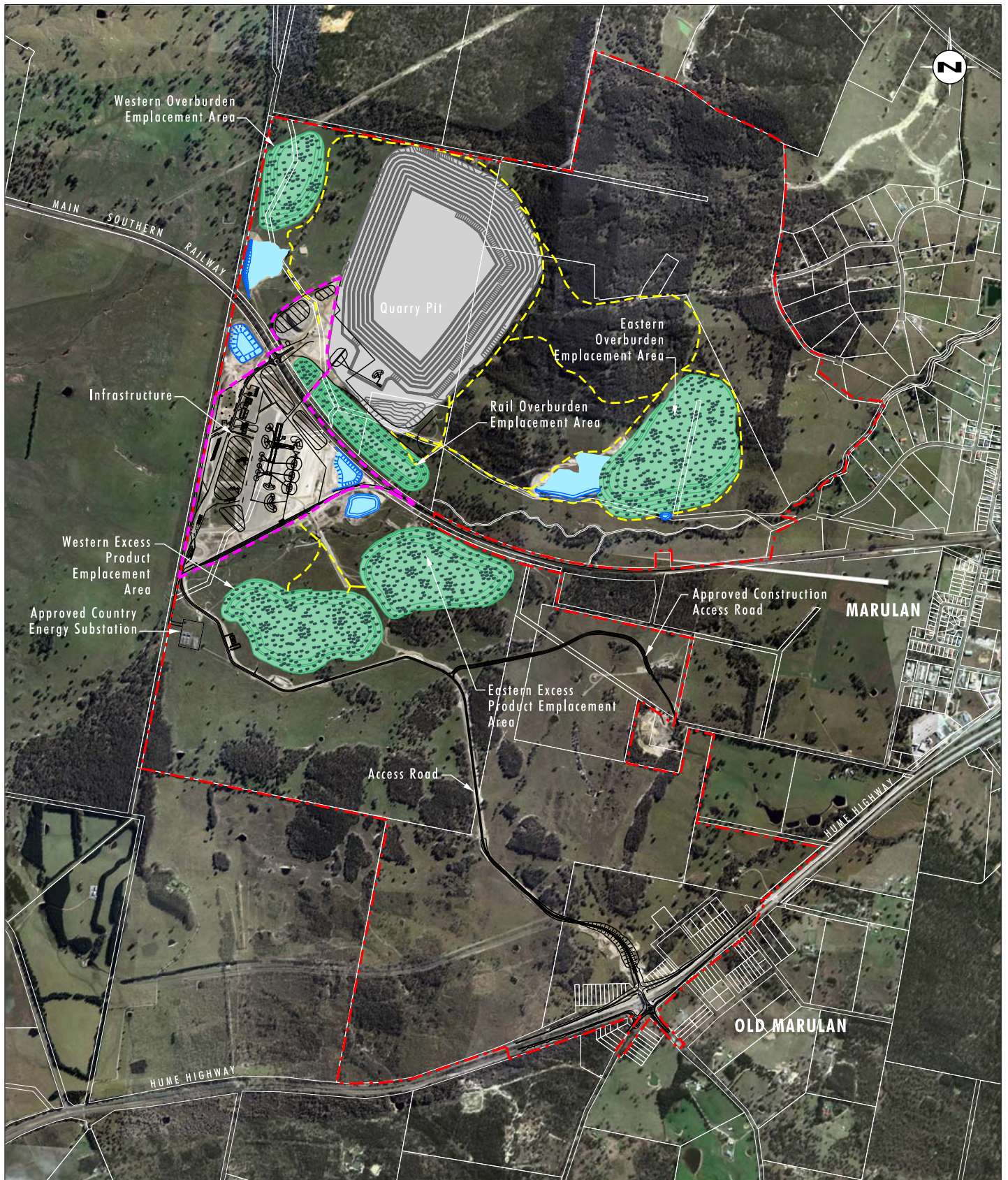
As shown in **Figure 1.3**, box gum woodland occurs in three discreet locations within the project area. In addition to the 7.9 hectare patch impacted by the action, there is also a small 1.4 hectare patch located to the north of the site access road, near Marulan Creek (refer to **Section 4.2**), and approximately 27 hectares to the south of the proposed access road which will be incorporated into the proposed Biodiversity Offset Area.

The Biodiversity Offset Package will comprise two components; a 185 hectare direct land offset (the Biodiversity Offset Area) in the south western part of Holcim Australia's holdings (refer to **Figure 1.4**) which will protect all box gum woodland to the south of the access road; and a package of direct actions (non-land) which will enhance quality and resilience of the Biodiversity Offset Area. These components are detailed in **Section 2.0**.



0 25 50 100km
Approx. Scale

FIGURE 1.1
Locality Plan



Base Source: LPI 2010, Holcim Australia (Aerial Photo May 2012), Google Earth (2011)

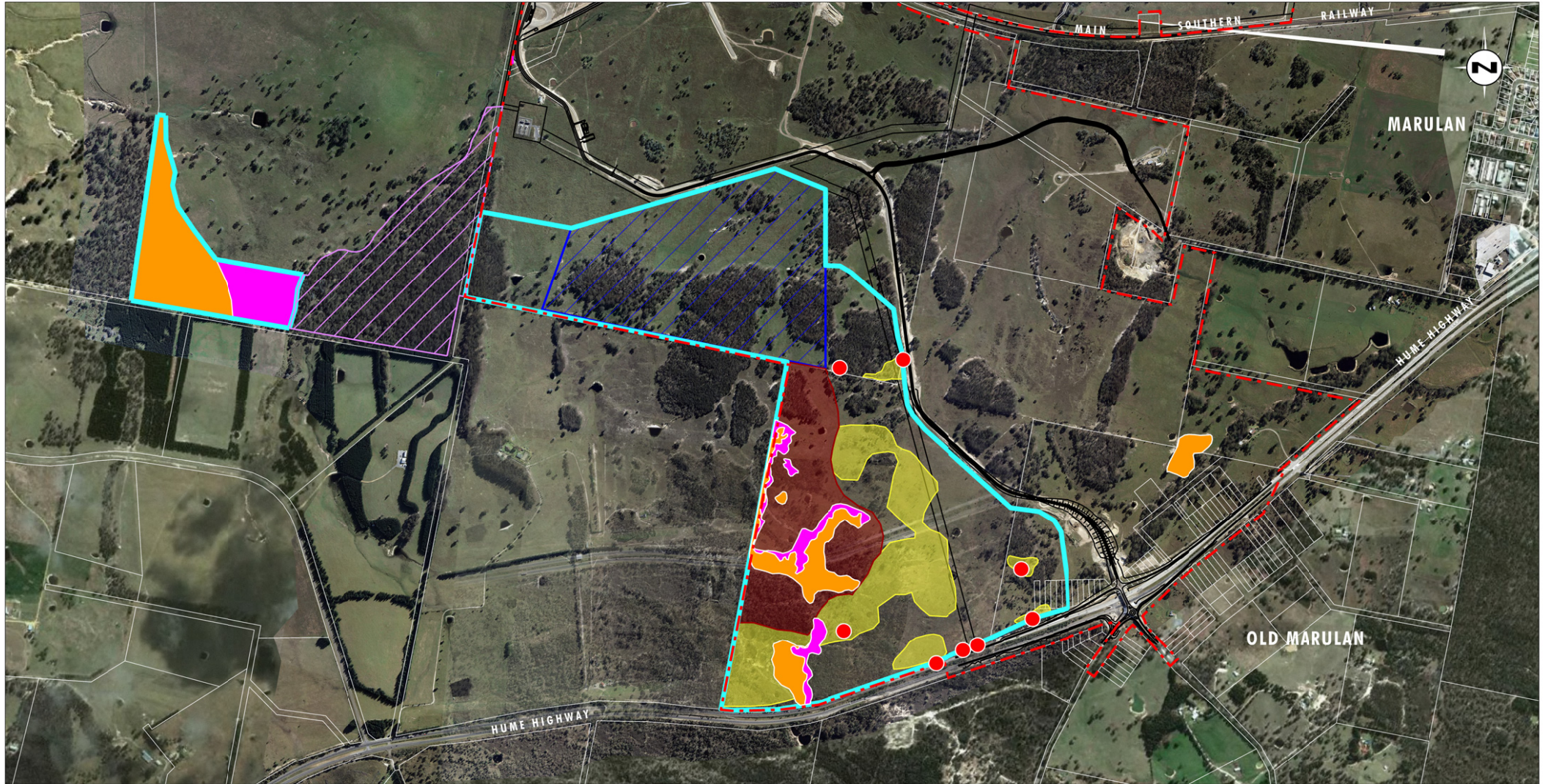
0 0.5 1 1.25km
1:25 000

Legend

- Project Area
- Infrastructure Area
- Haul Road
- NSW EP&A Act Approved Disturbance Area
- Quarry Pit
- Emplacement Area
- Rehabilitated Area
- Dam

FIGURE 1.2

Lynwood Quarry Project
- Indicative Year 30 Quarry Plan



Source: LPI 2010, Holcim Australia (Aerial Photo May 2012), Google Earth (2011)

