MRPA_04

# MINERAL RESOURCE POTENTIAL

# ASSESSMENTS OF SELECTED AREAS

# IN CENTRAL TO SOUTHERN TASMANIA

DEPARTMENT OF RESOURCES AND ENERGY

DIVISION OF MINES AND MINERAL RESOURCES

AUGUST 1990

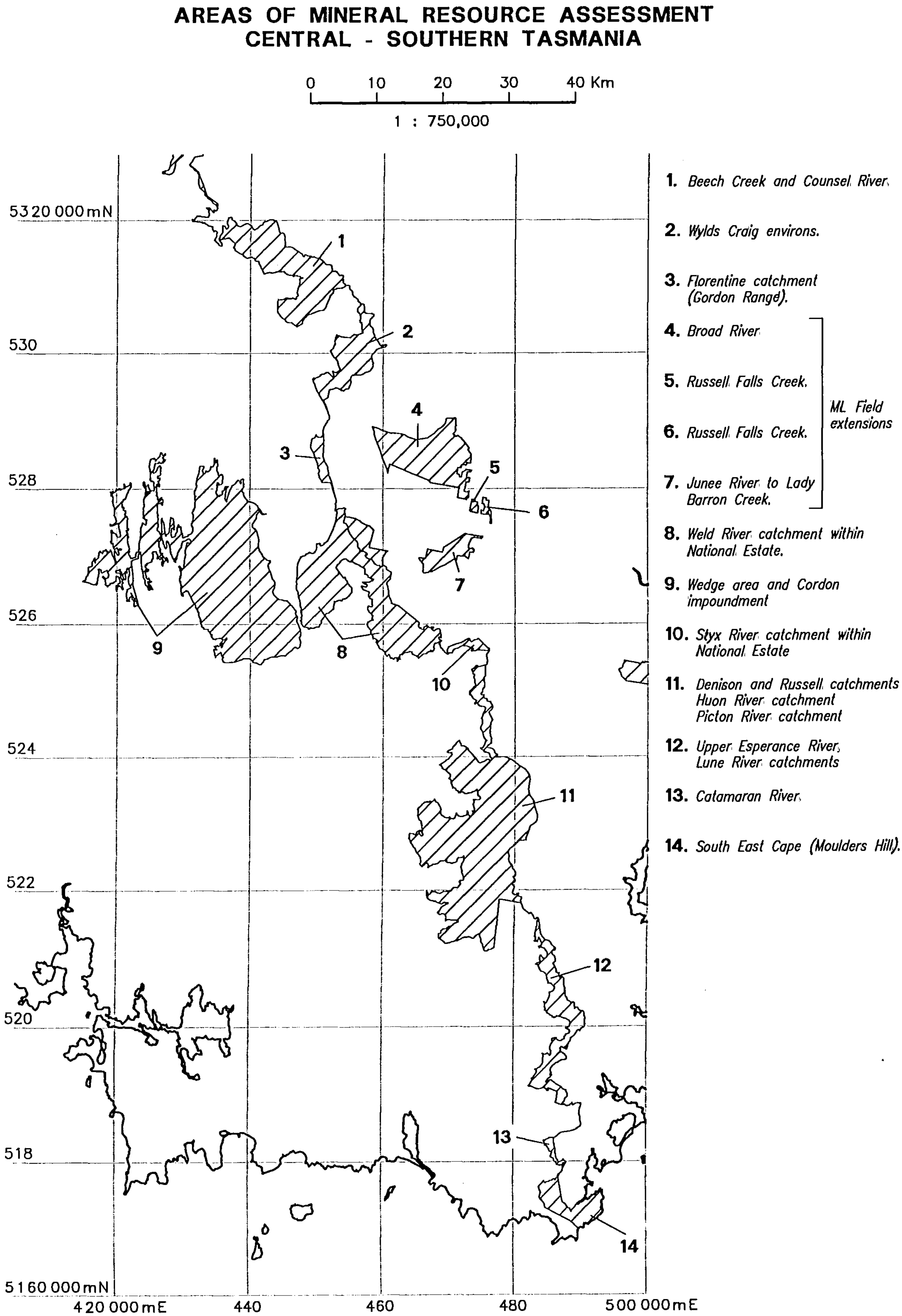
AREAS OF MINERAL RESOURCE ASSESSMENT
CENTRAL - SOUTHERN TASMANIA
0 10 20 30 40 Km
1 : 750,000
5320 000mN
530
528
526
524
522
520
518
5160 000mN
420 000mE
440
460
480
500 000mE
1. Beech Creek and Counsel River.
2. Wylds Craig environs.
3. Florentine catchment (Gordon Range).
4. Broad River
5. Russell Falls Creek.
6. Russell Falls Creek.
7. Junee River to Lady Barron Creek.
ML Field extensions
8. Weld River catchment within National Estate.
9. Wedge area and Gordon impoundment
10. Styx River catchment within National Estate
11. Denison and Russell catchments Huon River catchment Picton River catchment
12. Upper Esperance River, Lune River catchments
13. Catamaran River.
14. South East Cape (Moulders Hill).

