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fastfacts

Mt Owen Complex Fact Sheet 1 Biodiversity Management

Biodiversity Management

“Mt Owen’s best practice biodiversity offset strategy together with its ongoing efforts in mine rehabilitation, flora and fauna management and restoration research will result in a significantly larger conservation area of increased biodiversity value than existed prior to mining. This will provide important habitat for threatened fauna species and an expanded conservation area for the community. Appropriate arrangements will be put in place to ensure that conservation areas are protected and managed to enhance their ecological values in the long-term”.

Mt Owen Mine

Mt Owen Mine is located in the Hunter coalfields north of Singleton. The mine is owned and managed by Hunter Valley Coal Corporation Pty Limited (HVCC), a 100% owned subsidiary of Xstrata Coal. Thiess Pty Limited operates the mine under a partnering agreement with HVCC.

Mining commenced at Mt Owen in 1993. Following the granting of a new Development Consent in December 2004, the mine is now approved to produce up to 10 million tonnes of run of mine (ROM) coal per annum by open-cut mining methods over the next 17 to 21 years.

What is Biodiversity?

Biodiversity is an abbreviation of “biological diversity”. It means the variety of living things – the different plants, animals and

micro-organisms, the genes they contain and the ecosystems of which they are a part.

Mt Owen Biodiversity Management Program

The Central Hunter Valley floor region of NSW has been extensively cleared of native vegetation, primarily for agriculture, mining and urban development. Ongoing pressures from economic development have resulted in further threats to natural habitats and increased the need for “biodiversity sensitive” development practices.

In recognition of the importance of conserving biodiversity, Mt Owen Mine has implemented innovative practices, which will help conserve and enhance biodiversity values in the Upper

Hunter Valley. Mt Owen’s program of biodiversity management forms part of Xstrata Coal NSW’s broader biodiversity and land management commitments.

The key components of Mt Owen’s Biodiversity Management Program include:

- Biodiversity offset strategy
- Progressive rehabilitation of disturbed areas to native woodland
- Flora and fauna management program
- Comprehensive flora and fauna monitoring program
- On-going program of native forest restoration research

Biodiversity management at Mt Owen Mine is undertaken in accordance with a *Flora and Fauna Management Plan*, which was developed by a working group consisting of representatives from government departments, the community and Mt Owen Mine.

