

Drayton Management System Standard

Flora and Fauna Management Plan

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Revisions

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3	February 2009	P Simpson	P Forbes	M Heaton
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Document Information

1 PURPOSE

The purpose of this procedure is to provide a framework for the management of flora and fauna at Anglo American's Drayton Mine (Drayton). This Flora and Fauna Management Plan (FFMP) details the procedural requirements undertaken to minimise the impacts of the project on the flora and fauna of the area and encourage regeneration of habitats. The FFMP also details general practices undertaken by Drayton in order to manage its land holdings for the maintenance of biodiversity values and meet its obligations as a responsible landholder.

2 SCOPE

This procedure describes statutory requirements, responsibilities and Drayton conditions and procedures in relation to:

- Vegetation Clearing
- Topsoil Stripping
- Threatened Species
- Endangered Ecological Communities
- Drayton Wildlife Refuge
- Weed Control
- Feral Animal Control
- Fencing
- Erosion Control
- Native Fauna Care
- Habitat Corridor Establishment
- Offset Strategy

This procedure supports and enhances the Drayton Rehabilitation and Offset Management Plan which is applied in conjunction with this document.

3 DEFINITIONS

- DoPI – NSW Department of Planning and Infrastructure
- HLRF – Hunter Lowlands Redgum Forest
- EEC – Endangered Ecological Community
- Wildlife Aid – Volunteer organisation aiding ill or injured native fauna
- AEMR – Annual Environmental Management Report
- SHE – Safety, Health and Environment
- MOP – Mining Operations Plan

4 PROCEDURAL REQUIREMENT

4.1 Responsibilities

Environmental Coordinator

The Environment Coordinator shall coordinate the management of flora and fauna on site; provide assessments of impacts to flora and fauna via Permits to Disturb Land; and report management issues annually in the AEMR.

SHE Manager

The SHE Manager shall be responsible for the management of flora and fauna issues that may arise through the course of mining operations and shall authorise Permits to Disturb Land based on assessments provided by the Environmental Coordinator.

Surveyor

The statutory mine Surveyor shall oversee the compilation of Mining Operations Plan (MOP), ensuring that the MOP meets regulatory expectations. The Surveyor will also provide assurance that completed rehabilitation and Permits to Disturb Land meet MOP criteria.

Mining Manager

The Mining Manager shall be responsible for authorisation of Permits to Disturb Land based on assessments provided by the Surveyor and Environmental Coordinator and shall ensure clearing is restricted to approved areas.

Superintendent/Supervisor

The Superintendent or Supervisor of the clearing activity shall be responsible for gaining authorisation of Permits to Disturb Land, demarcating and mapping areas to be disturbed and ensuring clearing is restricted to approved areas.

4.2 Audit/Review Schedule

This procedure shall be subject to a review every three years. The SHE Manager shall be responsible for such reviews.

4.3 Records Management

Records of correspondence, weed and feral animal control and vegetation clearance shall be maintained and stored by the Environmental Coordinator.

4.4 Revision Status

February 2003

Original issue

November 2005

Changes in this revision included:

- Updating into Anglo Coal Australia procedure format
- Reorganisation of procedure
- Updating responsibilities
- Updating with current weed management strategy

This management plan was forwarded to Muswellbrook Shire Council on 19 September 2005 for review. No comments were received.

February 2009

Updated with respect to the 2007 Environmental Assessment

July 2013

Updated to reflect changes to:

- Anglo American format
- Department names
- Responsibilities
- Updated site procedures

4.5 References

- Project Approval Conditions Anglo Coal (Drayton Management) Pty Limited (06-0202)
- Drayton Environmental Impact Statement 2002 (HLA-Envirosciences)
- Drayton Environmental Assessment 2007 (Hansen Bailey)
- Department of Mineral Resources Integrated Landscapes for Coal Mining Rehabilitation Plan
- Drayton Rehabilitation and Offset Management Plan

4.6 Environmental Assessments of Flora and Fauna

Drayton mine has been operating as an open cut coal mining operation since the early 1980s. Prior to mining, all habitats within the area were modified as a result of agricultural activities. During mining in the early 1980s, areas of agricultural land were exhumed for mining operations. Areas of pasture and tree stands were removed to allow for mining operations to be undertaken.