Figure 1

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## LIST OF FIGURES

## INTRODUCTION

At the request of the mining forum, fourteen discrete areas between Lake King William in central Tasmania and South East Cape in southern Tasmania have been assessed for their mineral resource potential (Fig. 1). This document presents the mineral resource potential assessments of the various areas and outlines the data on which they are based.

The assessments presented here are regarded as preliminary. Our aim at this stage has been to develop a systematic approach to the problem of assessment and to identify the data relevant to the problem. There has been no synthesis or reinterpretation of the results of programmes carried out by mineral exploration companies and others in and around the various areas, nor have all relevant data from company reports yet been examined. No additional field work has been carried out. Preparation of the material presented in this document has taken about 20 person days exclusive of drafting and typing and has drawn on the existing data bases in the Division of Mines and Mineral Resources.

## DEFINITIONS

In a previous document entitled 'Contrasting Approaches to the Assessment of Mineral Resource Potential' the Division discussed matters relating to the assessment of mineral resource potential and gave its preferred definitions of the various classes of mineral resource potential. These definitions are reproduced below and we restate the view that a mineral resource potential assessment is a product of the circumstances that apply at the time the assessment is made. As the available data, theoretical concepts, exploration techniques, commodity prices and industrial usages which influence mineral resource potential change, so will the assessments.

A HIGH MINERAL RESOURCE POTENTIAL exists where the geological characteristics favourable for resource accumulation are known to be present, or where enough of these features are present to support the relevant genetic model and where there is evidence that mineralisation, not necessarily of economic size or grade, has taken place.

A MODERATE MINERAL RESOURCE POTENTIAL exists where the geological data suggest that the factors favourable for formation of a class of deposit are present or can be reasonably inferred, or where the geological features of the area show a reasonable degree of fit with those of the deposit class considered. There need not be evidence of mineralisation in the area.

A LOW MINERAL RESOURCE POTENTIAL exists where the geological conditions suggest that mineral concentrations are unlikely and that the relevant genetic model cannot be supported. As noted by Taylor and Steven (1983), this requires an element of positive knowledge.

A category of UNKNOWN MINERAL RESOURCE POTENTIAL is used in situations where <u>either</u> the geoscientific data base is inadequate to assess the likelihood of the resource accumulation, <u>or</u> the relevant deposit models are so poorly understood that a reasonable assessment cannot be made. This definition is not to be equated with low mineral resource potential, but takes into account a high degree of uncertainty or incompleteness in the available information.

