

# **MINING WITHIN CONSERVATION AREAS**

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## **ABSTRACT**

Biodiversity is poorly conserved in reserves, particularly in the rangelands, and various strategies are being pursued by CALM to remedy this. There is potential for conflict between the goals for conservation and access for mineral exploration.

The paper discusses current legislation, procedures for obtaining access to CALM-managed lands and timeframes for approval. Examples are given where the mining industry and CALM have worked constructively to achieve better outcomes for conservation.

## **INTRODUCTION**

Industry has argued repeatedly for the essential need for access to land for exploration in order to discover new ore bodies and to maintain or increase production (AMIC, 1994, Minerals Council of Australia, 1996).

Government has recognised the need to protect and enhance biodiversity. It has signed International treaties and has all States as co-signatories to a National Biodiversity Strategy (1996).

In Western Australia, 20 Million hectares (or about 8 percent) of the land mass is reserved for conservation. Hopkins et al, ANCA project N703 (1996) have shown that, using the accepted Caracas model that 10 percent of vegetative systems should be in reserves, and based on Beard's vegetation mapping for Western Australia, of the vegetative types recognised

- 21 percent are adequately reserved
- 34 percent are represented but below accepted adequate levels
- 47 percent are not represented at all in formal reserves.

This apparent need to increase the size of areas managed for conservation objectives can lead to conflict.

During 1996 my Branch contracted David Wilcox to review opportunities for additions to the Conservation estate in the rangelands. Figure 1 depicts 10 strategies to achieve this. Though all possibilities will be pursued, regional differences are important. In the Kimberley, unallocated crown land, Aboriginal reserves and pastoral leases dominate. In the north-eastern Goldfields, many pastoral leases are held by mining companies and memoranda of understanding (MOUs) have been signed between some of these companies and CALM. In

the Murchison Gascoyne, there is little unallocated crown land and pastoral leases are tightly held. Lease purchase and MOUs or Agreements with pastoralists are the only options. In the agricultural south-west a voluntary "Land for Wildlife scheme" has been launched by CALM and the purchase of uncleared land is also an option. Funds for purchase have been available under the Federal Government's National Reserves Programme (NRS) Strategy which is part of the Natural Heritage Trust (NHT). Funds have also been made available by the State Government. To date 12 leases totaling 2 million hectares have been purchases by CALM.

There is obviously a potential for conflict between the goals for conservation and access for mineral exploration. The Department of Minerals and Energy (DOME) has reviewed various proposals for Conservation, such as those contained in CALM's Goldfields and South Coast Regional Plans and the Regional Forest Agreement. DOME estimate (Ranford et al 1996) that there are over 700 reserve proposals, many of which have potential to impact the mining industry as they overlie prospective land. DOME effectively have a right of veto over new reserve proposals. Land which is geologically interesting often contains unusual flora and fauna suites. The challenge is to evolve a management system that caters for both needs.

It is also increasingly obvious that not all lands managed for conservation can or should be in reserves. Though a vested and well managed reserve system based on CAR principles (comprehensive, adequate, representative) must remain as the core objective, this system needs to be supported by areas managed for conservation objectives on leasehold and private lands (Land for Wildlife, Covenants, MOU's, Agreements etc). These elements should then be contained within a landscape (for example forest, farmland, rangeland, minesites) which is managed sympathetically, with sustainable development objectives in mind.

This landscape needs to be productive as well as ecologically stable and sustainable. Management costs for conservation objectives should be spread through the community. A profitable mining industry can have a major role to play in these developments.

## LEGISLATION

The minerals industry is likely to be cautious about proposals to substantially increase the "conservation" estate. How will the interests of industry for access be protected?

Legislation in Western Australia allows access for exploration and mining onto all classes of reserve land including National Park and the CALM Act cannot derogate from the Mining Act. Conditions are set by the Minister regarding access and the provisions of the Environmental Protection Act can be used if required. The National Parks and Nature Conservation Authority's policy in relation to mining is also important and is attached as Appendix 1. Access constraints are related to the purpose and vesting of the reserve and on the risks imposed by exploration.