0 0.25 0.5 1.0km
1:20 000

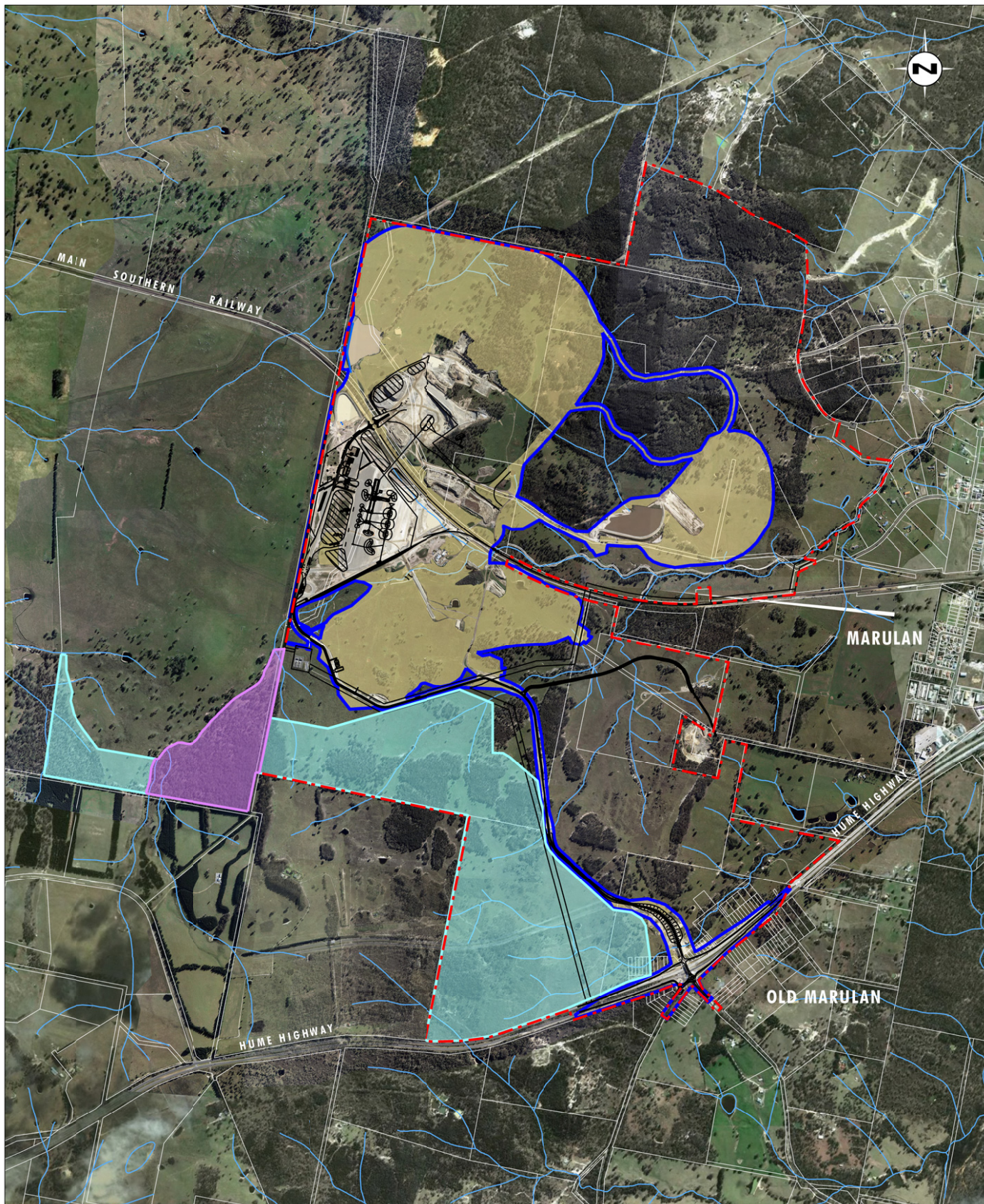
Legend

- - - Project Area
- Biodiversity Offset Area
- DIRECT LAND OFFSETS:**
- Box Gum Woodland Derived Native Grassland (CEEC)
- Box Gum Woodland (CEEC)
- Hoary Sunray Habitat
- Location of Hoary Sunray
- DIRECT ACTIONS:**
- Box Gum Woodland CEEC Regeneration Area

- COMPLEMENTARY ACTIONS:**
- Habitat Management Area
 - Cultural Heritage Management Zone

FIGURE 1.3

Box Gum Woodland and Hoary Sunray
Distribution, and Biodiversity Offset Area



Source: LPI 2010, Holcim Australia (Aerial Photo May 2012), Google Earth (2011)

0 0.5 1 1.5 km
1:30 000

Legend

- Project Area
- NSW EP&A Act Approved Disturbance Area
- EPBC Act Controlled Action Disturbance Area
- Biodiversity Offset Area
- Habitat Management Area
- Drainage

FIGURE 1.4
Overview of
Biodiversity Offset Area

1.2 Purpose and Scope

The purpose of this BGWMP is to provide a framework for the implementation of ecological management actions, regeneration and revegetation strategies, procedures, controls and monitoring programs for the Biodiversity Offset Area. Specifically, the strategy aims to protect and enhance the extent and condition of critically endangered box gum woodland, provide protection for hoary sunray habitat, increase local and regional biodiversity connectivity and protect sites of cultural heritage significance.

This BGWMP has been developed for a 185 hectare area in the south western part of Holcim Australia's Marulan holdings identified as the proposed Biodiversity Offset Area in EPBC Referral 2012/6560 and described further in **Section 2.0** of this BGWMP. The Biodiversity Offset Area was identified due not only to it being able to specifically target the MNES significantly impacted by the proposal, but it also adds further protection to other MNES and heritage values in addition to enhancing connectivity by protecting non-MNES remnant vegetation as part of an overall strategy to optimise biodiversity values.

The action must not commence until this BGWMP has been approved by the Minister. The approved BGWMP must be implemented (EPBC Approval Condition no. 2).

1.3 Regulatory Requirements

The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) deemed the project to be a 'controlled action' under the EPBC Act as it was likely to result in significant impacts on EPBC-listed threatened species and ecological communities. The project was assessed by preliminary documentation and on 13 September 2013 the project was granted approval under the EPBC Act (EPBC Ref: 2012/6560) subject to the preparation and approval of a BGWMP and related actions, as summarised below:

Approval Condition 2.

To assist in mitigating the impacts of the proposal on White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland (box gum woodland), the person taking the action must prepare and submit a Box Gum Woodland Management Plan (BGWMP) for the Minister's written approval prior to commencement of the Action. This BGWMP must include:

- a. management actions designed to improve the ecological quality of box gum woodland on the project area (refer to Map at Schedule 1) and proposed biodiversity offset area and protect it from degradation for the duration of the action's impact on box gum woodland.*
- b. regeneration and revegetation strategies for box gum woodland on the project area and the proposed biodiversity offset area (refer to Map at Schedule 1) to improve the ecological quality of these areas of box gum woodland.*
- c. an ecological monitoring program to monitor the success of the management actions in the BGWMP and define measureable targets of management actions, performance indicators and an adaptive management framework for the duration of the action's impact on box gum woodland.*
- d. Management of the offset site as above from commencement of the action.*

The action must not commence until the BGWMP is approved by the Minister. The approved BGWMP must be implemented.

Approval Condition 3.

To compensate for the loss of 7.9 hectares of box gum woodland, Holcim must secure the lands identified as the 'Proposed Biodiversity Offset Area' in the Map at Schedule 1 of this notice as a biodiversity offset and protect the lands for the duration of the action's impact through a conservation agreement under section 69 of the NSW National Parks and Wildlife Act 1979. The conservation agreement must state: 'This agreement must not be terminated without the written consent of 'The Minister Administering the Commonwealth Environment Protection and Biodiversity Conservation Act 1999'.

Other relevant conditions of approval are referred to within this plan and in the summary of commitments in **Section 8.0**. A copy of the conditions of approval is also presented in **Appendix 1**.

An assessment of the consistency of the Biodiversity Offset Area with the EPBC Offset Policy released in October 2012, and the accompanying Offset Assessment Guide, has been undertaken and is included in **Section 2.0**.

1.4 Authority Consultation

Consultation with SEWPaC has been undertaken as part of the EPBC Referral process and the BGWMP will be subject to Commonwealth review and approval.

In addition, Holcim Australia will consult with the NSW Office of Environment and Heritage (OEH) in relation to the preparation of a Conservation Agreement under Section 69 the NSW *National Parks and Wildlife Act 1974* (NPW Act) to provide for the long term conservation of the proposed Biodiversity Offset Area. The Conservation Agreement will be registered on the title of the land and would therefore be transferred should any future sale of the land occur.

1.5 Roles and Responsibility

Roles and responsibilities associated with the implementation of this BGWMP are presented in **Table 1.1** below.

Table 1.1 – Roles and Responsibilities

Title	Roles and Responsibilities
Operations Manager	<ul style="list-style-type: none"> • ensure that sufficient resources are allocated for the implementation of the BGWMP • authorising internal and external reporting requirements as well as subsequent revisions of the BGWMP • implementation of the BGWMP to ensure compliance

Table 1.1 – Roles and Responsibilities (cont.)

Title	Roles and Responsibilities
Environmental Officer	<ul style="list-style-type: none"> • coordinate the day to day implementation of the BGWMP, including the design and implementation of all ecological management and rehabilitation activities • ensure that sufficient time and resources are allocated to allow for the implementation of ecological management and rehabilitation strategies for the Biodiversity Offset Area • ensure that sufficient resources and time are allocated to implement the BGWMP monitoring programs • ensure that the results of the BGWMP monitoring programs are utilised to refine completion criteria for the site as well as to evaluate the effectiveness of regeneration/rehabilitation practices so as to facilitate continual improvement • periodically review progress against condition improvement targets • ensure all internal and external reporting requirements are met • facilitate that all relevant records are effectively maintained on site • ensure that personnel involved in carrying out and monitoring the BGWMP activities are appropriately qualified, licensed and experienced to undertake the task • manage/control access to biodiversity offset area • ensure staff and contractors are informed and trained where relevant in relation to controls on activities within the Biodiversity Offset Area
Holcim Staff and Contractors	<ul style="list-style-type: none"> • receive training regarding controls on activities within the Biodiversity Offset Area • observe boundaries of Biodiversity Offset Area when undertaking work on site • undertake activities in Biodiversity Offset Area in line with directions from Operations Manager and Environmental Officer

2.0 Offset Description

The Biodiversity Offset Package comprises two components. A direct land offset (the Biodiversity Offset Area), as described by **Section 2.1** and a package of direct actions (non-land) described in **Section 2.2**, which will enhance quality and resilience of the Biodiversity Offset Area.

2.1 Direct Land Offset

The Biodiversity Offset Area is shown on **Figure 1.4** and consists of a 185 hectare area located in the south western part of Holcim Australia's holdings. The Biodiversity Offset Area contains both land directly targeting box gum woodland, as well as complementary areas that include non-target MNES, cultural heritage and native vegetation management areas.

The Biodiversity Offset Area consists of two patches of box gum woodland, each containing both woodland and grassland forms of the community; a large patch of hoary sunray habitat; as well as a habitat management area and cultural heritage management area linking the two patches together, which comprise the complementary actions discussed in **Section 2.3**.

The Biodiversity Offset Area was identified as the preferred offset for the following reasons:

- the area specifically targets the MNES significantly affected by the proposal;
- adds further protection to other MNES and heritage values; and
- enhances connectivity with other habitat and riparian management areas, by protecting non-MNES remnant vegetation as part of an overall strategy to optimise biodiversity values.

The following table provides a summary of the key features of the Biodiversity Offset Area and the offset values as presented in the EPBC Referral. The Biodiversity Offset Area as described in this BGWMP is considered to be consistent with the requirements of the EPBC Environment Offsets Policy (SEWPaC 2012)¹.

Table 2.1 – Offset Statistics

Aspect	Quantity
Total area of offset	185 Ha
Area of BGW (Woodland form)	18.9 Ha
Area of BGW (Grassland form)	8.3 Ha
Total extant BGW in offset	27.2 Ha
Area of native pasture to be rehabilitated to BGW	22.0 Ha
Other MNES	
Hoary sunray habitat	27.3 Ha
Hoary sunray estimated numbers	200,000 individual plants
Summary	
Total impact to BGW	7.9 hectares comprised of: 7.4 Ha woodland form; and 0.5 Ha grassland form
Resulting offset ratio (extant vegetation)	27.2 Ha ÷ 7.9 Ha = 3.4
Resulting offset ratio, inclusive of rehabilitation	27.2 Ha + 22.0 Ha = 49.2 Ha 49.2 Ha ÷ 7.9 Ha = 6.2

¹ Australian Government (2012) *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Department of Sustainability, Environment, Water, Population and Communities (October 2012).