PRESENTATION

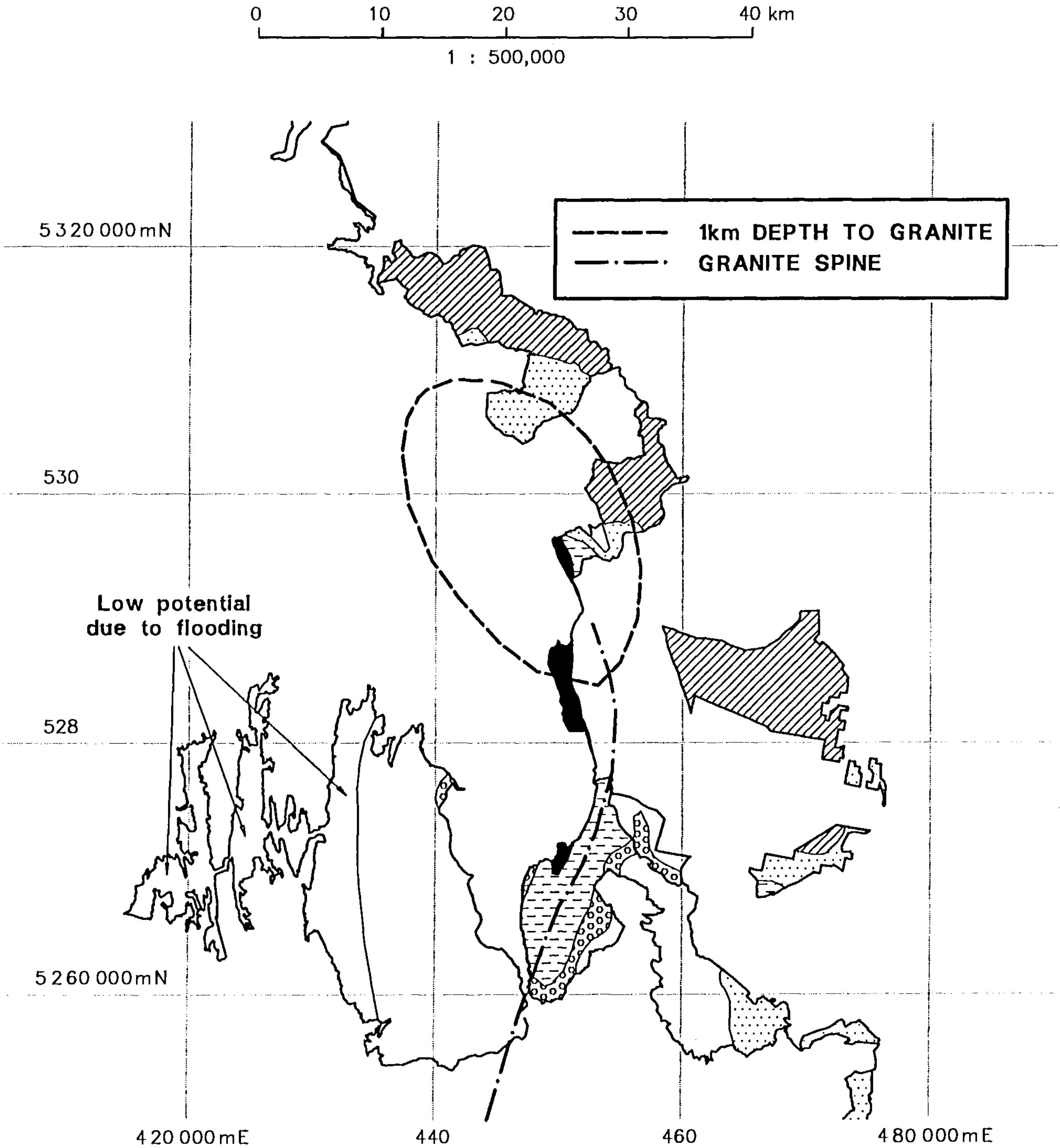
The fourteen areas of interest are treated separately and the material for each is presented under headings entitled 'DATA' and 'ASSESSMENT'. In the data segments there are listings of geological maps, a geological summary and listings of geophysical coverage and known mineral occurrences. Along with the data specific to each area there are regional maps showing the geology of central and southern Tasmania (Fig. 3), known mineral occurrences (Fig. 4), inferred depth to granite based on geophysics (Fig. 5) and distribution of ultramafic rocks (Fig. 6).