In descending order of constraints, the purpose of reserves would be

- Nature Reserves A
- National Parks A
- Conservation Parks A
- Nature Reserves
- Conservation Parks
- Section 5g Reserves (CALM Act)
- State forest

Timber reserves  
Pastoral leases managed by CALM

In descending order of risk

bulk sampling  
exploration shafts and declines  
costeans  
drilling on cleared gridlines, requiring extensive new access  
scout drilling using off road, low impact vehicles  
scout drilling on roads or tracks  
reconnaissance, geochemical, geophysical surveys  
airborne surveys.

There is recognition by the mining industry that CALM managed lands are available for exploration and mining. As an example, in the eight years June 1991 to June 1999, 1,235 mining tenements for access to CALM managed lands were processed by CALM. Exploration within four National Parks located ore bodies estimated to be worth more than \$3 Billion. Some major bauxite, coal, tin, mineral sands, and gold mines are located on CALM managed lands.

The standard conditions for exploration and approval procedures are documented in Information Series No. 11 DME (1998). Industry supports the need for sensible conditions and procedures when operating in environmentally sensitive areas. In fact, many companies demonstrate "best practice" and "continual improvement" which may well exceed requirements under these conditions.

Pastoral leases held in the name of the Executive Director, CALM are considered as Crown Land for the purposes of the Mining Act 1978. Highly prospective ground has already been vested in the NPNCA as Section 5g reserves (CALM Act) for the joint purpose of "Conservation and Resource Use". Prospective areas have also been vested as Nature Reserves or Conservation Parks other than A class, since exploration and mining on these tenures only requires the recommendation of the Minister for the Environment. A multiple-use category such as a Natural Resources Management Area is being explored.

Industry may be concerned by changes in Legislation or changes to Policy which affect the interpretation of their existing Legislative "rights". These powers rest with our elected representatives in Parliament and I can't see that this will or should change. Some of the Policy changes which have occurred in Western Australia and their effects on industry are discussed in Carr and Batini (1993). Recently, additional changes have resulted from the signing of the Regional Forest Agreement for Western Australia.

## **HOW TO ACCESS CALM-MANAGED LAND**

### **(i) Exploration**

CALM prefers that potential explorers approach CALM's Environmental Protection Branch well before planning any access to a reserve. CALM can then point out the conditions for access, the likely concerns for example weeds, threatened flora or

dieback, procedures for minimising these concerns for example flora surveys, hygiene procedures, local contacts at CALM's Regional or District offices etc.

Exploration should proceed as a phased programme from non ground disturbing to ground disturbing phases in accordance with conditions in Information Series No. 11 DOME (1998). Programmes should be prepared for each phase, indicating target areas, access requirements, method of line clearance (if required), drilling techniques, disposal of samples, site cleanup and rehabilitation. CALM will advise whether a botanist should be used to check lines before they are cleared. CALM and DOME environmental staff will audit the work for compliance.

In recent years extensive mining exploration programmes have been carried out in the Rudall River National Park, the Jilbadgie and Dundas Nature Reserves and on various tenures near the Ravensthorpe Range. Reserves and crown land in the Mid-west Region have had extensive petroleum seismic surveys. Exploration companies have introduced innovative procedures such as the use of a bobcat for surface drilling.

If the reserves are small within large areas of privately held land, CALM prefers that the exploration proceed initially on the cleared land. Only if the exploration shows promise will CALM consider access onto the reserve.

## **(ii) Mining**

In the past, industry has generally described its benefits to the Australian economy in terms of employment, balance of trade, decentralisation, profits, standard of living etc. However in more recent times (AMIC1995, Chamber of Minerals and Energy 1997) there has been some emphasis on describing environmental or community benefits, other than the collection of additional data on biological values and the rehabilitation of affected sites. Companies such as Alcoa of Australia have taken their environmental expertise onto agricultural areas, such as their support for Landcare in the wheatbelt, they have encouraged public visitation of their minesites and have improved employee knowledge and pride in the Company's environmental successes.