2.2 Additional Direct Actions

In addition to the direct land offsets shown in **Table 2.1**, a number of additional direct actions will be undertaken to improve the quality and resilience of the MNES protected within the land offsets. These are summarised in **Table 2.2**, and are detailed in the Offset Management Program in **Section 5.3**.

Table 2.2 – Summary of Direct Actions

Action	Description
Fencing and establishment of exclusion zones	Fence entire Biodiversity Offset Area and map on operational plans.
	Implement staged removal of grazing stock from Biodiversity Offset Areas supporting box gum woodland.
	Guide stock removal by outcomes of regeneration and weed monitoring.
Weed management	Undertake weed suppression
Regeneration and revegetation	Undertake natural regeneration of box gum woodland derived native grassland through the exclusion of stock.
	Revegetate 11 hectares of the 22 hectare proposed regeneration area (existing native pasture) within the Biodiversity Offset Area with direct seeding and also tube stock propagated from local provenance seed targeting box gum woodland species consistent with the community species list (Australian Government 2006a) ² .

2.3 Complementary Actions

In addition to the areas of the offset targeting box gum woodland, the offset also includes a significant area of hoary sunray habitat, as well as patches of non-MNES vegetation and an existing cultural heritage management zone. The offset creates a contiguous corridor through the south of Holcim Australia's holdings, which links to existing habitat management areas and stepping stone corridors (refer to **Figure 2.1**) that have been established under previous planning approvals.

The corridor that results from implementation of this offset package will provide further enhanced connectivity within the area south of Marulan. The Biodiversity Offset Area will be under consistent long-term management and along with the habitat and cultural heritage management areas already committed to by Holcim Australia, represents an important link from a regional perspective.

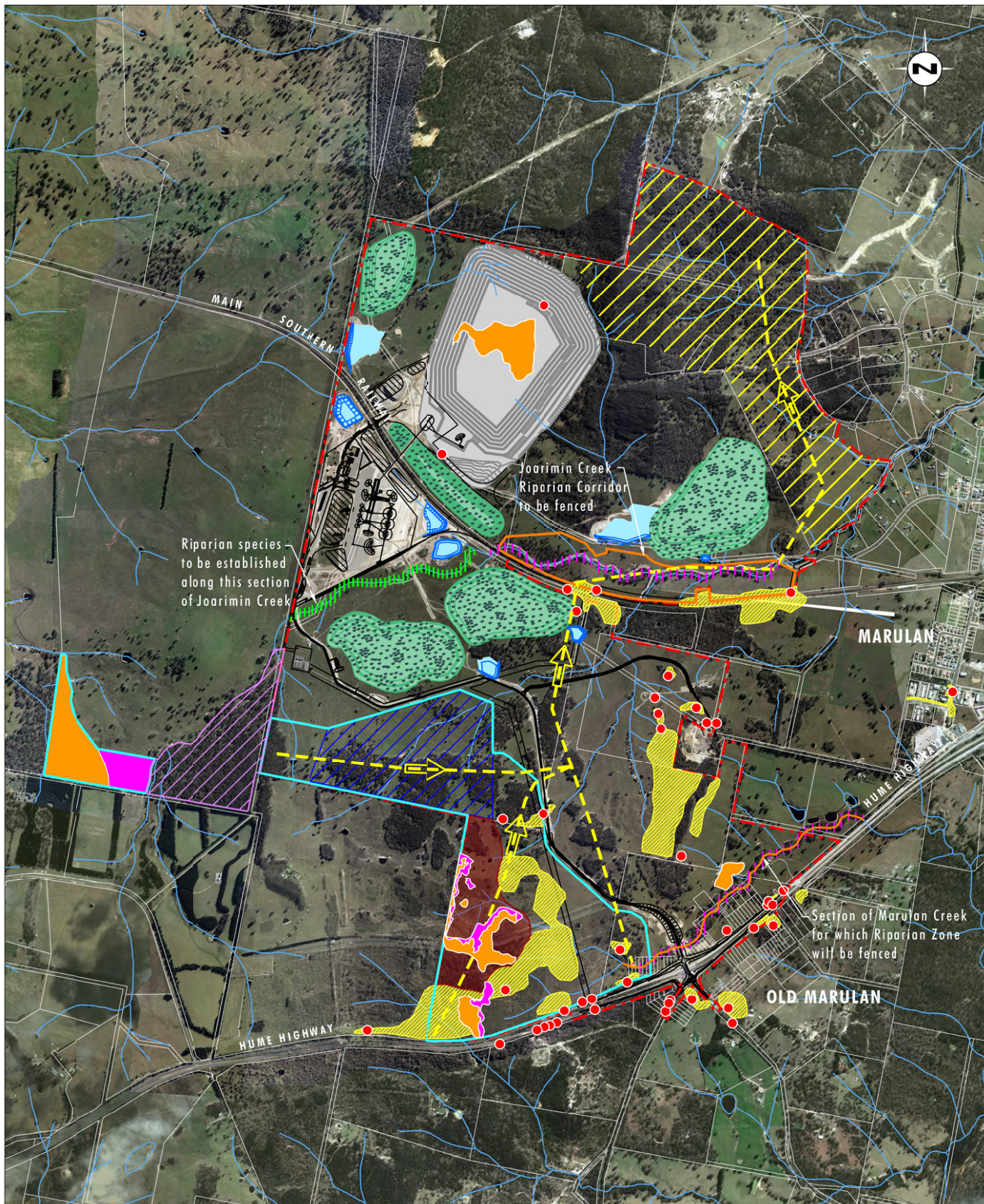
These areas will perform a significant connectivity role that will enhance the viability and value of the Biodiversity Offset Area.

The Biodiversity Offset Area also includes the existing cultural heritage management zone. This area forms part of the corridor linking the two patches of box gum woodland and the habitat management area. The cultural heritage management zone will continue to be managed in accordance with the existing Lynwood Quarry Aboriginal Heritage Management Plan (Umwelt 2011a)³; in addition to the existing Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b)⁴.

² Australian Government (2006a) *Species List for the EPBC Act Policy Statement – White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands*, Department of the Environment and Heritage, Canberra (May 2006).

³ Umwelt (Australia) Pty Limited (2011a) *Caring for Country Lynwood Quarry, Marulan Aboriginal Heritage Management Plan Revision 2*, Report prepared for Holcim (Australia) Pty Limited.

⁴ Umwelt (Australia) Pty Limited (2011b) *Lynwood Quarry Rehabilitation and Landscape Management Plan Revision 2*, Report prepared for Holcim (Australia) Pty Limited.



Source: LPI 2010, Holcim Australia (Aerial Photo May 2012), Google Earth (2011)

0 0.5 1 1.5km
1:30 000

Legend

- Project Area
- Existing Approved Habitat Management Area
- Existing Approved Core Riparian Corridor
- Existing Approved Cultural Heritage Management Zone
- Stepping-Stone Corridor
- Box Gum Woodland Derived Native Grassland (CEEC)
- Box Gum Woodland (CEEC)
- Hoary Sunray Habitat
- Location of Hoary Sunray
- Biodiversity Offset Area
- Box Gum Woodland CEEC Regeneration
- Habitat Management Area
- Drainage

FIGURE 2.1

**Biodiversity Offset Area
and Habitat Management Features**

2.4 Process for Establishing the Offset

Holcim Australia will prepare a Conservation Agreement under Section 69 of the NPW Act to provide for the long term conservation of the proposed Biodiversity Offset Area. The lands must be protected for the duration of the action's impact. The Conservation Agreement will be registered on the title of the land and would therefore be transferred should any future sale of the land occur. This will require consultation with the NSW Office of Environment and Heritage (OEH).

As per EPBC Approval Condition no. 3, the Conservation Agreement must state *'This agreement must not be terminated without the written consent of the Minister administering the Commonwealth Environment Protection and Biodiversity Conservation Act 1999'*.

Holcim Australia must provide evidence to SEWPaC that it owns the offset land, provide SEWPaC with attribute information and maps and evidence that it has lodged a conservation agreement application form with OEH prior to the commencement of the action (EPBC Approval Condition no. 4).

3.0 Objectives and Targets

Consistent with the EPBC Environment Offsets Policy (SEWPaC 2012), the Biodiversity Offset Area is to provide 'an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed development'. In this case the 'aspect of the environment' is box gum woodland as a matter of national environmental significance.

Holcim Australia commit to the following objectives and targets to ensure the maintenance or improvement of box gum woodland.

3.1 Objectives

The key management actions designed to enhance the quality and extent of box gum woodland include active and passive regeneration and revegetation initiatives. The specific objectives for revegetation and regeneration activities to be implemented to offset significant impacts as a result of the quarry include the following:

- enhance the ecological quality of existing box gum woodland within the Biodiversity Offset Area and protect it from degradation for the duration of the action's impact on box gum woodland;
- re-establish box gum woodland through regeneration and revegetation strategies in areas of native pasture that are consistent with the structure and floristics of the listed community; and
- improve connectivity between remnants of woodland within the Biodiversity Offset Area.

3.2 Targets

The following targets have been developed so that the required works are completed in accordance with this BGWMP, the conditions of approval and rehabilitation and biodiversity management objectives are achieved. Timeframes for targets are identified in **Section 4.4**.

General Management Targets

- no more than 7.9 hectares of box gum woodland has been cleared (EPBC Approval Condition no. 1);
- the Biodiversity Offset Area has been fenced;
- the Biodiversity Offset Area has been appropriately separated from ongoing quarry operations;
- an adaptive management process has been developed and implemented;
- the monitoring program is being implemented in line with **Section 6.0**; and
- a Conservation Management Agreement has been registered for the site under Section 69 of the NPW Act.

3.3 Performance Indicators

The following performance indicators are to be used to assess the findings of the monitoring program against the approval conditions.