A brief listing of previous mineral exploration is given in the data section. Though it is not comprehensive, the listing provides an effective introduction to the major programmes which have been carried out in the relevant areas. The references cited, and many others, are on open file at the library of the Division of Mines and Mineral Resources. For current exploration licences the Division has an obligation to confidentiality and data from these licences has only been used where specific permission has been obtained.

In the segments entitled 'ASSESSMENT' there are reviews of the quality of the available geological mapping, geophysical coverage and geochemical coverage. Relevant potential resource models are listed and use has been made of the United States Geological Survey's publication on mineral deposit models as well as models drawn from experience elsewhere in Tasmania. Current mineral resource potential assessments for the various models are listed as are the results of the earlier mineral resource assessment by the Bureau of Mineral Resources. Qualifications associated with extending current mineral resource potential assessments to future mineral resource potential assessments are also listed.

The results of the mineral resource potential assessments are summarised in Figure 2.

## PRELIMINARY MINERAL RESOURCE POTENTIAL MAP
## AREAS OF INTEREST IN CENTRAL TASMANIA




### MINERAL RESOURCE POTENTIAL

*Low for metallics; unknown for dimension stone; locally high for construction materials.*

*Low for coal, oil shale, metallics; locally high for construction materials*

*Moderate for Sn–W veins within 1 Km granite–depth contours; unknown metallic potential in underlying carbonate; locally high for construction materials.*

*High for carbonate replacement Sn within 1 Km granite–depth contour and moderate over granite spine; Moderate for base metals generally, Carlin gold. High for limestones; locally high for construction materials, silica*

*Moderate to high for PGE, Au palaeoplacer deposits.*

*Moderate to high for metallics associated with ultramafic rocks, Au in shear zones; moderate for metallics associated with tholeiitic basalt, base metals in carbonate; moderate for Sn–W veins and carbonate replacement tin in dolomite over granite spine. Moderate to high for dolomite, silica, construction materials.*