An environmental assessment completed in 2002 identified three vegetation types present in the areas to be mined: dry pasture, mixed eucalypt closed woodland and aquatic. The dominant vegetation type was dry pasture due to prolonged agriculture, primarily grazing, previously being the predominant land use.

The 2002 environmental assessment identified the Eastern Grey Kangaroo as the most common mammal species present onsite. Several bird species, frogs and reptiles were also found to be present. In total, 105 species or sub species of plants were recorded and 35 species of fauna were observed during the study.

Environmental assessments have identified ten Threatened Species and one Endangered Ecological Community (EEC) present on Drayton land. Sections 4.10 and 4.11 provide details.

4.7 Statutory Requirements

The Flora and Fauna Management Plan (FFMP) is linked to the Drayton Project Approval 06_0202 via the Statement of Commitments (Appendix 2 of the Project Approval). The FFMP is therefore a statutory requirement administered by the Department of Planning and Infrastructure (DoPI).

In practice, the FFMP overlaps with the Rehabilitation and Offset Management Plan which is supported by the Offset Strategy. These documents are requirements of the Project Approval 06_0202 (Conditions 35 and 39).

4.8 Vegetation Clearing

Vegetation clearing is to be minimised and cleared areas are to be re-vegetated, with vegetation consistent with the Drayton Rehabilitation and Offset Management Plan, as soon as possible after the disturbance. This is generally vegetation similar to that which has been cleared and is coherent with the final land use and biodiversity values stated in the Drayton Rehabilitation and Offset Management Plan.

Prior to any disturbance, those persons seeking to disturb an area must obtain an approved Permit to Disturb Land. A Permit to Disturb Land (Appendix 1) is an internal document designed to ensure that those persons disturbing an area are aware of the hazards associated with the clearing and have considered the impacts of the disturbance. The Permit to Disturb Land must be signed by the originator of the request; the statutory Surveyor; the SHE Manager (or delegate); the Mining Manager; the Superintendent or Supervisor managing the work; and the Operators performing the clearing before work can commence.

Areas to be cleared are assessed by the Surveyor to ensure compliance with the Mining Operations Plan (MOP). The disturbance limit is to be clearly demarcated and mapped to ensure that clearing occurs within the approved boundary of disturbance.

Areas to be cleared are to be assessed by the Environmental Coordinator to determine the potential impact on flora and fauna; rehabilitation requirements; topsoil management requirements; Aboriginal heritage or other items of heritage significance; potential disturbance to catchment/drainage or erosion and sediment control structures and any mitigation measures required.

Prior to the clearing of woodland vegetation (trees and shrubs) an assessment of habitat value is to be conducted and habitat structures (e.g. hollow logs, large trees) are to be retained or conserved for use on rehabilitation areas. Native trees and shrubs should also be assessed for potential seed sources and any available seed harvested for distribution on completed rehabilitation areas where possible.

Mine disturbances will be documented during the annual business planning process according to the commitments made in the MOP.

4.9 Topsoil Stripping

Topsoil stripping may occur in areas covered by an approved Permit to Disturb Land (see previous section). The Mining Operations Plan (MOP) outlines the schedule for mining to occur. This schedule also details areas and timeframes for topsoil stripping.

Topsoil is a valuable resource for rehabilitation. Topsoil contains nutrients; structure; organic matter; biota; and seeds which if preserved, are extremely beneficial to the successful establishment of mine rehabilitation. Careful handling and stockpiling of topsoil is required to conserve this resource.

Topsoil handling and stockpiling requirements include:

- Where possible, place topsoil directly on rehabilitation areas during stripping
- Minimise the time topsoil is stockpiled to preserve viability of native seed contained
- Minimise compaction
- Clearly demarcate and map topsoil stockpiles
- Stockpile height should not exceed three metres
- Minimise weeds by seeding stockpiles with cover crop and pasture species as soon as stockpiling is complete
- Treat weeds on stockpiles as required
- Ensure topsoil stockpiles are not contaminated with other materials (including inert material/clays which must be stockpiled separately)

4.10 Threatened Species

Environmental Assessment field surveys conducted on Drayton land have identified 10 threatened fauna species present onsite. No threatened flora species have been recorded. Protected matters relating to the Australian Government's Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the NSW Government's Threatened Species Conservation Act 1995 (TSC Act) have been investigated. Threatened species recorded include:

- Diamond Firetail (bird) – Vulnerable (TSC Act)
- Rainbow Bee-eater (bird) – Migratory (EPBC Act)
- White-throated Needletail (bird) – Migratory (EPBC Act)
- Squirrel Glider (mammal) – Vulnerable (TSC Act)
- Grey-headed Flying Fox (mammal) – Vulnerable (EPBC Act), Vulnerable (TSC Act)
- Yellow-bellied Sheath-tailed Bat (mammal) – Vulnerable (TSC Act)
- East-coast Free-tailed Bat (mammal) – Vulnerable (TSC Act)
- Eastern Bent-winged Bat (mammal) – Vulnerable (TSC Act)
- Greater Broad-nosed Bat (mammal) – Vulnerable (TSC Act)

- Eastern Cave Bat (mammal) – Vulnerable (TSC Act)

Due to the availability of areas of woodland vegetation adjacent to the mining operation, the impacts of woodland loss due to mining are not considered critical. Alternative habitats are available in the adjacent Northern Offset and Drayton Wildlife Refuge areas.

4.11 Endangered Ecological Communities

During the Drayton extension environmental assessment conducted in 2007, areas of vegetation categorised as Hunter Lowland Redgum Forest (HLRF) were identified within the Drayton Wildlife Refuge and within the mining lease. HLRF has been listed as an Endangered Ecological Community (EEC) under the NSW Threatened Species Conservation Act 1995 (TSC Act).

The assessment of significance determined that the project is not expected to have a significant impact on the EEC due to the relatively small area to be disturbed; the degree of regrowth in the EEC; the degree of previous disturbance to the EEC from mining activities; and the existence of a large stand of HLRF located within the Drayton Wildlife Refuge area to the north of the lease. However clearing of areas with EEC vegetation has been offset by the re-creation and protection of similar vegetation within the offset areas as described in the Drayton Rehabilitation and Offset Management Plan.

4.12 Drayton Wildlife Refuge

In 1987, Drayton was proclaimed a Wildlife Refuge under the National Parks and Wildlife Act 1974 (NPW Act). This refuge relates to the retention of woodland vegetation areas in the vicinity of the access road, CHP and Antiene rural residential sub division. The Wildlife Refuge allows for planned landuse whilst still respecting the values of wildlife and flora in the area. This area also provides a buffer zone between residents and the mine and conserves remnant vegetation providing continuing habitat and preservation of natural ecosystems.

Since the original gazettal of the Drayton Wildlife Refuge in 1987, Drayton has come to refer to a 114 hectare area north of Thomas Mitchell Drive as the “Drayton Wildlife Refuge.” This area contains a large stand of Hunter Lowland Redgum Forest (HLRF) EEC community. The area is described and mapped in the Drayton Rehabilitation and Offset Management Plan and is managed in a similar manner to Drayton’s Northern Offset. The area is fully fenced to prevent unauthorised access.

4.13 Weed Control

Weed control measures are undertaken and reported on an annual basis. Drayton’s annual weed management activities are documented in the Annual Environmental Management Report (AEMR). An annual weed survey is conducted and documented by the SHE Department in order to track changes in weed distribution.

Weeds are prioritised for control. Noxious weeds are treated with highest priority. A full list of weeds recorded at Drayton is available in the Drayton Rehabilitation and Offset Management Plan. The noxious weeds on the list include:

- *Hypericum perforatum* – St John’s Wort
- *Lycium ferosissimum* – African Boxthorn
- *Opuntia stricta* – Prickly Pear

High priority is also given to weeds in rehabilitation and offset areas as well as the Drayton Wildlife Refuge. Effective control of weeds in these areas is essential to conserving and enhancing biodiversity values as detailed in the Drayton Rehabilitation and Offset Management Plan.

4.14 Feral Animal Control

Introduced (feral) animals are relatively common throughout the site. Species include rabbits; hares; wild dogs and foxes. Targeted baiting programs are undertaken to control these animals as required. When baiting programs are proposed, communication is carried out with local landholders to ensure domestic animals are not affected and to enable additional baiting programs to be developed concurrent with Drayton's. Drayton is a member of the Upper Hunter Combined Wild Dog Association and supports a coordinated regional approach to feral animal control. All relevant codes of practice are complied with during baiting programs. Training and baits are obtained via the relevant authority and records are kept in compliance with the Pesticides Act 1999.

