

Inquiry into resources exploration impediments

This submission is made by the Economic Geology Research Unit (EGRU), a semi-commercial subsidiary of the School of Earth Sciences, James Cook University, north Queensland.

EGRU has a membership of economic geologists from university, industry and government bodies. As a promoter of economic geology research and training EGRU is extremely concerned about the long-term downturn in mineral exploration in Australia. This is having its effect on industries and universities ability to sustain economic minerals research and training activity. We believe one of the major impediments to exploration and resource development in Australia is access to land. There is a vicious feedback loop between land access, diminished exploration, fewer ore deposits discovered, lower investor confidence and a fall in export earnings. EGRU is very concerned about the lack of green-fields / off mine site exploration that is now undertaken in Australia and the long term effects this will have on Australia's ability to sustain mineral resource production at current levels. This has a direct link to the current and future employment levels of earth scientists, training of geoscientists and research funding.

This submission addresses each of the areas as suggested in the inquiry document as well as the issue of '*Geoscientist Education and Research*'. We believe however that unless the access to land issue is improved markedly, removal of other impediments may only have marginal impact on exploration activities and the successful management of Australia's mineral endowment.

An assessment of Australia's resource endowment and the rates at which it is being drawn down

Australia's resource endowment is partly a function of the levels of active exploration and research that both industry and research institutes undertake. The impact of the 1997 Native title legislation (and prior judgements) has severely restricted access to land and exploration has been unable to proceed at the levels needed to sustain current resource outputs in most if not all of Australia's mineral resources. The Australian Institute of Geoscientists fact sheet (attachment 1) and Figure 1, Australian Mineral Exploration Expenditure by State illustrate the levels at which investment in new resources has fallen since 1997. It is now at less than 50% of its 1997 level. Many of Australia's larger exploration groups have increasingly focused their activities outside of Australia, while smaller companies have in many cases ceased to operate. It is misleading to believe that current (record) production rates in some of Australia's mineral resources accurately reflect the current health of Australia's minerals industry. There is usually a decade or more lag time between discovery and production and almost all of Australia's current mineral production comes from discoveries made prior to 1992. Unfortunately there have been very few significant discoveries made in Australia since then and many of Australia's current mines will cease to be in

production within a decade. With very few new discoveries Australia's resources industry and our mineral exports will only be a fraction of their present contribution to Australia's economy.

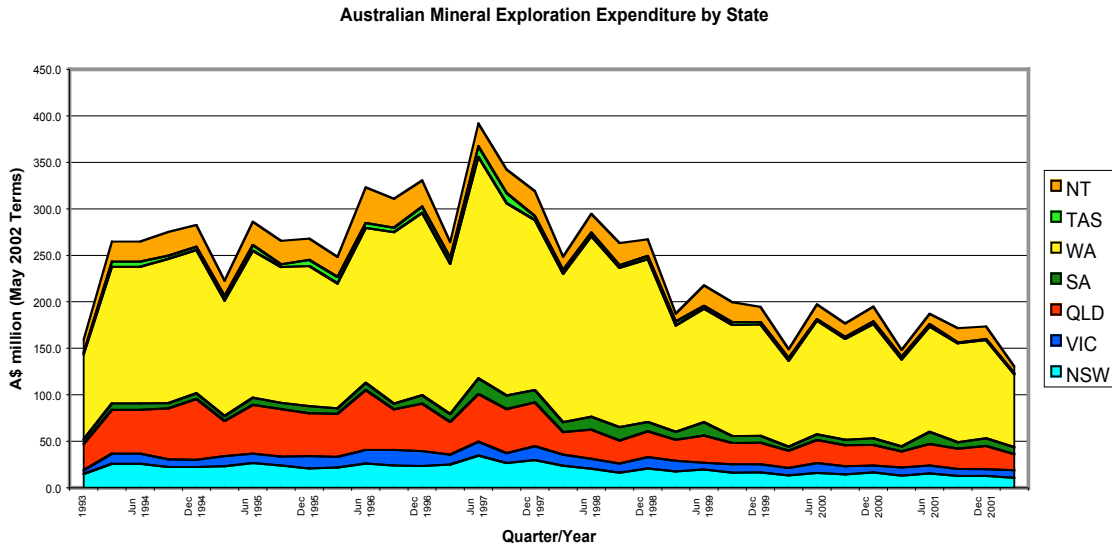


Figure 1. Australian Mineral Exploration Expenditureⁱ by State (from 1994 to 2001)

The gold mining industry (where mine life is often shorter than for basemetal mines) is already showing this decline. The Australian Gold Production chart (figure 2) shows that production from Australian gold mines has been on the decline for the past 2.5 years, despite record gold prices encouraging production in Australian mines.