Figure 2a

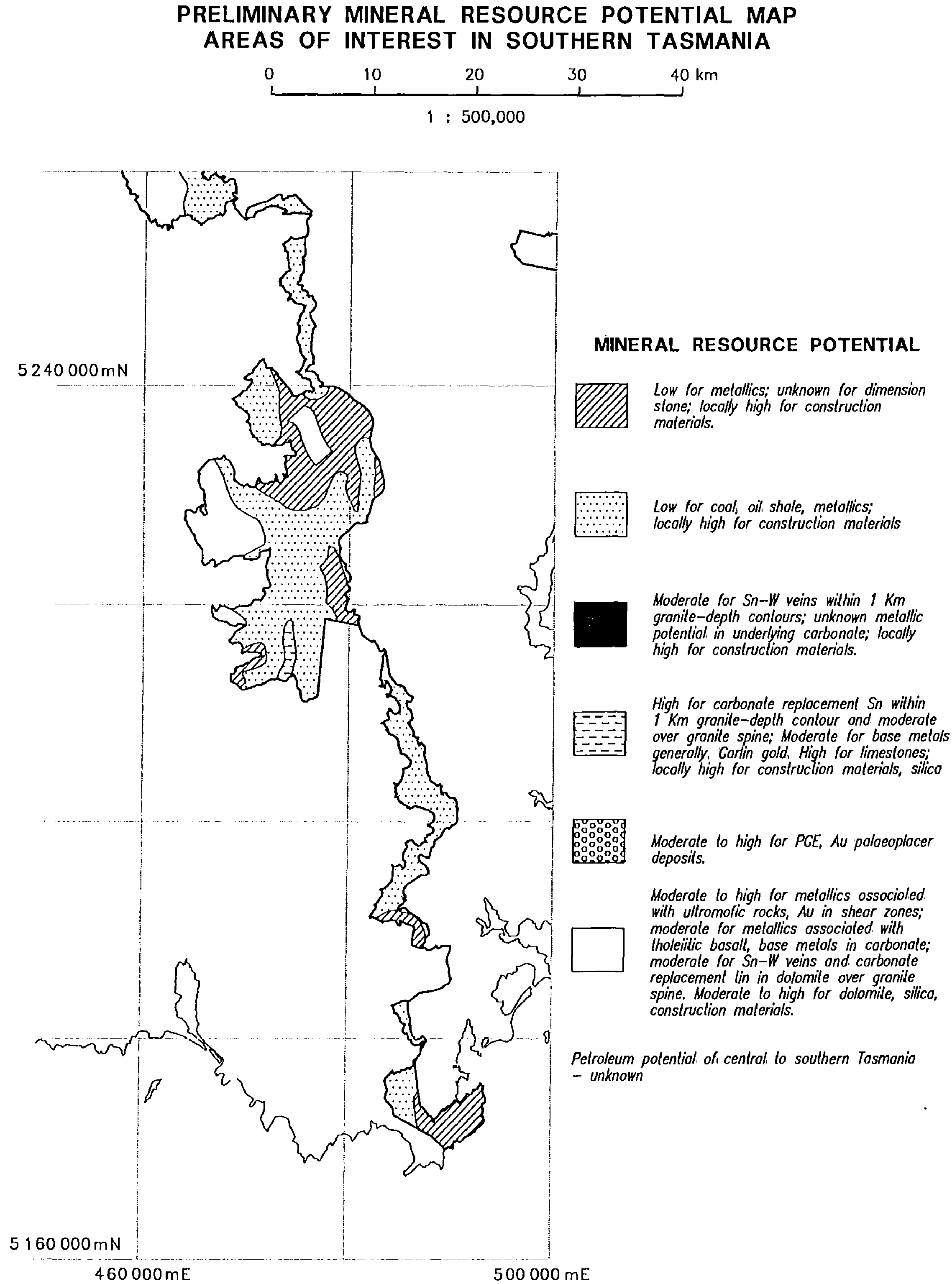

PRELIMINARY MINERAL RESOURCE POTENTIAL MAP
AREAS OF INTEREST IN SOUTHERN TASMANIA
0 10 20 30 40 km
1 : 500,000
5 240 000mN
5 160 000mN
460 000mE
500 000 mE
MINERAL RESOURCE POTENTIAL
Low for metallics; unknown for dimension stone; locally high for construction materials.
Low for coal, oil shale, metallics; locally high for construction materials
Moderate for Sn–W veins within 1 Km granite–depth contours; unknown metallic potential in underlying carbonate; locally high for construction materials.
High for carbonate replacement Sn within 1 Km granite–depth contour and moderate over granite spine; Moderate for base metals generally, Carlin gold. High for limestones; locally high for construction materials, silica
Moderate to high for PGE, Au palaeoplacer deposits.
Moderate to high for metallics associated with ultramafic rocks, Au in shear zones; moderate for metallics associated with tholeiitic basalt, base metals in carbonate; moderate for Sn–W veins and carbonate replacement tin in dolomite over granite spine. Moderate to high for dolomite, silica, construction materials.
Petroleum potential of central to southern Tasmania – unknown