In each situation where mining is proposed in a CALM-managed reserve, my aim is to dialogue early with the proponent and the Department of Minerals and Energy in order to:

- improve the environmental aspects of the proposal
- obtain better baseline biological data and also
- improve the outcomes for conservation.

A few examples from the Western Australian experiences are:

- ◊ Watheroo - in 1991 the Labor Government decided to excise 39ha from the Watheroo National Park for a bentonite mine. The product was estimated to be worth \$100 Million. The company was required to purchase private land which contained a major population of a declared threatened eucalypt *E. rhodantha*. The site has been purchased, refenced and is being rehabilitated with understorey species native to the area (Kelly, 1995).



- ◊ Marandoo - after much controversy the Labor Government excised approximately 5,000ha from the Karijini (Hamersley Range) National Park for an iron ore mine, developed by Hamersley Iron. The product (above water table) is estimated to be worth over \$500Million.

Soon after, three key areas totalling 20,800ha were added to the Park. Agreement was reached between CALM and Hamersley Iron on cooperative management for the minesite area (Statement of Mutual Understanding) and on cooperative management of three adjoining pastoral leases held by Hamersley Iron (Memorandum of Understanding), details of which are discussed by Stoddart and Batini (1996). The more immediate benefits are management to natural not cadastral boundaries, integrated pest, fire and weed management, fencing to natural boundaries and closure of some problem water points. Longer term goals relating to education, public involvement and research are being defined.

- ◊ D'Entrecasteaux - during 1996, the Coalition Government approved a Bill to excise 350ha of land from this 115,447ha National Park. The land is still vested in the National Parks and Nature Conservation Authority and managed by CALM.

The excision contains the South Jangardup mineral sands ore body estimated to be worth \$250-300 Million. Environmental assessment by the EPA and Ministerial approvals are still required. If the project is approved, the Company, Cable Sands Pty Ltd has undertaken to

- rehabilitate all areas cleared by works associated with the mine. This land will be reincorporated into the National Park. I expect that with current rehabilitation procedures, more than 60 percent of species which are currently found on the site will be present in the rehabilitation.
- Cable has offered a 1,030ha block to be added to the National Park. Part of the block, 31 percent is uncleared vegetation comparable to the minesite, 11 percent is part-cleared and will need minor improvement, the balance was cleared and grazed and will need to be rehabilitated or developed for Park facilities.
- this block lies to the north of Lake Jasper and when fully rehabilitated will increase the buffer to the lake from about 300m to 2 kilometers.

- ◊ Western Shield

This is a major fauna protection and enhancement program by CALM, directed initially at controlling fox and cat densities over an area of 5 Million hectares. This will be followed up, as appropriate by reintroduction and reconstruction of native fauna assemblages. Currently the program covers 3.2 Million hectares and in addition to a \$1.25 M input by CALM, has sponsorship assistance from Alcoa, Cable Sands, Westralian Sands, WAPET and Apache Energy. As a result the Woylie (*Bettongia penicillata*), the Tammar wallaby (*Macropus eugenii*) and the Quenda (*Isodon obesulus fuscivente*) have recovered so dramatically that their status has been reviewed and these species have been removed from the list of threatened fauna.

#### ◊ Penguin Island

At the time CALM assumed management in 1985, the island was a place of run down shacks, degraded vegetation, environmental damage and erosion. A management plan was completed, major rehabilitation was undertaken, substantial construction work done. The island now caters for many more persons but in a controlled way with minimal damage. A substantial input by Western Mining has enhanced the environmental experience by assistance with construction of a Research and Management centre.