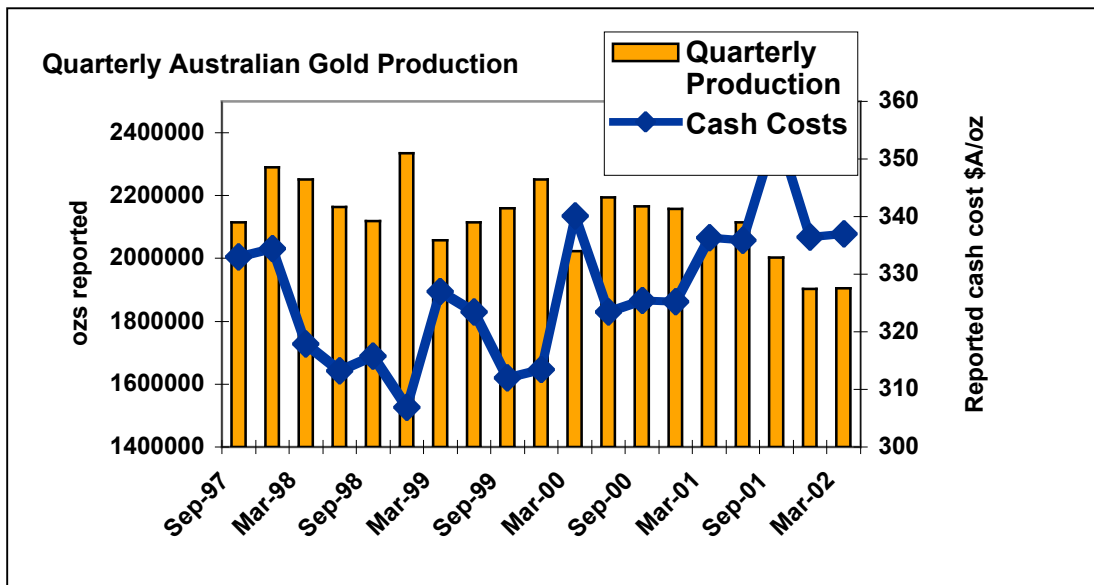


Figure 2. Australian Gold Production, in declineⁱⁱ

A sustained fall in resource production will impact heavily on most States Gross State Product. Queensland is a good example. Mining activity only takes up a very small proportion of land use, yet Queensland's mining industry contributes over \$9.4 billion to Gross State Product and produces 54% of total State merchandise exports. Despite its importance to Queensland, a lack of available exploration land (due mainly to unresolved Native title issues) has created the situation where most explorers have pulled out of Queensland over the last 5 years. It will take many incentives to attract them back. Without a high level of consistent exploration current levels of contributions to Queensland's revenues will not be sustainable, falling dramatically over the next decade to only a fraction of their current value. Serious State budget shortfalls are an obvious prediction, given the amount of income tax presently paid by the mining companies.

The structure of the industry and role of small companies in resource exploration in Australia

Resource exploration has traditionally been based on a diverse mix of both large and small companies ranging down to individual prospectors. This wide diversity of explorers has served the minerals industry well because it encouraged entrepreneurial exploration over a wide range of commodities. Smaller explorers could rely on larger companies for equity funding and larger companies could rely on smaller explorers to pursue exploration targets that were not their main focus. Smaller explorers are in many cases able to act more quickly when an exploration opportunity is identified, and they are willing to pursue smaller targets, as their operation costs can be considerably lower.

Over the last decade there has been an increasing trend towards a smaller pool of larger companies through mergers and acquisitions, and a decreasing number of small to very small operators. Small companies have often been absorbed by these activities and many individual operators have been unable to continue under the current land tenure systems. The loss of "small explorers" diversity from the Australian resources sector has removed one of the competitive advantages of Australia's explorationists.

Impediments to accessing capital, particularly by small companies

Gold exploration has traditionally been one of the key barometers to investor confidence in resources investment. Over the last five years gold exploration expenditure has more than halved, dropping 67% from its high of \$225.9m in June 1997 to \$156m in March 2002. This is not just due to access to land but also partly driven by investor disinterest in the gold sector. Investor disinterest in turn partly reflects the recognition that most gold exploration has been severely restricted by Native Title legislation.