Figure 2b

# LEGEND - 1:500,000 TASMANIA, GEOLOGY

| | | |
|---|---|---|
| HOLOCENE | *Alluvium, sand, gravel and talus.* | |
| PLEISTOCENE | *Till, fluvioglacial, periglacial, and associated deposits.* | |
| | *Erosional surface.* | |
| TERTIARY | *Non-marine sequences (1); marine limestone (2); basalt and related igneous rock types (3).* | |
| | *Low angle unconformity.* | |
| TRIASSIC | *Fluvio-lacustrine sequences of sandstone, siltstone, mudstone (1) with carbonaceous sequences indicated (2).* | UPPER PARMEENER SUPER GROUP |
| PERMIAN | *Fresh water sequence with some coal measures.* | UPPER PARMEENER SUPER GROUP |
| UPPER CARBONIFEROUS | *Upper glacio-marine sequence of pebbly mudstone, pebbly sandstone and limestone.* *Fresh water sequence with some coal measures.* *Lower glacio-marine sequence of pebbly mudstone, pebbly sandstone, minor limestone, Tasmanite oil shale and basal tillite.* | LOWER PARMEENER SUPER GROUP |

## WESTERN TASMANIA

| | | |
|---|---|---|
| UPPER-MIDDLE DEVONIAN | *Terrestrial cavern fillings (grid ref. 442 436)* | EUGENANA BEDS |
| | *Unconformity attributed to the Tabberabberan Orogeny.* | |
| LOWER-DEVONIAN SILURIAN | *Quartzite, sandstone, siltstone, and shale; Devonian limestone-siltstone (1)* | ELDON GROUP & CORRELATES; SPERO BAY GROUP |
| ORDOVICIAN | *Limestone sequence with siltstone in some areas.* *Siliceous conglomerate, shallow water quartzose sandstone & siltstone.* | JUNEE GROUP AND CORRELATES |
| CAMBRIAN | *Middle-Upper Cambrian fossiliferous usually greywacke turbidite sequences (1); acid with intermediate volcanic and associated rocks dominant (2), basic-intermediate volcanic and associated rocks dominant (3); probably Cambrian unfossiliferous usually greywacke turbidite sequences (4); probably Cambrian unfossiliferous orthoquartzite sequence (5).* | INCLUDING DUNDAS GROUP (fossiliferous); MT READ VOLCANICS AND OTHER FORMATIONS |
| | *Usually unconformity attributed to Cambrian movements; occasionally unconformity e.g. parts of western Tasmania* | |
| PRECAMBRIAN | *Comparatively unmetamormorphosed sequences. Orthoquartzite-mudstone sequences (1); quartzwacke turbidite successions (2); dolomite (3); basalt lava (4).* | |
| | *Metamorphic rocks of dominantly metaquartzite and pelitic sequences, amphibolite indicated (1).* | |

## EASTERN TASMANIA

| | | |
|---|---|---|
| | *Unconformity attributed to the Tabberabberan Orogeny.* | |
| LOWER DEVONIAN TREMADOCIAN-CAMBRIAN(?) | *Micaceous quartzwacke turbidite sequences dominant (1); mudstone sequences dominant (2).* | MATHINNA BEDS |

## IGNEOUS ROCKS

| | |
|---|---|
| TERTIARY | *Basalt and related rock types.* |
| CRETACEOUS | *Syenite.* |
| CRETACEOUS | *Appinite.* |
| JURASSIC | *Dolerite and related rock types.* |
| LOWER CARBONIFEROUS (?)-DEVONIAN | *Dominantly adamellite-granite; biotite hypersthene-adamellite porphyry (1).* |
| LOWER CARBONIFEROUS (?)-DEVONIAN | *Dominantly granodiorite.* |
| CAMBRIAN | *Granitic rocks.* |
| CAMBRIAN | *Coarser grained basic rocks* |
| CAMBRIAN | *Serpentinite, peridotite and associated rocks.* |
| CAMBRIAN | *Acid with intermediate volcanic and assoc. rocks.* |
| CAMBRIAN | *Basic-intermediate volcanic and associated rocks.* |
| PRECAMBRIAN | *Granite.* |
| PRECAMBRIAN | *Dolerite.* |