- ◊ The Minerals industry currently pays CALM compensation averaging \$2.5 Million each year. Compensation agreements are part of the standard conditions negotiated with Minerals and Energy and industry for all Mining Leases. Compensation provisions have also been negotiated for service corridors such as gas pipelines and petroleum bases on islands. This compensation can be paid in cash, in kind or in the form of land suitable for conservation. Wherever possible, the industry and the company are credited publicly for the benefits to conservation which ensue. An example the Goldfields Gas Transmission pipeline was routed through the Wanjarri Nature Reserve. This avoided much more difficult broken country to the west of the reserve and a much longer route to the east. GGT funded the cost of a management plan for the Wanjarri reserve, prepared by CALM. In addition it offered to rehabilitate an equivalent area to the area cleared, and assisted with upgrading of roads and fences.

### **ARE SWISS CHEESE AREAS BAD FOR FLORA AND FAUNA?**

The Conservation movement has opposed "Swiss Cheese" excisions from National Parks or Nature Reserves on the basis of effects on flora and fauna corridors and linkages. No matter how these actions may impact on us visually or philosophically, there are few data on the actual conservation effects that exploration and mining has.

An example where some data are available is from the 9,800ha Kangaroo Hills Timber Reserve. This reserve is near the mining centres of Coolgardie (10kms) and adjacent to Burbanks (now abandoned). The area is highly prospective and has been subject to extensive exploration for over 90 years. There are many shafts, drill holes, costeans, and small mines throughout the area. Most of the reserve is covered by Tenements. (map)

The relocation of a road on the boundary cut off about 9ha of highly prospective and disturbed ground. The company which held the tenement asked if this could be excised from the reserve and, in return, offered to fund a biological survey for the whole reserve, with interesting results.

Although affected by exploration and mining, Kangaroo Hills Timber Reserve has significant conservation values. A 1990 survey by Bamford, Davies and Ladd for CALM recorded 70 species of birds, 9 native mammals, 32 reptiles, 2 frogs and 250 plant species. Reptiles in particular are better represented here than on other greenstone outliers which have been studied. Diverse mosaics of eucalypt woodland (with 12 species of eucalypt) are present on greenstone throughout the reserve. Some areas of deep sand are also present within Kangaroo Hills Timber Reserve.

As well as supporting different vegetation communities the sand areas have, in general, more small mammals than other habitats in the Goldfields, including two species (*Ningauia ridei* and *Notomys mitchellii*) restricted to sand sheet complex. The vegetation associated with the sand was identified in the 1990 survey as one of eight vegetation associations within Kangaroo Hills Timber Reserve.

Similar examples can be drawn from the Ravensthorpe Ranges and from Barrow Island. The Ravensthorpe area was recognised as prospective early during settlement, it has been extensively explored and parts have been mined for gold and silver, copper, lead and zinc. Yet the area is still of such biological value that it has been consistently sought by CALM for addition to the Conservation estate.

Barrow Island, a very important A class Nature Reserve, has been an operating oilfield for over 40 years. Visually, the impact of roads, leases, lufkin pumps, infrastructure, borrow pits and flare pits is substantial. Yet studies show that the flora and fauna have coexisted with this development. In contrast, the introduction of a pregnant vixen 40 years ago would have lead to catastrophic consequences on the island's fauna.

## **TIME FRAME FOR APPROVALS**

These will vary depending on the complexity of the proposal, the quality of the data presented and the statutory requirements of other Legislation, for example the Environmental Protection Act.

The vesting authorities under the CALM Act are the National Parks and Nature Conservation Authority (NPNCA) and the Lands and Forests Commission (LFC). However changes to these arrangements are foreshadowed in the Regional Forest Agreement, and will need to be ratified by Parliament. CALM acts as the management agency for each and provides advice to both bodies. Routine matters are delegated to CALM, but ground disturbing exploration proposals and all mining need to be referred to the vesting bodies.

The NPNCA meets monthly (second Friday) and the LFC meets between 4 and 6 times a year, as required. Proponents need to cater for this, in their time frames for approval. The NPNCA/LFC may invite a proponent to attend meetings to discuss their proposals.