Access to land including Native Title and Cultural Heritage issues

Over most of Australia there has been a widening backlog of exploration applications since the 1993 Mabo court decision. This has only widened further after the Federal Government's Native title legislation was introduced in 1997. In Queensland, Western Australia and NSW, where we have some of Australia's largest mineral resources, a major portion of exploration activity has been stymied by limited access to land. Figure 3 illustrates the widening disparity between applications and approvals for Western Australia. This is typical for most of Australia, excluding Tasmania and South Australia. Applications have now dropped sharply in most States through disinterest and more workable tenure systems overseas.

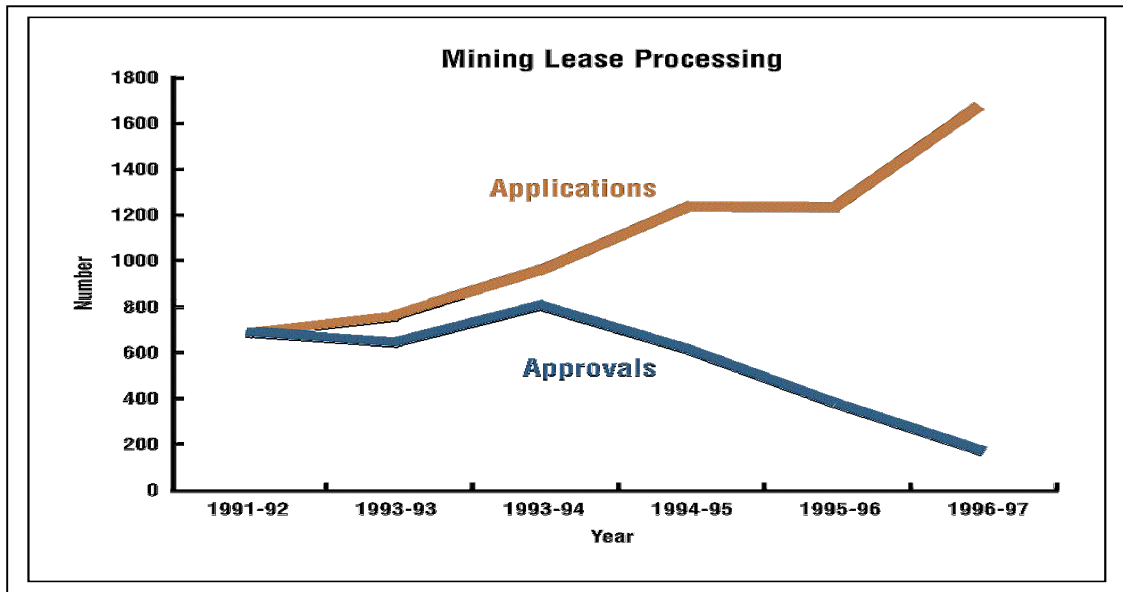
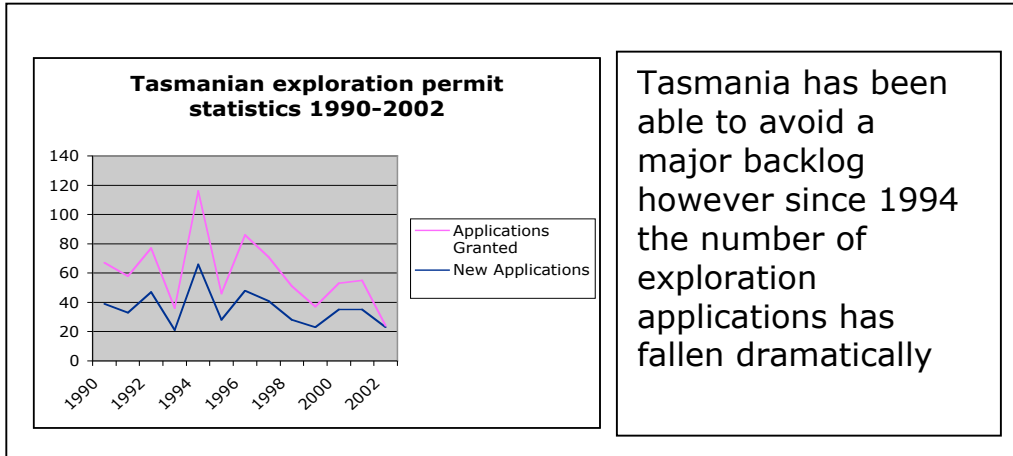
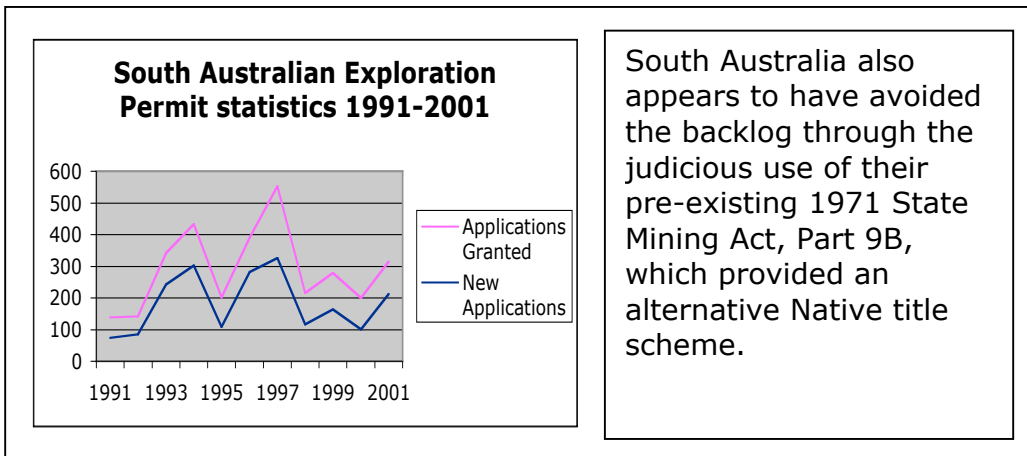