- revegetation areas within the Biodiversity Offset Area contain a flora species assemblage characteristic of the EPBC listed box gum woodland community, including a range of vegetation structural elements such as trees, shrubs, ground cover forbs and grasses, and litter as per the box gum woodland listing advice (Australian Government 2006b)⁵ and recovery plan (DECCW 2011)⁶;
- success of the revegetation is in keeping with targets established under the *Lynwood Quarry Rehabilitation and Landscape Management Plan* (Umwelt 2011b) as summarised below:
 - vegetation has been established;
 - the rehabilitated area is stable;
 - the area is free of significant weed or feral animal problems;
 - the rehabilitated community is representative of the targeted vegetation community;
 - monitoring has indicated that natural regeneration is occurring; and
 - the area has been appropriately separated from ongoing quarry operations;
- success of the revegetation is in keeping with targets which have been developed for box gum woodland regeneration and revegetation areas:
 - no less than 75 percent of planted and regenerating trees are healthy and growing as determined by monitoring;
 - weeds comprise less than 5 percent (foliage cover) of the perennial ground storey; and
 - bare ground comprises no more than 15 percent of the ground layer;
- natural regeneration of the dominant overstorey species (white box, yellow box or Blakely's red gum) within the Biodiversity Offset Area regeneration zones (refer to **Figure 2.1**) is present as determined through monitoring;
- there is no evidence of pest animal infestation within offset area that are adversely impacting vegetation quality (e.g. rabbit warrens, fox dens, competition for hollows from wasps, bees, mynas, etc.); and
- accurate records are being maintained substantiating all activities associated with the BGWMP and approval conditions (EPBC Approval Condition no. 7).

⁵ Australian Government (2006b) *White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands Listing Advice*, Department of the Environment and Heritage, Canberra.

⁶ Department of Environment, Climate Change and Water NSW (2011) *National Recovery Plan for White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland*, Department of Environment, Climate Change and Water NSW, Sydney (May 2011).

3.4 Process for Review and Refinement of Targets

The preliminary targets as described in **Section 3.2** will be reviewed annually (during the annual reporting process) and revised as appropriate throughout the life of the quarry with the targets to be used as the basis for further refinement following:

- the commencement of ecological management activities; and
- consideration of the results of monitoring programs.

It is envisaged that this process will occur as part of subsequent reviews of the BGWMP and throughout the adaptive management process.

Progress against the targets will be assessed and discussed in an annual report to SEWPaC (refer to **Section 6.0**), which will include the identification of any failures of the criteria, and corrective measures taken to address any such issue or to improve offset management techniques. The monitoring program developed to assess the performance of the Offset Area is outlined in **Section 5.0**.

4.0 Management Actions

4.1 Existing Management Commitments

The existing State planning approval for the Lynwood Quarry required Holcim Australia to implement a range of management and improvement actions which are complementary to the management of the Biodiversity Offset Area. This BGWMP assumes the application of all existing management plans (as summarised in **Sections 4.1.1 to 4.1.3**) to the proposed Biodiversity Offset Area in addition to further measures to enhance or rehabilitate box gum woodland as described in **Section 4.4**.

All box gum woodland within the Biodiversity Offset Area would be subject to revegetation or rehabilitation, and ongoing management in accordance with the BGWMP.

All other box gum woodland within Holcim Australia's Lynwood Quarry holdings would be managed in accordance with existing management plans and approvals (refer to **Section 4.2**).

In the event of any inconsistency between this BGWMP and any other existing management plans, this BGWMP prevails to the extent of the inconsistency within the area subject to this plan.

4.1.1 General Native Vegetation Management

The Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b) commits to a number of activities for the management of native vegetation which would be applied to the Biodiversity Offset Area and the Habitat Management Area. These are listed below:

- exclusion of stock from operational and sensitive areas, including the Habitat Management Area, Cultural Heritage Management Zone and core riparian areas;
- feral animal and noxious weed control;
- management of erosion and sedimentation;
- management of fire regimes;
- rehabilitation of disturbed areas with local indigenous species;
- use of local indigenous species in landscaped areas and the linkage and integration of new areas with existing vegetated areas to improve ecological function and provide habitat;
- management of surface water;
- adaptive management, as required, if a previously unrecorded or assessed threatened species is identified in the Project Area during construction or operation;
- ongoing monitoring and maintenance of all revegetation works and habitat enhancement activities; and
- creation of habitat corridors linking isolated remnant vegetation stands.

4.1.2 Habitat Management Areas

An additional 29.8 hectare Habitat Management Area will form part of the corridor between the eastern and western portions of the Biodiversity Offset Area. Management of this area will involve enhancement of the floristic and fauna habitat values through restriction of access, management and general exclusion of stock, and planting or assisted regeneration of indigenous species in accordance with the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b).

While not necessarily achieving the same level of restoration as the Biodiversity Offset Area, these areas will perform a significant connectivity role that will enhance the viability and value of the Biodiversity Offset Area.

4.1.3 Rehabilitation of Disturbed Areas

Although outside of the Biodiversity Offset Area, land disturbed by the quarry will be rehabilitated in accordance with the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b) using native species with the objective of facilitating development of native vegetation communities comparable in composition to those presently found within the quarry area. Rehabilitation will be undertaken progressively throughout the life of the quarry as areas become available. Rehabilitation practice and staging will be managed in accordance with the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b).

Rehabilitation works will include the spreading of cleared vegetation (including weed-free mulch created during clearing) over the rehabilitated surfaces to provide organic matter and a local seed source, plus seeding of top-soiled areas with native species. A revegetation species list has been developed on the basis of extant vegetation communities and will enable use of species mixes targeted at development of vegetation communities appropriate to the landscape and adjacent remnant communities.

4.2 Management of Box Gum Woodland outside Biodiversity Offset Area

Within the project area, 1.4 hectares of box gum woodland will be retained outside the Biodiversity Offset Area. This patch will not be disturbed by the action, however it has not been included as part of the offset as it is located on the northern side of the access road, and is disconnected from the Biodiversity Offset Area.

This patch will be managed in accordance with existing management plans and approvals, in particular, the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b). As described in **Section 4.1.1**, management of this patch would include (but not be limited to) the following actions:

- exclusion of stock;
- feral animal and noxious weed control;
- management of erosion and sedimentation;
- management of fire regimes; and
- rehabilitation of disturbed areas with local indigenous species.

All other box gum woodland within the project area not disturbed by the action are within the offset area, with the management measures to be implemented for these areas outlined within this BGWMP.

4.3 Adaptive Management

A strong feedback loop between monitoring and management will be established. Adaptive management of the Biodiversity Offset Area will be responsive to any new ecological data that may arise through the monitoring described in **Section 5.0**, legislative change or any other studies completed at the site. This will enable a flexible approach to management requirements of the Biodiversity Offset Area, allowing ongoing feedback and refinement of the management strategy.

Adaptive management will be a key mechanism to address the risks to the successful implementation of this BGWMP (refer to **Section 1.5**). This will involve ongoing evaluation of management measures required to address issues such as weed infestation, bushfire, feral animals and revegetation failure.

The guide to undertaking strategic assessments (Australian Government 2012)⁷ describes the framework of adaptive management as a systematic process for continually improving management practices through learning from the outcomes of previous management. **Figure 4.1** is reproduced from the guide and illustrates the process of adaptive management to be implemented in this BGWMP.

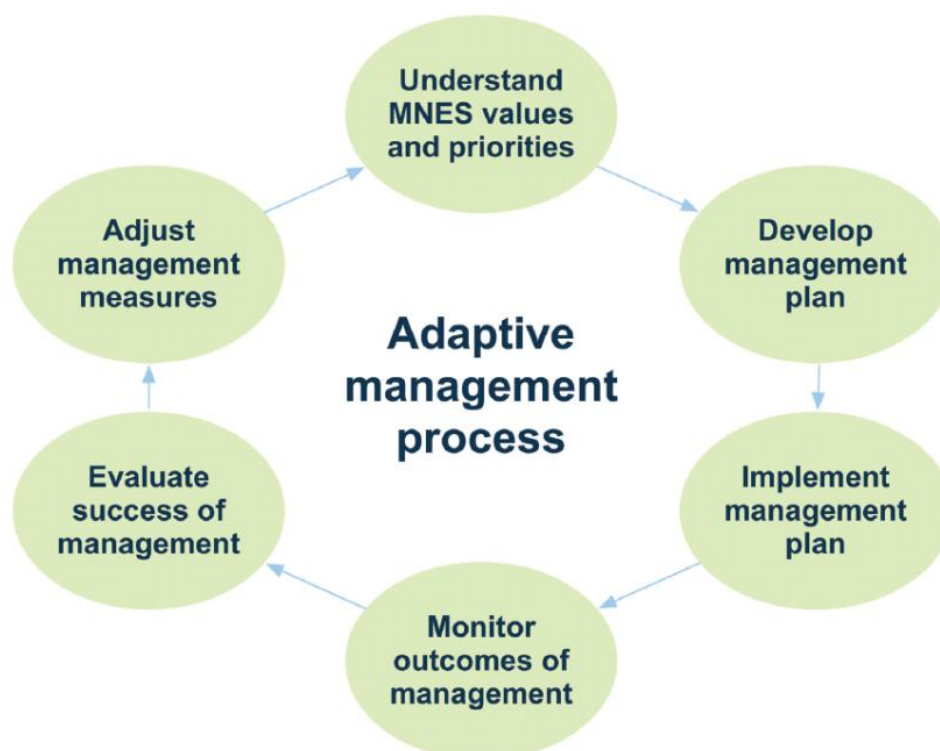


Figure 4.1 – Adaptive Management Process

Source: Figure 2 in Australian Gov't (2012)

⁷ Australian Government (2012) *A Guide to Undertaking Strategic Assessments: Environment Protection and Biodiversity Conservation Act 1999*, Department of Sustainability, Environment, Water, Population and Communities (November 2012).

The flowchart presented in **Figure 4.2** provides a summary of the hierarchy of management plans associated with the management of the Biodiversity Offset Area. The overarching management plan is the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b), which links in to the Aboriginal Heritage Management Plan and this BGWMP. The green elements of the flow chart represent components of the BGWMP, while blue elements represent established plans under the NSW State Government Approval.

Key components of the BGWMP will be the adaptive management continual improvement loop between the monitoring and management programs.