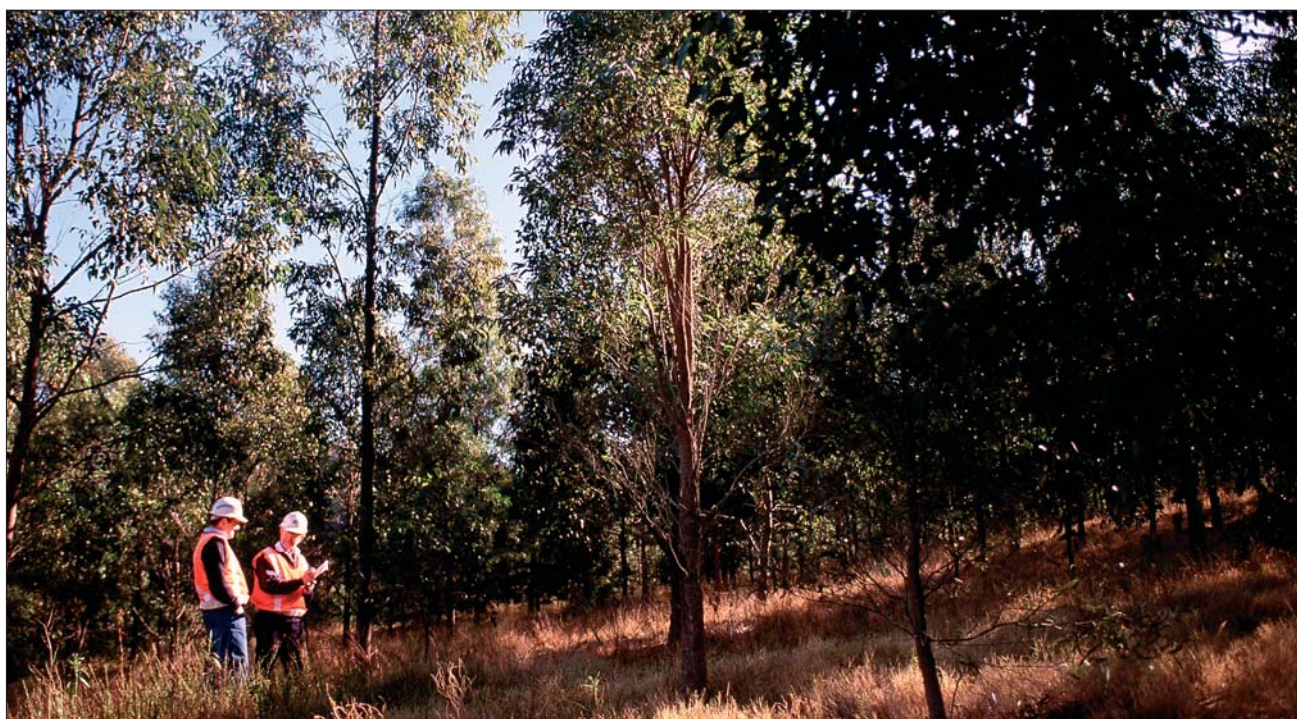
Ravensworth State Forest

Mt Owen is mining through an area of the Ravensworth State Forest (RSF). The RSF is considered a highly significant remnant on a local and regional scale. Since mining commenced, Mt Owen has enhanced the biodiversity value of the RSF remnants by excluding harmful activities such as grazing, firewood removal and recreation. The RSF is currently zoned and managed by HVCC for conservation purposes.

Since 1995, 223 fauna species have been recorded in the RSF or adjacent land, including eighteen species listed under the *Threatened Species Conservation Act*.



The Powerful Owl has been recorded in the Mt Owen project area.



New Forest Conservation Area

To offset the impacts of mining through part of the RSF, HVCC established between 1995 and 1997 a new 430 hectare area of woodland (known as the "New Forest") which adjoins the RSF. The New Forest, originally open pastureland, was planted with native tree and shrub species indigenous to the forest and surrounding area. Growth rates and survival of the trees have been encouraging and the re-forestation programme has established key species for fauna habitat and encouraged the movement of native fauna into the area. In December 2003, HVCC transferred the New Forest to Forests NSW for incorporation into the forest reserve system.



The New Forest Area was established by HVCC between 1995 and 1997.

Rehabilitation

Mt Owen is committed to the ongoing rehabilitation of disturbed areas to provide habitat for endangered fauna known to occur in the area. Mt Owen plans to create a conservation area of dry sclerophyll forest and open woodland that will complement the remnants of RSF and the biodiversity conservation areas being created in surrounding pasture lands.

Our aim is to maintain Mt Owen's position as an industry leader by pursuing a proactive rehabilitation strategy and minimising the impact of the project upon the surrounding landscape. Research links have been established with the University of Newcastle to assist with the development and use of best practical rehabilitation methods.



Rehabilitation is carried out in a timely manner in phase with the overall development of the mine.

Flora and Fauna Management

Existing flora and fauna management measures will be maintained for the life of the project. These management measures include the creation of additional habitat for ground and tree dwelling species, restrictions on vegetation clearing and land management practices.

Regular and extensive flora and fauna monitoring has been undertaken at Mt Owen since 1995. Information obtained from this monitoring is used to guide and continuously improve flora and fauna management and rehabilitation efforts at the mine.

Fauna monitoring is conducted to assess the impacts of mining on local fauna populations, including birds, reptiles, mammals and frogs. Monitoring is also undertaken to look at colonisation rates of native species in rehabilitation areas and on other land set aside for conservation purposes.

Flora monitoring is conducted seasonally to assess development in regenerating forest and rehabilitation areas and to develop a complete list of the species present within the project area. Areas of remnant vegetation are used as control sites for comparison with rehabilitation areas.



Approximately 300 nesting/roost boxes have been installed at Mt Owen to date.