Figure 3. Widening disparity between applications and approvals for Western Australiaⁱⁱⁱ from 1991-2 to 1996-7.

Queensland introduced alternative state provisions to native title in September 2001. Its aim was to simplify the process for exploration. The Queensland Department of Natural Resources and Mines also negotiated a statewide indigenous land-use agreement with the Queensland indigenous working group; however to date few tenements have been granted. New provisions also giving small miners a group right to negotiate with indigenous groups appear yet to be effective with the backlog of applications increasing and small miners continuing to leave the industry.



Tasmania has been able to avoid a major backlog however since 1994 the number of exploration applications has fallen dramatically



South Australia also appears to have avoided the backlog through the judicious use of their pre-existing 1971 State Mining Act, Part 9B, which provided an alternative Native title scheme.

Both Tasmania and South Australia appear to have avoided a Native Title back log crunch, why hasn't this be achieved in other States?

Environmental and other approval processes, including across jurisdictions

Understandably approval processes for exploration often require approval from several government bodies, the concern among many explorers is that veto for approval can be from an authority that has no real understanding of the impact of the activities for which approval is sought. In many cases low impact exploration is all that is required, however an increasing proportion of total exploration expenditure is now being directed towards land access and other compliance costs as opposed to the actual 'in the ground' fieldwork which leads to discoveries of new resources.

Public provision of geoscientific data

Under the Commonwealth Government's spatial data policy, a range of fundamental spatial data sets produced by Geoscience Australia and other government bodies has become progressively available on the Internet for free. This spatial data access policy maximises the value-added activities related to those spatial data and is to be applauded as a real encouragement particularly to small explorers. State mines departments are also now providing some data (company reports, etc.) free to explorers and this is certainly welcomed. However these initiatives have completely failed to deal with the real issues – there is little point having access to high quality remote sensed data when there is so little access to the land depicted by the data.

Relationships with indigenous communities

As a general rule, mining companies work very diligently to establish and foster good relationships with indigenous communities. BHP Cannington is a good example of a company that has established a very good working relationship with local communities, developing this relationship from the pre-feasibility stage of the operation. Cannington is now established as a world leader in silver-lead-zinc mining and enjoys a high level of communication and mutual respect with its indigenous neighbours. Similarly Osborne mines established very good working relationships with its four native title claimants, establishing this relationship with the major claimant the Yulluna People in 1993, two years before the operation was commissioned. Pasminco's Century Mine has a large proportion of indigenous employees as a result of their proactive policies. One of the cultural benefits that accrue from this close association and level of communication is that further sites of cultural significance are being discovered, catalogued, and made available for anthropological study.

These relationships suggest that actual indigenous needs for land and collaboration with non-traditional users of that land are mutually possible. The real difficulties arise at the initial exploration stage. The presence of existing arrangements between native title claimants and mining companies has little effect on new exploration applications due to the unwillingness or incapacity of present governments to simplify arrangements that allow direct and decisive negotiations.