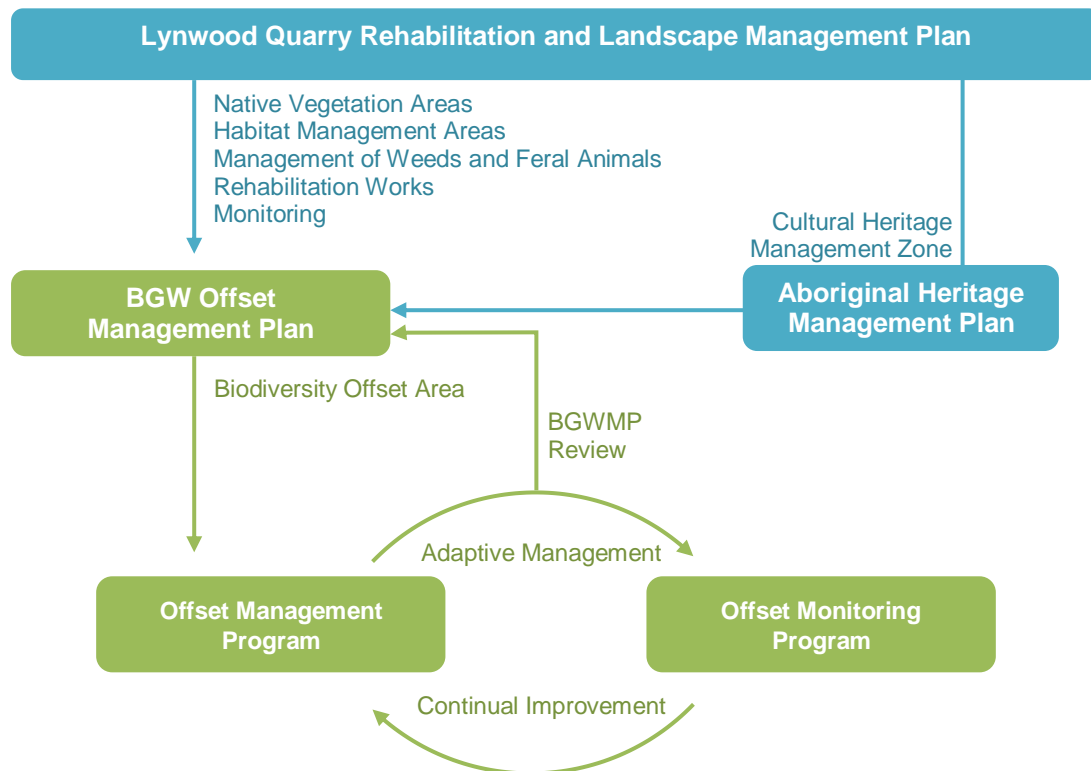


Figure 4.2 – Hierarchy of Management Plans

4.4 Offset Management Program

The Offset Management Program as shown in **Tables 4.1 to 4.4** details the direct actions and an estimate of the associated investment required by Holcim Australia to improve the quality and resilience of box gum woodland in the Biodiversity Offset Area.

Management and rehabilitation activities over an initial five year period estimated to a value of approximately \$100,000 (including a 10 percent contingency) will be funded by Holcim Australia.

Table 4.1 – Offset Management Program: Establishment of Biodiversity Offset Area

Activity	Description	Responsibility	Timeframe	Estimated Budget
Fencing	Fence entire Biodiversity Offset Area. Estimated cost includes installation of 2,550 metres of stock proof perimeter fence by fencing contractor.	Operations Manager	2013/14	\$38,250.00

Table 4.2 – Offset Management Program: Regeneration and Revegetation

Activity	Description	Responsibility	Timeframe	Estimated Budget
Natural regeneration of derived native grassland	Natural regeneration of derived native grassland through fencing and exclusion of stock.	Operations Manager	2013/14	See Table 4.1
Seed collection for direct seeding	Seed collection will target key box gum woodland using local provenance where available. 11 hectares (50%) of the existing native pasture will require active revegetation works in the form of tube stock planting or direct seeding. 5.5 hectares will be direct seeded and the remainder will be planted with tube stock. A seeding rate of 2000g/ha has been used with this mix to be comprised of both canopy and understorey species. It is not considered necessary to include grass species in the seed mix given the quality of existing groundcover.	Environmental Officer	2013/14	\$9,240.00
Site preparation for direct seeding	Depending on conditions at the time of seeding, light scarification of the ground surface may be required in order to create niche areas for seeds to germinate. In order to minimise the impact on the existing native grassland. This method will only be used where considered essential to seed germination and establishment.	Environmental Officer	2014/15	\$1,600.00
Direct seeding	It is assumed that 5.5 hectares of the site will be revegetated using direct seeding. Seeding will be conducted using a tractor with fertiliser spreader (no fertiliser to be used) and vermiculate (bulking agent).	Environmental Officer	2014/15	\$1,600.00

Table 4.2 – Offset Management Program: Regeneration and Revegetation (cont.)

Activity	Description	Responsibility	Timeframe	Estimated Budget
Tube stock propagation (including local provenance seed collection).	5.5 hectares of the existing native pasture will be revegetated using tube stock. The final target rate for box-gum grassy woodlands is 30/40 stems per hectare of canopy species with scattered shrubs (Rawlings et al 2010). In order to allow for seedling mortalities as revegetation areas mature, it is recommended that small trees (trees that have grown to less than 10cm diameter at breast height) have a density of at least 400 stems per hectare. As trees mature to dimensions greater than 10cm diameter and taller than breast height it is considered that 250 stems per hectare is a minimum target density (Rawlings et al 2010). In order to account for mortality of seedlings a planting rate of 600 stems per hectare has been allowed.	Environmental Officer	2013/14	\$5,940.00
Site preparation for tube stock planting	Slashing/mowing of 5.5 hectare site prior to planting.	Environmental Officer	2014/15	\$800.00
Planting of tube stock	It is assumed that 5.5 hectares of the site will be revegetated using tube stock and a planting rate of 600 stems per hectare has been allowed. Given that the native grasslands at the site are considered to be in good health no allowance has been made for deep ripping of the substrate. It is considered that deep ripping may expose the disturbed ground to infestation of exotic grass and broadleaf species.	Environmental Officer	2014/15	\$6,600.00

Table 4.3 – Offset Management Program: Operational Management Actions

Activity	Description	Responsibility	Timeframe	Estimated Budget
Weed management within revegetation/regeneration area	Weed density is considered to be low to moderate within the Biodiversity Offset Area. It is considered that weed management will be required to be undertaken on a biennial basis across 30% (approximately 7 hectares) of the Biodiversity Offset Area. Spraying will be timed to occur prior to flowering of weed species with follow up spraying to be conducted after the initial round of spraying has taken effect. This approach will ensure that weed management works provide an effective kill of target species. It is considered that 7 hectares could be covered in 1.5 days (3 days per year).	Environmental Officer	6 monthly until 2017/18	\$3,000.00 per annum
Monitoring of revegetation/regeneration areas	Annual monitoring will be conducted in order to determine the success or otherwise of revegetation works and the progress of natural regeneration. Permanent monitoring plots will be established within the Biodiversity Offset Area during this first year of monitoring. Includes 8 hours field work for two ecologists and reporting.	Environmental Officer	2015/16 2016/17 2017/18	\$3,220.00 per annum

Table 4.4 – Offset Management Program: Contingency Costs

Activity	Description	Responsibility	Timeframe	Estimated Budget
Adaptive management costs	Allowance for further land management works such as weed management, feral fauna control, supplementary direct seeding or tube stock propagation and planting if required.	Operations Manager	2016/17 2017/18	\$3,000.00 \$2,000.00
Total contingency costs	Allowance of 10% contingency to allow for price increases etc.	Operations Manager	Life of Project	\$9,369.00

5.0 Offset Monitoring Program

The Biodiversity Offset Area will be subject to ongoing monitoring and maintenance actions to ensure that the area progresses towards meeting the objectives and targets set out in **Section 3.0** in a timely manner. The monitoring program will monitor the success of the management actions, in addition to compliance with the approval conditions, against performance indicators described in **Section 3.3**.

Monitoring events will identify any corrective actions required or whether assistance is required to achieve targets. Monitoring events will target issues such as progression of regenerating native vegetation and the need for targeted weeding programs.

Monitoring requirements for the Biodiversity Offset Area are detailed in **Table 5.1**.

5.1 Monitoring Schedule

The following monitoring program has been developed to integrate with existing commitments as detailed in the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b).

Monitoring results will be assessed and utilised in the continual improvement of revegetation techniques and management actions, and will be documented as part of the annual reporting.

Table 5.1 – Monitoring Program

Focus	Monitoring	Frequency
Weeds	The Biodiversity Offset Area will be subject to six monthly weed assessments by the Environmental Officer. Outbreaks of weeds, in particular noxious weeds as defined by the <i>Noxious Weeds Act 1993</i> , will be controlled using suitable control measures such as spraying, slashing or manual removal. Where appropriate, the local weeds authority and Goulburn-Mulwaree Council will be consulted regarding weed control measures.	6 monthly from establishment of Biodiversity Offset Area.
Feral animals	Feral fauna species will be visually monitored during the Environmental Officer's six monthly inspections and during fauna surveys undertaken once every three years. Measures to control feral species will be implemented as required and in consultation with the Rural Lands Protection Board, where necessary.	Opportunistic and during scheduled 6 monthly and 3 yearly monitoring.
Retained vegetation	<p>The condition of retained vegetation is currently monitored on a three yearly basis by a suitably qualified and experienced ecologist to identify any change in habitat quality (either deterioration or improvement). Permanent plots are located within the northern Habitat Management Area, on Joarimin Creek, and in the Cultural Heritage Management Zone.</p> <p>The permanent 400 m² vegetation plot in the Cultural Heritage Management Zone within the Biodiversity Offset Area will form part of the Offset Monitoring requirements.</p> <p>The following will be recorded on a standard recording sheet:</p> <ul style="list-style-type: none"> • general health of vegetation; • evidence of natural regeneration; • occurrence and abundance of weed species; • signs of disturbance, either by stock or humans; • evidence of feral animals; and • any observable impacts of the operations, such as the effectiveness of sediment and erosion control structures. <p>At each vegetation plot, species diversity and structural composition of the vegetation will be recorded. This will allow a comparison of flora species and abundance over time.</p> <p>Photo monitoring will also be taken from established photo monitoring points at each monitoring site.</p> <p>Fauna will also be monitored at these sites. Details of fauna surveys are included in the Lynwood Quarry Rehabilitation and Landscape Management Plan (Umwelt 2011b).</p>	3 yearly.

Table 5.1 – Monitoring Program (cont.)

Focus	Monitoring	Frequency
Revegetation areas	<p>Following revegetation works, monitoring will be undertaken to assess the progress of the revegetation program with the aim of monitoring plant health and the need for implementation of management works or replacement planting or seeding.</p> <p>The Biodiversity Offset Area will be included in the existing monitoring schedule for revegetation areas. Specifically, the monitoring inspections will assess:</p> <ul style="list-style-type: none"> • the extent of the vegetative cover and species diversity, and any requirement for additional revegetation works to be undertaken; • the general health of the vegetation; • any occurrences of weed species in the revegetation area and any requirements for weed control activities; • feral animals and the need for control; • erosion and the need for repair of eroded areas; • fire management; • any signs of disturbance, either by animals or humans; and • the success of any management programs implemented following previous monitoring inspections. <p>In addition to annual monitoring, the Environmental Officer will inspect the Biodiversity Offset Area revegetated areas every three months for the first three years after the completion of rehabilitation works. This inspection will include:</p> <ul style="list-style-type: none"> • the general health of the vegetation and the need for fertilisation; • the growth of the vegetation and the need to replace any dead plants; • any erosion and the need for sediment and erosion controls to be implemented; • any occurrences of weed species in the revegetation area and any requirements for weed control activities; and • signs of disturbance and the need to access controls. 	<p>Three monthly for first three years following completion of rehabilitation works.</p> <p>Annually thereafter.</p>
Box gum woodland	<p>Ecological monitoring of retained box gum woodland patches will be undertaken annually against benchmark sites for a period of 5 years with the monitoring frequency to be reassessed after that time. This monitoring will assess the condition and recovery of box gum woodland at the site and provide data to drive the adaptive management of these areas to aid recovery.</p> <p>To allow for comparison between monitoring events, permanent plots and photographic monitoring points will be established. The purpose of the permanent monitoring plots will be to target natural regeneration and determine ground layer vegetation changes. Success of planting and other management actions will be monitored by estimation of growth and survival rates across a representative sample of the relevant areas.</p>	<p>Annually for years 0-5 following establishment of Biodiversity Offset Area.</p> <p>Biannually for years 5-11 (or for 6 years following successful implementation of rehabilitation).</p>

5.2 Risks to the Implementation of the BGWMP

A risk based approach to the implementation of this BGWMP has been considered such that risks to the establishment and management of the Biodiversity Offset Area are identified and a strategy developed to avoid or minimise the potential for them to occur. **Table 5.2** summarises the risks identified and sections of this BGWMP where they are discussed.