Biodiversity Offset Strategy

In December 2004, HVCC received approval to expand existing approved mining operations at Mt Owen. This included approval to disturb an additional 35 hectares of the RSF and 59 hectares of open woodland outside of the forest. Given the number of threatened species recorded within the Mt Owen project area and the high habitat value of the RSF, it was recognised that there was a need to compensate for the loss of vegetation and habitat as a result of mining. To accomplish this, a comprehensive Biodiversity Offset Strategy ("Strategy") was developed in close consultation with regulatory authorities and other key stakeholders. This Strategy compensates for the disturbance of vegetation communities within the project area through the conservation of 415 hectares in offset areas adjoining the RSF and New Forest Area. The Strategy provides 'like for like' for habitat that will be disturbed by mining compared to habitat protected in conservation areas. In doing so, the Strategy sets a new industry benchmark for biodiversity offsets.

Offset areas will be managed to promote natural regeneration of native plant species by excluding harmful activities such as grazing and recreation. This will be complemented by direct seeding and/or planting in accessible areas.

Combined with existing conservation areas at Mt Owen and the life of mine rehabilitation program, the Strategy will deliver approximately 1,800 hectares of native woodland, which is approximately five times larger than the original woodland community. The long-term security of offset areas will be achieved through a range of measures available through Mt Owen's development consent.



Mt Owen's Biodiversity Offset Strategy will involve the establishment of native tree and shrub species on degraded open pasture land.

Native Forest Research

Mt Owen has embarked on the development of a research program that will lead to the eventual establishment of diverse and sustainable native forest communities on rehabilitated mine land and degraded pasture areas.

Mt Owen has developed a close relationship with the University of Newcastle. To date, six Honours projects and two PhD projects have been completed at Mt Owen. These projects have covered issues associated with rehabilitation and native forest establishment. Future research will be undertaken to determine best practice methods for the restoration of degraded pastureland to a forest/woodland ecosystem. This will complement Mt Owen's on-going native forest research program.

Past and planned research at Mt Owen has benefits for the establishment of native forest communities beyond the boundaries of Mt Owen Mine and will assist meeting biodiversity objectives for the wider Hunter Valley.

Fast Facts

Total area currently managed for conservation purposes at Mt Owen:
 Approximately 1100 hectares

Original size of Ravensworth State Forest:
 450 hectares

Area of forest/woodland to be established over the life of the Mine:
 1774 hectares comprising:

- Existing Offsets (New Forest): 430 hectares
- Biodiversity Offset Strategy: 376 hectares (total area once vegetation is established)
- Mine rehabilitation: 968 hectares

Dominant native plant species found in the Ravensworth State Forest:

- Canopy Species: Spotted Gum, Narrow-leaved Ironbark, Broad-leaved Ironbark and Grey Box
- Shrub Species: Acacia species, Bitter pea and Blackthorn
- Ground Cover Species: Spiny-headed Mat Rush, Barbed Wire Grass and Spear Grass

Type of plant species used in rehabilitation and reforestation programs:

- Diverse range of native canopy, shrub and ground cover species
- Use of topsoil from areas to be mined in the rehabilitation program provides a natural seed source
- On-going program of seed collection from Ravensworth State Forest, conservation areas and rehabilitation areas

Number of native plant and fauna species recorded within the Mt Owen project area:

Approximately 200 plant species with many species yet to be confirmed, 145 bird species, 24 non-flying mammals, 18 bat species, 20 reptile and 15 amphibian species

Biodiversity Management Practices

- Biodiversity Offset Strategy
- Progressive rehabilitation of disturbed areas to native woodland
- Flora and fauna management program
- Flora and fauna monitoring program
- On-going program of native forest restoration research

Final Land Use Objective for Mt Owen:

Conservation areas comprising dry sclerophyll forest and open woodland

Would you like more information on Mt Owen's Biodiversity Management Program?

Further information on Mt Owen Mine's biodiversity management program is available on the Mt Owen Complex Website at www.huntervalleycoalcorp.com.au

If you have any further enquiries, we encourage you to contact Nigel Charnock, Environment & Community Officer, HVCC on (02) 6570 0883.