CALM will treat proposals expeditiously, but needs to involve the appropriate Region/District /Branches in the evaluation. It is thus desirable for the proponent to contact local CALM staff at the early stages of project formulation.

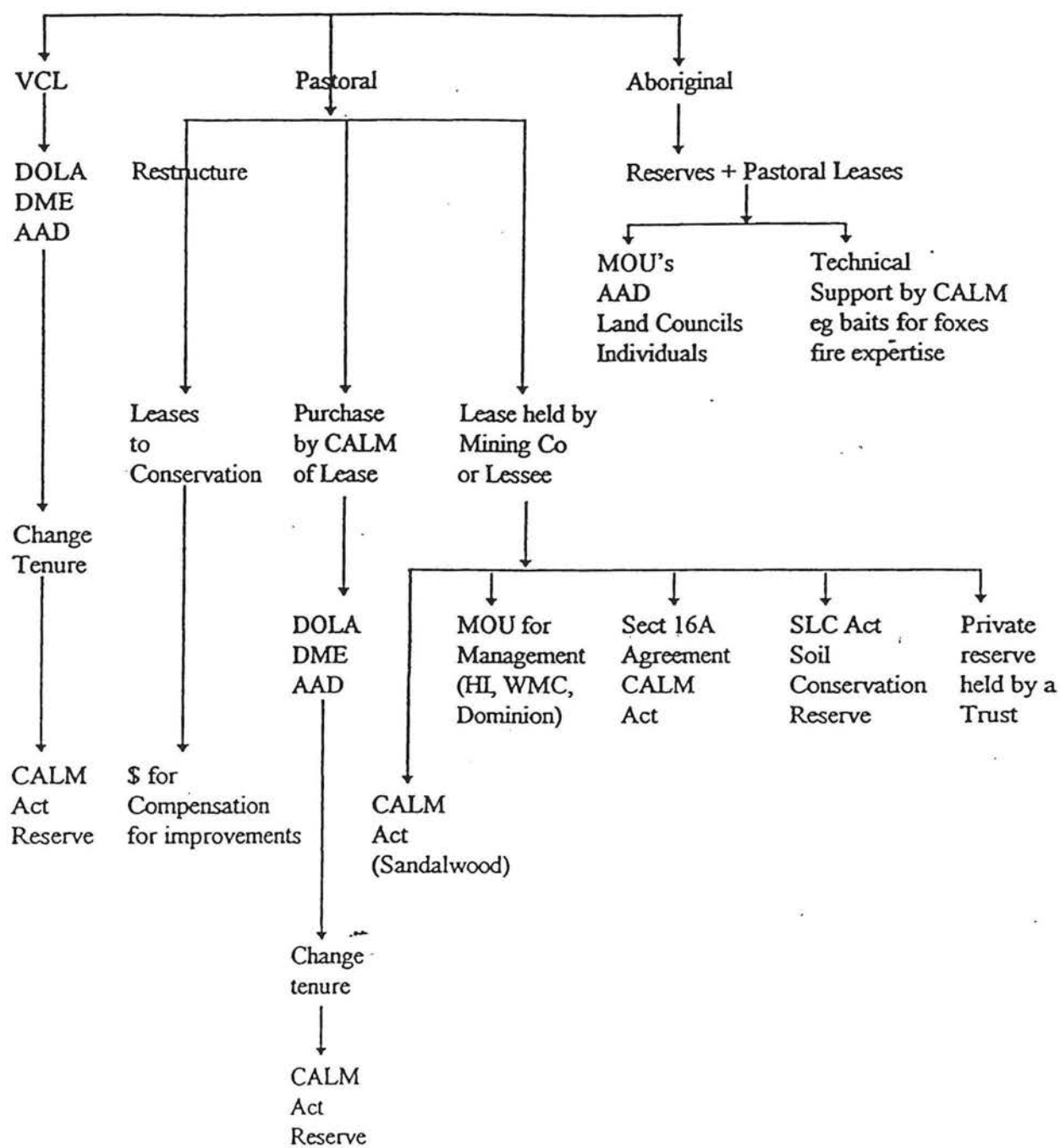
## REFERENCES

- Australian Mining Industry Council (1994). *Managing to Conserve Biodiversity*.
- Australian Mining Industry Council (1995). *Nature Conservation and Land Use*.
- Australian Nature Conservation Agency Project N703 (1996) *Conservation Status of Vegetation Types throughout Western Australia*.
- Carr W.M.B. and F. E. Batini (1993) *Exploration and mining in National Parks and Conservation reserves in Western Australia*. 1993 National meeting of the American Society for surface mining and reclamation. Spokane, Washington, May 1993
- Chamber of Minerals and Energy (1997) *Mining and the Community. A Growing Relationship*.
- Commonwealth of Australia (1996) *The National Strategy for the Conservation of Australia's Biological Diversity*.
- Department of Minerals and Energy W.A. (1998) *Information Series No. 11. Guidelines for the application of environmental conditions for onshore mineral exploration and development on conservation reserves and other environmentally sensitive land in Western Australia*.
- Kelly A.E. and D.J. Coates (1995) *Rose Mallee Recovery Plan*. Department of Conservation and Land Management Wildlife Management Programme No. 14
- Minerals Council of Australia (1996) *Multiple Land Use Reserves. A Regulatory framework. Discussion paper*.
- Ranford L., W. Carr, A. Smurthwaite and M. Freeman (1996) *Resource Access in Western Australia*. Department of Minerals and Energy W.A.
- Stoddart J.A. and F.E. Batini (1996) *Integrated Management of core and buffer areas for the Karijini National Park* (in press)
- Wilcox D.G. (1996) *The potential for enlarging the Conservation Estate in the arid rangelands*. (Unpublished report to Department of Conservation and Land Management)



Figure 1

Identify gaps in the existing reserve system based on CAR principles.