Table 5.2 – Risk Assessment for Implementation of BGWMP

		CONSEQUENCE (C)				
		Insignificant (F)	Minor (I)	Moderate (D)	Major (J)	Significant (S)
LIKELIHOOD (L)	Remote (R)	Negligible (N)	Negligible (N)	Very Low (L)	Low (W)	Medium (M)
	Unlikely (U)	Negligible (N)	Very Low (L)	Low (W)	Medium (M)	High (H)
	Possible (P)	Very Low (L)	Low (W)	Medium (M)	High (H)	Very High (V)
	Likely (L)	Low (W)	Medium (M)	High (H)	Very High (V)	Extreme (E)
	Almost Certain (C)	Medium (M)	High (H)	Very High (V)	Extreme (E)	Extreme (E)

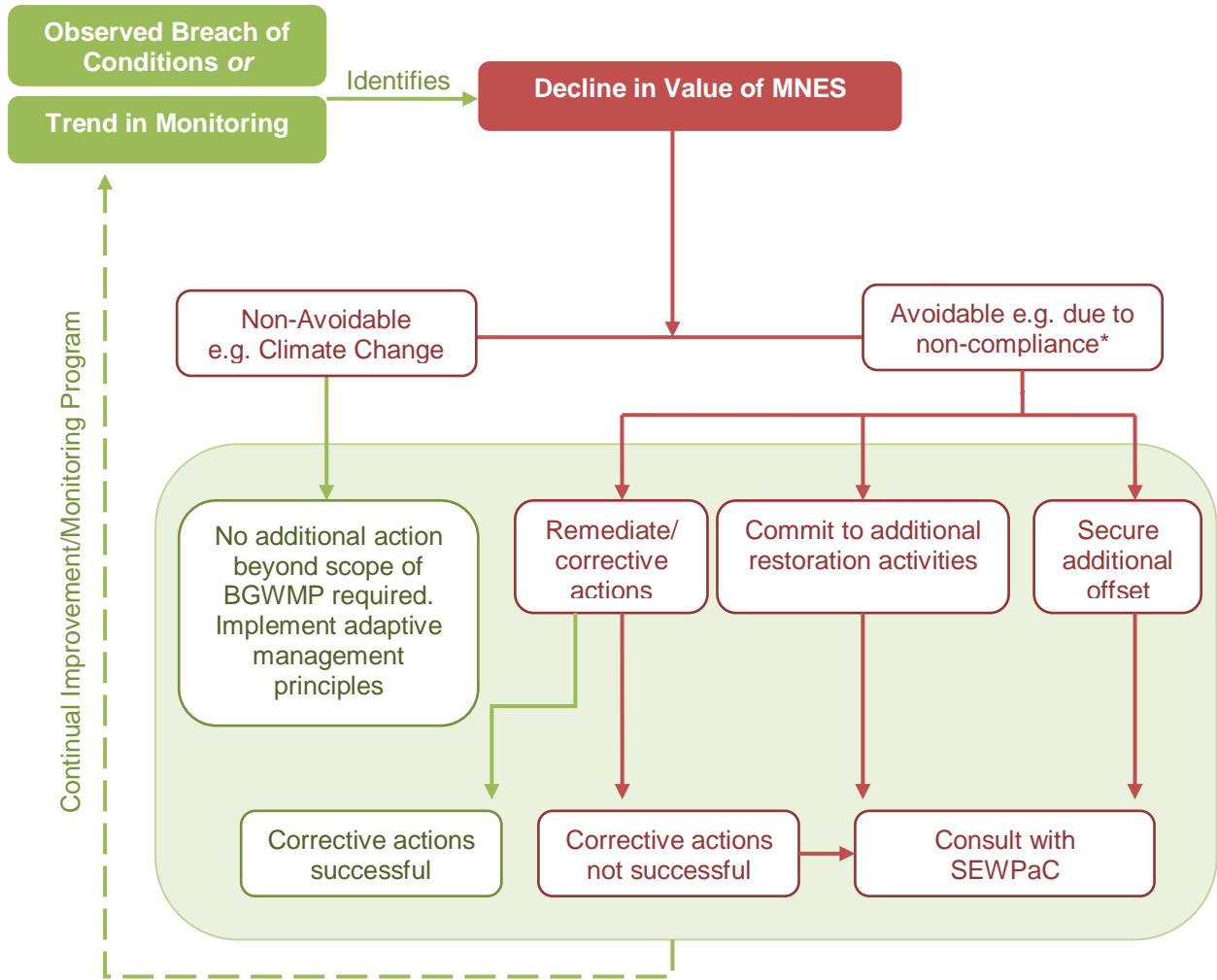
Risk	L	C	Rating	Addressed?
Inadequate resourcing to implement the management strategy	P	J	H	Section 4.4
Inadequate resourcing to meet the monitoring and reporting requirements	P	J	H	Section 4.4
Weed infestation within Biodiversity Offset Area leading to degradation of biodiversity values	P	D	M	Section 4 and 5
Pest and feral fauna species within Biodiversity Offset Area leading to degradation of biodiversity values	P	D	M	Section 4 and 5
Failure to meet revegetation targets within Biodiversity Offset Area	P	D	M	Section 4.3 and 5.3
Unauthorised/uncontrolled access to Biodiversity Offset Area leading to damage	L	D	H	Section 4.4
Biomass management impacting on offset values (e.g. grazing, stocking rates etc)	P	I	W	Section 4.4

5.3 Corrective Actions

As identified in the preceding section, there are a range of uncertainties associated with implementation of the BGWMP. In order to ensure delivery of the stated outcomes, and compliance with the approval conditions, a range of further actions are to be undertaken in the event it becomes apparent that performance indicators are not being met. Examples where this may occur include:

- habitat improvement targets are not achieved;
- habitat values as determined by regular monitoring and reporting identifies a declining trend; and
- populations of MNES decline.

The results of monitoring will feed into the adaptive management process (**Section 4.3**). The Environmental Officer will utilise the results of the monitoring activities to identify any corrective actions required to meet the objectives and targets specified in **Section 3.0**. An example of this is shown in **Figure 5.1** below.



* note: non-compliance with any conditions of approval must be reported to SEWPaC within 2 business days of becoming aware of the issue (EPBC Approval Condition no. 8).

Figure 5.1 – Identifying the Need for Corrective Actions

The following indicative triggers and corrective actions have been identified however would be subject to review based on the adaptive management process.

Table 5.3 – Corrective Action Measures⁸

Issue Identified by Monitoring	Potential Corrective Actions
Species Composition/Weed Infestation	
No regeneration of plants, or indicator species missing	<ul style="list-style-type: none"> • fence site and exclude grazing • use fire or smoke-water to stimulate germination • control exotic weeds to reduce competition • plant seedlings grown from quality seed
Low species diversity	<ul style="list-style-type: none"> • revegetate with high diversity patches
Exotic annual grasses dominate	<ul style="list-style-type: none"> • herbicide control of grasses • strategic burning • strategic grazing • nutrient removal by harvesting, scalping or carbohydrate addition • revegetate with native perennial grasses • 'no kill' cropping • dense tree revegetation to shade out weeds, followed by thinning
Exotic broadleaf weeds abundant or dominant	<ul style="list-style-type: none"> • use broadleaf herbicides • hand weed or chip • use bush regeneration principles to manage
Patches of perennial grass weeds occurring	<ul style="list-style-type: none"> • spot spray or dig out small clumps • crash graze periodically • manage grazing to stimulate native pasture • spring burn • monitor and maintain control
Patches of annual grass weeds	<ul style="list-style-type: none"> • crash graze or burn patches in spring to stop seed set of annual grasses • light grazing in autumn and winter to maintain native grass vigour • apply carbohydrate and sow <i>Themeda</i> • monitor and maintain control
Structure and Habitat	
Dense tree or shrub regeneration	<ul style="list-style-type: none"> • assess whether thinning is necessary • leave if patches are small and plants are native • thin with fire • thin manually
Low habitat value for wildlife	<ul style="list-style-type: none"> • add logs or branches • increase the number of vegetation layers in the patch • place nesting boxes for target species • control feral predators

⁸ Rawlings, K., Freudenberger, D. and Carr, D. (2010) *A guide to managing box gum grassy woodlands*, Department of the Environment, Water, Heritage and the Arts, Canberra (2010).

Table 5.3 – Corrective Action Measures⁹ (cont.)

Issue Identified by Monitoring	Potential Corrective Actions
Damage from Pest Species, Livestock etc	
Grazing and browsing damage to plants	<ul style="list-style-type: none"> • fence to exclude domestic, feral and native animals as necessary • change grazing regimes • control feral species
Soil disturbance from animals	<ul style="list-style-type: none"> • control feral species • reduce total grazing pressure to maintain groundcover
Feral predators killing or competing with wildlife	<ul style="list-style-type: none"> • control feral species at a landscape scale • remove exotic berry bushes providing habitat (hawthorn, pyracantha, cotoneaster, etc.)
Tree dieback from insect pressure, herbicide drift, water stress	<ul style="list-style-type: none"> • prevent stock camping beneath trees • scalp soil beneath tree canopy to remove nutrients; sow with natives such as red grass or <i>poa</i> • fence to prevent bark browsing • increase patch size through revegetation • re-vegetate with dense shrubs to increase diversity and insectivorous birds • do not fertilise and prevent fertiliser drift • avoid using defoliant near woodlands when windy

Note: Refer to Rawlings *et al*, 2010 for appropriate application of controls.

⁹ Rawlings, K., Freudenberger, D. and Carr, D. (2010) *A guide to managing box gum grassy woodlands*, Department of the Environment, Water, Heritage and the Arts, Canberra (2010).