Contributions to regional development

A quote from the Geoscience Australia (formerly AGSO) website gives an indication of just part of the contribution our minerals industry contributes to Australia's wellbeing. 'Australia is the world's leading producer of mining software, and exports of high-technology mining services were worth nearly \$2 billion in 1999-2000 and projected to increase. But the benefits of the minerals industry go beyond the wealth generated by producing and

processing ore and its products. Many of our ports, roads and thriving towns were built by mineral exploration and discovery.'

Collectively major mining operations contribute greatly to our economic health and continue to add value through sustainable development to their regional and local communities. Osborne mine, a typical medium-sized, fly-in/fly-out operation based in far north western Queensland, spent \$76.8M on goods and services in 2001, of which 51% or \$39.3M was spent within the immediate Cloncurry /Mt Isa area. In Townsville (approximately 800km to the north east) where most of Osborne's people live, a further \$20.8M was spent. These figures^{iv} dispel the common perception that fly-in /out mining operations return little to their local area.

The importance of Australia's resources industry cannot be underestimated. On September 9th 1999, Senator the Hon. Nick Minchin Minister for Industry, Science and Resources said^v 'the resource industries are the backbone of the Australian economy. Without their contribution of \$40 billion to exports, we would be a different country. The resources sector is our one unmistakable world-class industry where Australia is *the* world-leader. Minerals and petroleum provide jobs for 83,000 people, and generate a further 327,000 manufacturing jobs downstream. Regional Australia, in particular, has benefited from the resources industry, with mining companies building 25 towns, 12 ports, and 20 airfields'.

Geoscientist Education and Research

Since Native Title legislation there has been a major shift in geoscientist student demographics with reduced undergraduate numbers and increased postgraduate numbers at Australian Universities. Reduced undergraduate numbers appear to be long term while future employment levels for geologists remain uncertain. There has been an initial increase in Postgraduate levels as geoscientists leave the workforce and seek higher qualifications with the view that in a future of lower employment environment they will be better placed. While undergraduate levels are likely to continue to reduce, the higher numbers of postgraduates in research and study are not likely to be sustained. Levels of Masters student enrolments have been falling over the last 2/3 years and it is becoming increasingly difficult to find Australian geoscientists interested in returning to university to undertake a PhD.

Traditionally about 75% of Australia's geoscientists have been employed either directly or indirectly in the exploration and mining industry. Since 1996 more than 55% have been forced to seek alternate careers or move overseas. The loss of employment opportunities in exploration constitutes a major disincentive for students to undertake geoscience studies, despite growing opportunities and a demonstrable need for relevant geoscientific

skills in other fields such as agriculture, natural resources and environmental management.

Although the rate of (13.8%) unemployment amongst those remaining in Australian exploration is still high, many in the industry have the view that Australia faces a future shortage of geoscience skills unless positive steps are taken, additional to existing Government initiatives in tertiary education. A key remedy could include further incentives for geoscientists to upgrade their training with postgraduate qualifications. This will assist in efforts to keep geoscientists in the industry and retain the value of Australia's past investment in the skills of these professionals.

A decline in the general quality of secondary school science teaching has also contributed to the malaise. Industry, university and government geoscientists are belatedly attempting to remedy this by offering casual teaching services to high schools, but this is an inadequate longer-term solution. The average high schooler has a limited understanding that Australia's dependency on primary produce export dollars equates with a need for engineers, geologists, miners and environmentalists. Rather they naively believe Australia is at the forefront of secondary industries such as computing and IT or genetics and medicine, none of which deliver significant capital to Australia in comparison with the mining industry. This could be remedied by curriculum review – it is staggering to note how few high schools include earth sciences in their Year 11 and 12 curricula in Queensland and Western Australia, given how many geoscientists have been employed in these States. Alternatively a process of secondary teacher training in the resource sector could work.

ⁱ The diagram does not directly represent ABS figures, but was constructed by the Australian Institute of Geoscientists (AIG) after adjusting expenditure figures to March 2002 dollars.

ⁱⁱ Chart by Australian Gold Council, statistics from Australian Bureau of statistics.

ⁱⁱⁱ Chart by The Chamber of Minerals and Energy of Western Australia Inc.

^{iv} Osborne Mines 2001 Sustainability Report, p 9, Placer Dome Asia Pacific (June 2002)

^v Reporting on the Commonwealth Governments Perspective on the Resources Industry at a conference on the 'Future of Mining'