4.15 Fencing

The condition of all external boundary fencing will be assessed annually and a condition report produced. Results of the condition report will be used to determine maintenance and repair priorities. Existing boundary fences of offset and wildlife refuge areas will be given priority over other areas unless direct safety risks are present. Boundary fences will be maintained in good order to prevent stock intrusion from neighbouring properties. Requirements for repair of internal fencing will be assessed by the Environmental Coordinator on a case by case basis.

4.16 Erosion and Sediment Control

Erosion and sediment control structures installed after January 2011 shall conform to the requirements of the Anglo American Metallurgical Coal Erosion and Sediment Control Standard (ESC Standard). The ESC Standard applies to all operational and infrastructure areas of the mine. The ESC Standard does not apply to rehabilitation or offset areas.

In general, Drayton is managed in such a way as to eliminate contaminated and dirty water entering the receiving environment. This is achieved by containing all mine affected and contaminated water within the mine water management system as detailed in the Drayton Water Management Plan. Drayton does not discharge water offsite however surface water sampling is conducted on a monthly basis for the purpose of monitoring site water quality as detailed in the Drayton Monitoring Management Plan.

Further to this, sediment control structures exist in the CHP and maintenance areas which are regularly maintained to reduce the sediment load being received into the Rail Loop Dam and the Pollution Control Dam. Water is recycled back into the mine water system from these dams; therefore control of water quality is important to ensure overall site water quality is maintained to a standard suitable for industrial uses and to prevent silt build-up in the dams reducing capacity and function.

Erosion control is achieved onsite via:

- Establishment of temporary vegetation cover on disturbed areas
- Controlling runoff from pre-strip areas
- Seeding short and long-term topsoil stockpiles
- Rehabilitating disturbed areas as they become available

4.17 Stock and Timber Management

In the past, Drayton land has been utilised for grazing. Stock are now excluded from Drayton owned land (except leased properties outside of mining leases) to maintain biodiversity values. If stock were to be reintroduced in the future, a pasture assessment would be completed for areas of rehabilitation to be grazed. Soil characteristics, land capability and carrying capacity would be assessed by a suitably qualified person to determine the number and type of stock as well as suitable grazing practices and required infrastructure.

4.18 Native Fauna Care

Native fauna are occasionally found injured or ill and in need of urgent care. Drayton has an ongoing relationship with Wildlife Aid, an organisation supplying necessary care for injured or ill wildlife. These animals are assessed by carers and rehabilitated and released where possible.

4.19 Habitat Corridor Establishment

Wildlife corridors have been identified and incorporated into Drayton's final landform design. Consideration was given to the DPI's Synoptic Plan of Integrated Landscapes in the formulation and the location of tree corridors. The Drayton Offset Strategy aims to establish links between the Saddlers Creek woodland area in the south west of the site and the woodland area to the north and east of the mine. This wildlife corridor, established on Drayton's rehabilitated areas will provide an important habitat linkage in the post-mining landscape consistent with habitat corridors outlined in the Synoptic Plan.

4.20 Offset Strategy

The Environmental Assessment defined a range of mitigation measures for minimising the potential impacts of the Project, specifically the loss of woodland vegetation, including 1.3 hectares of HLRF. These mitigation measures were defined as:

- Rehabilitation of mined areas to open forest habitat – Corridors of open forest habitat will be created through areas of rehabilitation. Species selected will be in accordance with those species present in the HLRF EEC.
- Compensation for the loss of habitat through the active management of the remaining woodland habitat and the continued maintenance of the 117 hectare Drayton Wildlife Refuge containing HLRF – the existing Drayton Wildlife Refuge will be passively managed to minimise disturbances throughout the area. Grazing and public access will not be permitted. Feral animal control will be undertaken as required.

An Offset Strategy document is available and details of management measures are provided in the Rehabilitation and Offset Management Plan.

5 APPENDICES

Appendices (Attached to Procedure)

Nil

Appendices (Linked to Procedure)

Appendix 1 – [Permit to Disturb Land](#)