6.0 Reporting Requirements

6.1 Record Keeping

As per EPBC Approval Condition no. 7, Holcim Australia will maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the Biodiversity Offset Area and the BGWMP.

These records may be subject to audit by SEWPaC or an independent auditor, as described in **Section 6.3**.

6.2 Annual Report

Within three months of every 12 month anniversary of the commencement of the action, Holcim Australia will publish an annual report on its website. Documentary evidence providing proof of date of publication must also be provided to SEWPaC at the time of publishing (EPBC Approval Condition no. 8).

The annual report will contain the following information:

- compliance with each of the conditions of approval;
- description of implementation of the BGWMP as specified in the conditions of approval;
- rehabilitation and management activities undertaken within the reporting period, including estimated costs;
- results of monitoring events for the reporting period; and
- required amendments to the management or monitoring processes as identified by the adaptive management mechanism.

Utilising the adaptive management mechanism outlined in **Section 4.3**, the results of monitoring and management works undertaken will be utilised to inform updates to the management controls to be undertaken in the Biodiversity Offset Area.

Annual reporting and monitoring will continue for six years after the successful implementation of rehabilitation, i.e. all the targets in **Section 3.2** are met consistently for 6 consecutive years. Reporting thereafter will be in accordance with the commitments identified in **Section 8.0**.

6.3 Independent Audit

If directed by the Minister, Holcim Australia must ensure that an independent audit of compliance with the conditions of approval is conducted, and a report submitted to the Minister. The auditor must be approved by the Minister prior to the commencement of the audit (EPBC Approval Condition no. 9).

7.0 Review of Management Plan

This BGWMP will be reviewed internally every 3 years. The BGWMP may be updated in between this period if:

- updated management techniques are identified; or
- the adaptive management framework identifies that current management methods are not effective and require amendment.

Amendments to the BGWMP in response to adaptive management and continual improvement requirements that are not inconsistent with the conditions of approval (EPBC 2012/6560) do not need to be submitted to SEWPaC for approval. Notwithstanding this, if Holcim Australia wish to undertake any activities other than in accordance with the BGWMP as specified in the conditions of approval, a revised version of the BGWMP must be submitted to SEWPaC for the Minister's written approval (EPBC Approval Condition no. 10).

The Minister may also request specific revisions be made to the BGWMP if they believe that it is necessary or convenient for the better protection of the listed ecological community. This revised BGWMP must be submitted to SEWPaC for the Minister's written approval (EPBC Approval Condition no. 11).

8.0 Summary of Commitments

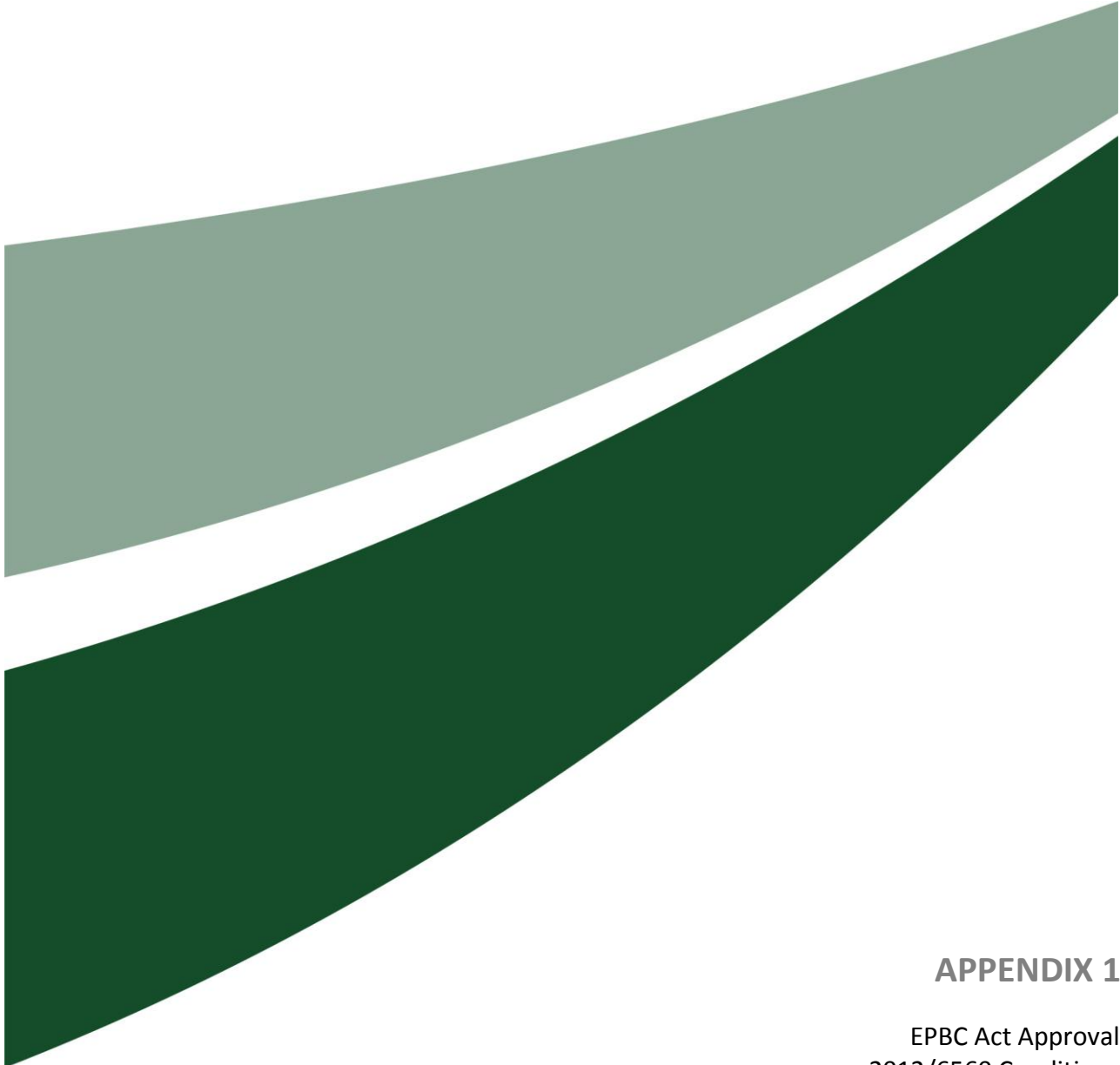
The following **Table 8.1** summarises the commitments made in this BGWMP.

Table 8.1 – Summary of Commitments

Action	Commitment
Publically publish the BGWMP	This BGWMP will be published on Holcim Australia's website within one month of approval by SEWPaC (unless agreed otherwise by the Minister).
Long term conservation of the Biodiversity Offset Area	Establishment of a conservation agreement under Section 69 the NSW <i>National Parks and Wildlife Act 1974</i> which would then be listed on the title of the land to ensure it is transferred with any future land sale. Evidence that the conservation agreement application form has been lodged with OEH must be provided to SEWPaC prior to commencement of action.
Direct land offset of 27.2 hectares of box gum woodland	Set aside and fence Biodiversity Offset Area and commence management activities in first year of offset establishment.
Rehabilitation of 22 hectares of native pasture to box gum woodland	Focus on re-establishment of a canopy and removal of weed species with a secondary objective of enhancing understorey diversity. Commence rehabilitation works including reseeding/tube stock planting, and active weed management in first year of offset establishment.
Direct actions to benefit land offsets	Undertake regeneration activities, management and monitoring as per the Offset Management Program in Section 4.4 .
Enhancement of connectivity between patches of EPBC box gum woodland through management of non-EPBC vegetation	Re-establish continuous canopy connectivity between the eastern and western ends of the Biodiversity Offset Area through habitat management and rehabilitation activities.
Monitoring of Biodiversity Offset Area	0-5 years after establishment. Annual monitoring and reporting to determine success of rehabilitation and general condition including weed and pest animal presence, presence of hoary sunray and other MNES.
	5-11 years (or for 6 years following successful implementation of rehabilitation). Biennial monitoring of condition and performance of rehabilitation.
	12 years+. Monitoring and reporting as per the Rehabilitation and Landscape Management Plan (Umwelt 2011b).
Adaptive management	Implement an adaptive management element into ongoing management of Biodiversity Offset Area.
Annual Reporting	Annual report published on website, and evidence of proof of publication to SEWPaC within 3 months of the anniversary of commencement of the action.
Reporting non-compliances	All non-compliances with the conditions of approval must be reported to SEWPaC within 2 business days.
Record keeping	Holcim Australia will maintain records of all activities undertaken in relation to the Biodiversity Offset Area and BGWMP.
Independent audit	If requested by the Minister, Holcim Australia must ensure that an independent audit of compliance with the conditions of approval is conducted.
Update of BGWMP	Every three years or as required based on adaptive management program. For any activity not consistent with the conditions of approval, a revised BGWMP must be provided to SEWPaC for review and approval.
Resourcing	Holcim Australia to commit to provide funding for ongoing resources to ensure compliance with BGWMP.

9.0 References

- Australian Government 2006a. *Species List for the EPBC Act Policy Statement - White Box – Yellow Box – Blakely’s Red Gum Grassy Woodlands and Derived Native Grasslands*, Department of the Environment and Heritage, Canberra (May 2006).
- Australian Government 2006b. *White Box – Yellow Box – Blakely’s Red Gum Grassy Woodlands and Derived Native Grasslands Listing Advice*, Department of the Environment and Heritage, Canberra (2006).
- Australian Government 2012. *A Guide to Undertaking Strategic Assessments: Environment Protection and Biodiversity Conservation Act 1999*, Department of Sustainability, Environment, Water, Population and Communities (November 2012).
- Department of Environment, Climate Change and Water NSW 2011. *National Recovery Plan for White Box - Yellow Box - Blakely’s Red Gum Grassy Woodland and Derived Native Grassland*, Department of Environment, Climate Change and Water NSW, Sydney (May 2011).
- Department of Sustainability, Environment, Water, Population and Communities 2012. *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, (October 2012).
- Rawlings, K., Freudenberger, D. and Carr, D. 2010. *A guide to managing box gum grassy woodlands*, Department of the Environment, Water, Heritage and the Arts, Canberra.
- Umwelt (Australia) Pty Limited 2011a. *Caring for Country Lynwood Quarry, Marulan Aboriginal Heritage Management Plan Revision 2*, Report prepared for Holcim (Australia) Pty Limited.
- Umwelt (Australia) Pty Limited 2011b. *Lynwood Quarry Rehabilitation and Landscape Management Plan Revision 2*, Report prepared for Holcim (Australia) Pty Limited.