Figure 3

# GEOLOGY - CENTRAL TASMANIA

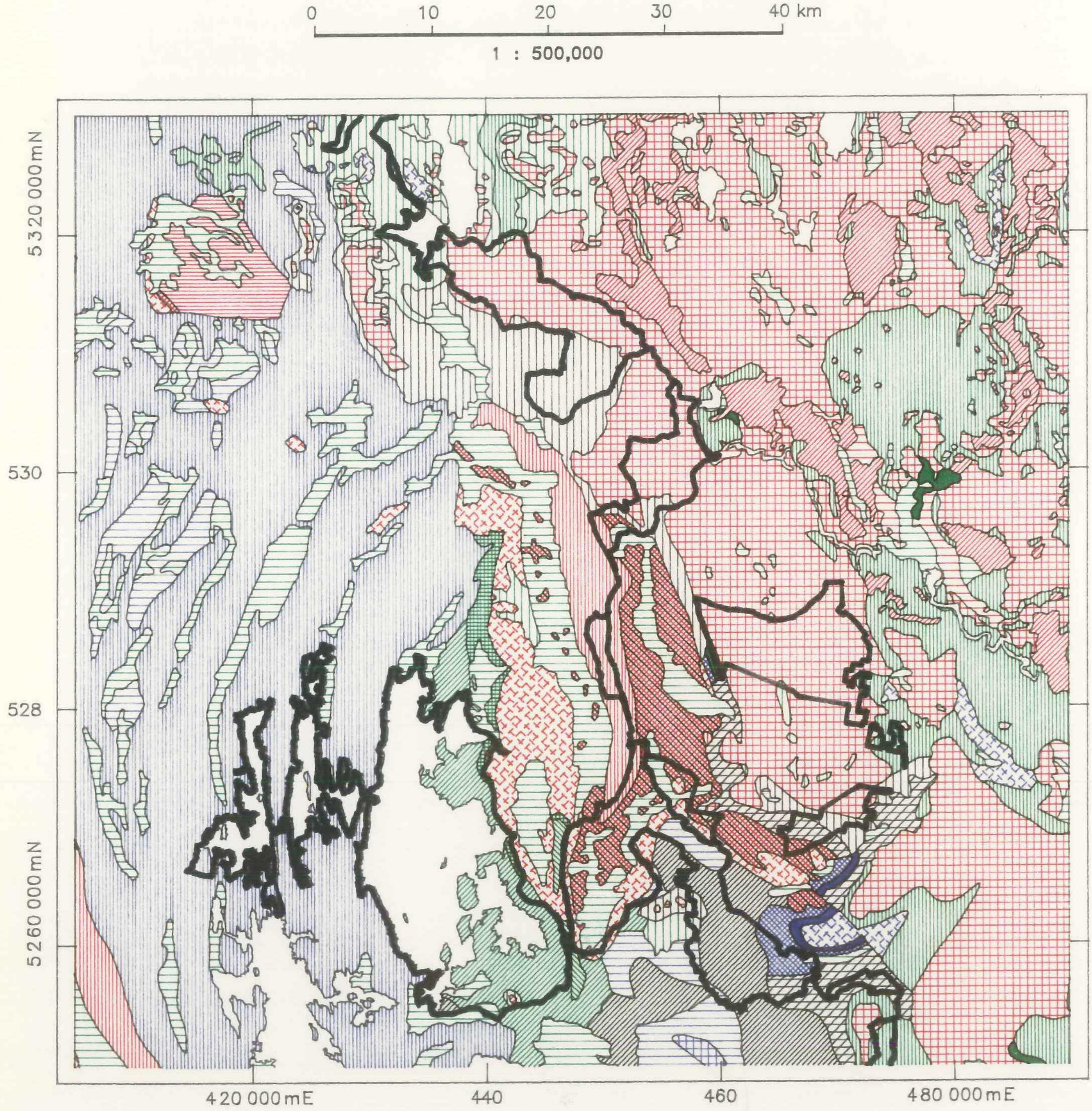