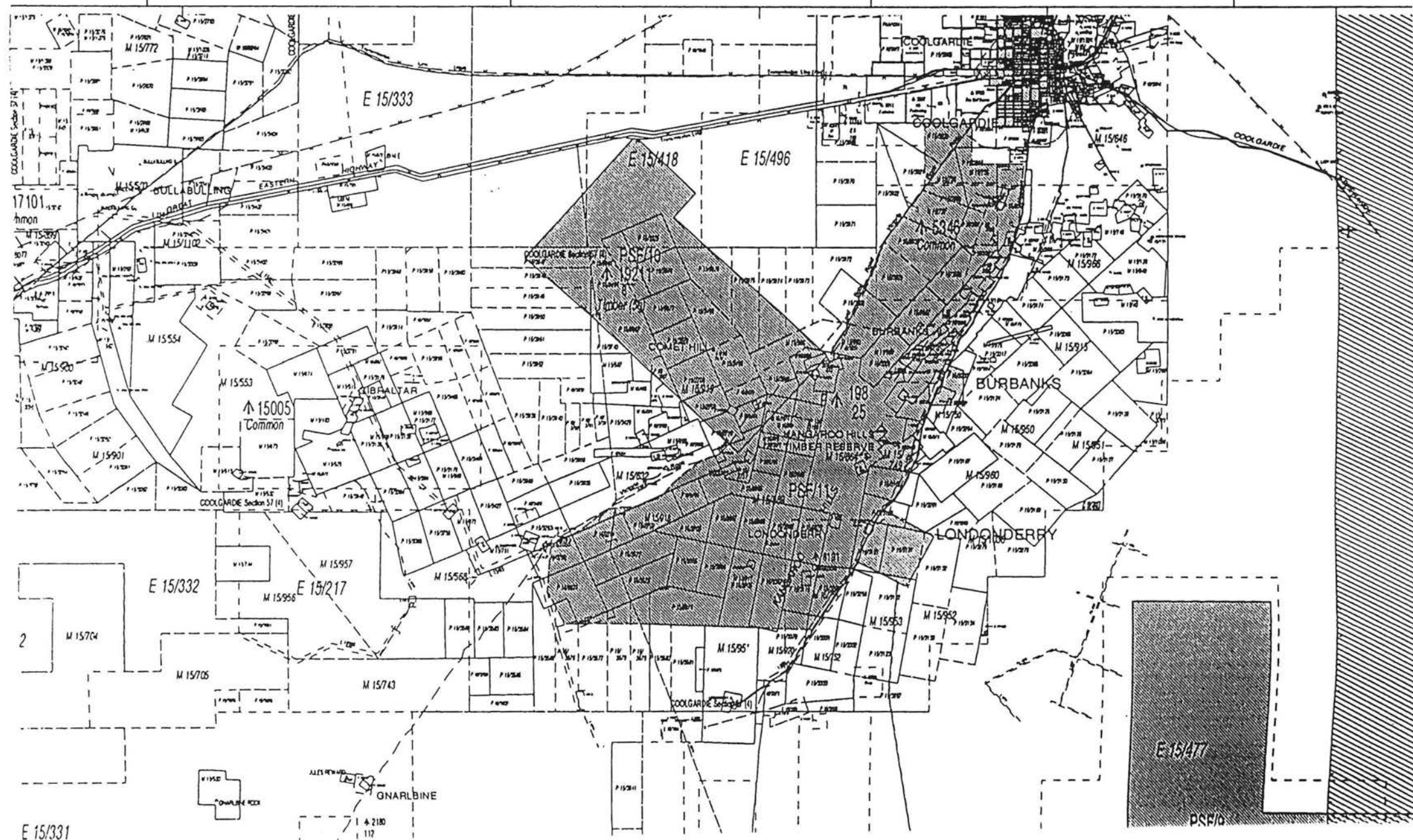
AAD	Aboriginal Affairs Department.
CALM	Conservation and Land Management.
CAR	Comprehensive, Adequate, Representative.
DME	Department of Minerals and Energy.
DOLA	Department of Land Administration.
HI	Hamersley Iron.
MOU	Memorandum of Understanding.
SLCACT	Soil and Land Conservation Act.
VCL	Vacant Crown Land
WMC	Western Mining Corporation

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# **NPNCA POSITION ON MINING IN NATIONAL**

## **PARKS AND NATURE RESERVES**

The National Parks and Nature Conservation Authority is opposed to mining in nature reserves and national parks, because mining is not compatible with the purposes for which such lands are vested in the Authority. This position is consistent with nationally and internationally accepted definitions of these areas.

The Authority has decided that the way we can best achieve our mandate to protect the conservation estate is to acknowledge the Government's prerogative to determine policy in this area, and to -

1. be involved in the process of reviewing applications for exploration, prospecting and mining;
2. identify the most important biological values and natural landscape features of the conservation estate, and seek to protect them from any detrimental impact;
3. recommend appropriate conditions and restrictions so as to minimise detrimental environmental impacts on other areas in the conservation estate.

The Authority therefore scrutinises each application to mine or explore in national parks and nature reserves, and either recommends 'no mining' [if the impact cannot be acceptably minimised] or the imposition of detailed constraints to ensure that, as far as is practicable, little permanent damage to the estate occurs. It is the Authority's view that rehabilitation should not be regarded as a replacement for the pre-existing conservation values.

Approvals for development mining are subject to EPA assessment and either Parliamentary approval or Ministerial agreement. The role of the NPNCA is to advise the Minister for the Environment on such proposals.

The Authority is mindful that mining should not be recommended unless it can be demonstrated that its value to the State clearly justifies the negation of the fundamental principle that National Park and Nature Reserve values should be conserved.

The Authority is likely to recommend against a proposal to mine unless:

- a. there is strategic need for the mineral; or
- b. the mineral resource is rare, is of high value, and its exploitation would be of significant material benefit to the State; or
- c. the mineral resource is not available on other tenures of land, preferably those areas from which the native vegetation has been cleared.