APPENDIX 1

EPBC Act Approval
2012/6560 Conditions



EPBC Ref: 2012/6560

Mr Stephen Mossie
General Manager – NSW & ACT Aggregates
Holcim (Australia) Pty Ltd
PO Box 5697
WEST CHATSWOOD NSW 1515

Dear Mr Mossie

**Decision on Approval
Lynwood Quarry, NSW (EPBC 2012/6560)**

I am writing to you in relation to a proposal to expand and operate an existing quarry pit and construct internal haul roads and rail spur and loading facility located approximately 1km west of the township of Marulan NSW.

I have considered the proposal in accordance with Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and have decided to grant an approval to Holcim (Australia) Pty Ltd. The details of my decision are attached. The proposal must be undertaken in accordance with the conditions specified in the approval.

I would appreciate your assistance by informing me when you provide the information specified in the conditions and who will be the contact person responsible for the administration of the approval decision.

You should also note that this EPBC Act approval does not affect obligations to comply with any other laws of the Commonwealth, state or territory that are applicable to the action. Neither does this approval confer any right, title or interest that may be required to access land or waters to take the action.

The department has an active audit program for proposals that have been referred or approved under the EPBC Act. The audit program aims to ensure that proposals are implemented as planned and that there is a high degree of compliance with any associated conditions. Please note that your project may be selected for audit by the department at any time and all related records and documents may be subject to scrutiny. Information about the department's compliance monitoring and auditing program is enclosed.

The department has recently published an *Environmental Impact Assessment Client Service Charter* (the Charter) which outlines the department's commitments when undertaking environmental impact assessments under the EPBC Act. A copy of the Charter can be found at: <http://www.environment.gov.au/epbc/publications/index.html>.

If you have any questions about this decision, please contact the project manager, Pat Guinane, by email to Patrick.Guinane@environment.gov.au, or telephone (02) 6275 9010 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely



James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments

13 September 2013



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Approval

Lynwood Quarry, Marulan NSW (EPBC 2012/6560)

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted Holcim (Australia) Pty Ltd

proponent's ACN 099 732 297

proposed action To establish and operate a quarry pit, construct internal haul roads, and a rail spur and loading facility at Marulan, NSW (see EPBC Act referral 2012/6560).

DECISION to approve:

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approve
Listed migratory species (sections 20 & 20A)	Approve

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 January 2038

Decision-maker

name and position

James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments

Signature

date of decision

13 September 2013

Proposed Conditions of Approval:

1. The person taking the action must not clear more than 7.9 hectares of the ecological community *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.
2. To assist in mitigating the impacts of the proposal on *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (box gum woodland), the person taking the action must prepare and submit a Box Gum Woodland Management Plan (BGWMP) for Minister's written approval prior to commencement of the action. The BGWMP must include;
 - a. Management actions designed to improve the ecological quality of box gum woodland on the project area (refer to Map at Schedule 1) and proposed biodiversity offset area and protect it from degradation for the duration of the action's impact on box gum woodland.
 - b. Regeneration and revegetation strategies for box gum woodland on the project area and the proposed biodiversity offset area (refer to Map at Schedule 1) to improve the ecological quality of these areas of box gum woodland.
 - c. An ecological monitoring program to monitor the success of the management actions in the BGWMP and define measurable targets of management actions, performance indicators, and an adaptive management framework for the duration of the action's impact on box gum woodland.
 - d. Management of the offset site as above from commencement of the action.

The action must not commence until the BGWMP is approved by the Minister. The approved BGWMP must be implemented.

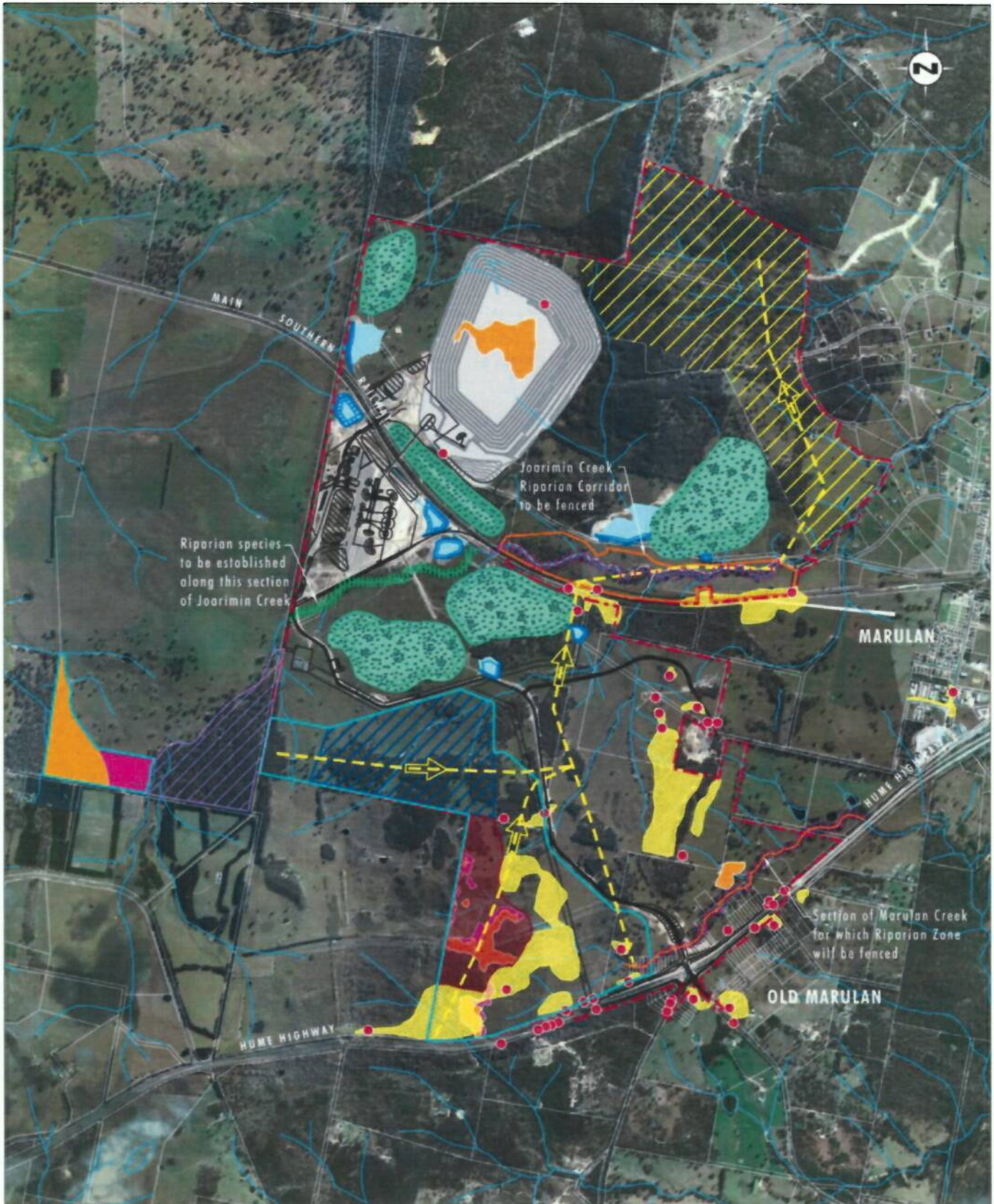
3. To compensate for the loss of 7.9 hectares of box gum woodland the person taking the action must secure the lands identified as the '*Proposed Biodiversity Offset Area*' in the Map at Schedule 1 of this notice as a biodiversity offset and protect the lands for the duration of the action's impact through a conservation agreement under section 69 of the NSW *National Parks and Wildlife Act 1974*. The conservation agreement must state; '*This agreement must not be terminated without the written consent of 'The Minister Administering the Commonwealth Environment Protection and Biodiversity Conservation Act 1999'*'.
4. Prior to the commencement of the action the person taking the action must provide evidence to the Department of;
 - a. Their ownership of the offset lands described in Condition 3 along with offset attributes, shapefiles and textual descriptions and maps to clearly define the location and boundaries of the offset sites.
 - b. Lodgement of the section 69 conservation agreement application form with the NSW Office of Environment & Heritage.
5. If the person taking the action is unable to comply with Conditions 3 and 4 above they must propose an alternative offset strategy for box gum woodland that meets the current Commonwealth EPBC Act Environmental Offsets Policy. The proposed action must not commence until the alternative proposed offset has been approved in writing by the Minister.

6. Within 30 days after the commencement of the action, the person taking the action must advise the Department in writing of the actual date of commencement.
7. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement the offset and BGWMP, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.
8. Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the BGWMP as specified in the conditions. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the Department within 2 business days of becoming aware of the non-compliance.
9. Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.
10. If the person taking the action wishes to carry out any activity otherwise than in accordance with the Plan as specified in the conditions, the person taking the action must submit to the Department for the Minister's written approval a revised version of that Plan. The varied activity shall not commence until the Minister has approved the varied Plan in writing. The Minister will not approve a varied Plan unless the revised Plan would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised Plan, that Plan must be implemented in place of the Plan originally approved.
11. If the Minister believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the Minister may request that the person taking the action make specified revisions to the Plan specified in the conditions and submit the revised Plan for the Minister's written approval. The person taking the action must comply with any such request. The revised approved Plan must be implemented. Unless the Minister has approved the revised Plan then the person taking the action must continue to implement the Plan originally approved.
12. If, at any time after 5 years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister.
13. Unless otherwise agreed to in writing by the Minister, the person taking the action must publish the Plan and Program referred to in these conditions of approval on their website. The Plan and Program must be published on the website within 1 month of being approved.

Definitions

- a) **Department**, the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.
- b) **Minister**, the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.
- c) **Commencement**, means the earthworks, vegetation removal or construction of any infrastructure, excluding fences and signage, associated with the proposed action.
- d) **Offset attributes**, mean an '.xls' file capturing relevant attributes of the Offset Area, including the EPBC reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the EPBC protected matters that the offset compensates for, any additional EPBC protected matters that are benefiting from the offset, and the size of the offset in hectares.
- e) **Shapefiles**, means an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the Offset Area, including the shape, EPBC reference ID number and EPBC protected matters present at the relevant site. Attributes should also be captured in '.xls' format.

Schedule 1



Source: LPI 2010, Holcim Australia (Aerial Photo May 2012), Google Earth (2011)

0 0.5 1 1.5 km
1:30 000

Legend

- Project Area
- ▨ Existing Approved Habitat Management Area
- ▨ Existing Approved Core Riparian Corridor
- ▨ Existing Approved Cultural Heritage Management Zone
- ▨ Stepping-Stone Corridor
- ▨ Box Gum Woodland Derived Native Grassland (CEEC)
- ▨ Box Gum Woodland (CEEC)
- Location of Heary Sunray
- ▭ Proposed Biodiversity Offset Area
- ▨ Proposed Box Gum Woodland CEEC Regeneration
- ▨ Proposed Habitat Management Area
- Drainage

FIGURE 3.2

Proposed Biodiversity Offset Area and Habitat Management Features



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