Figure 3a

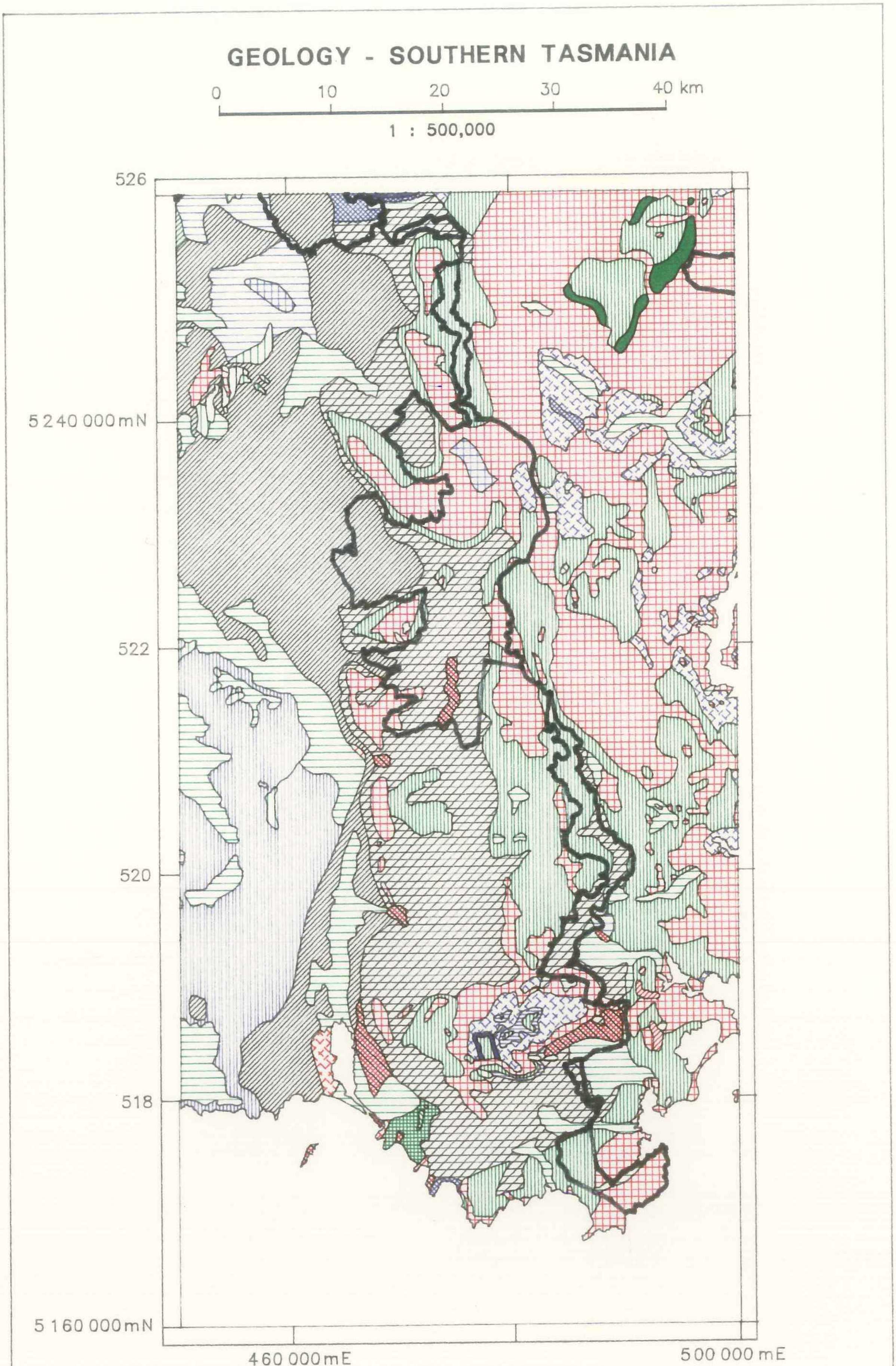
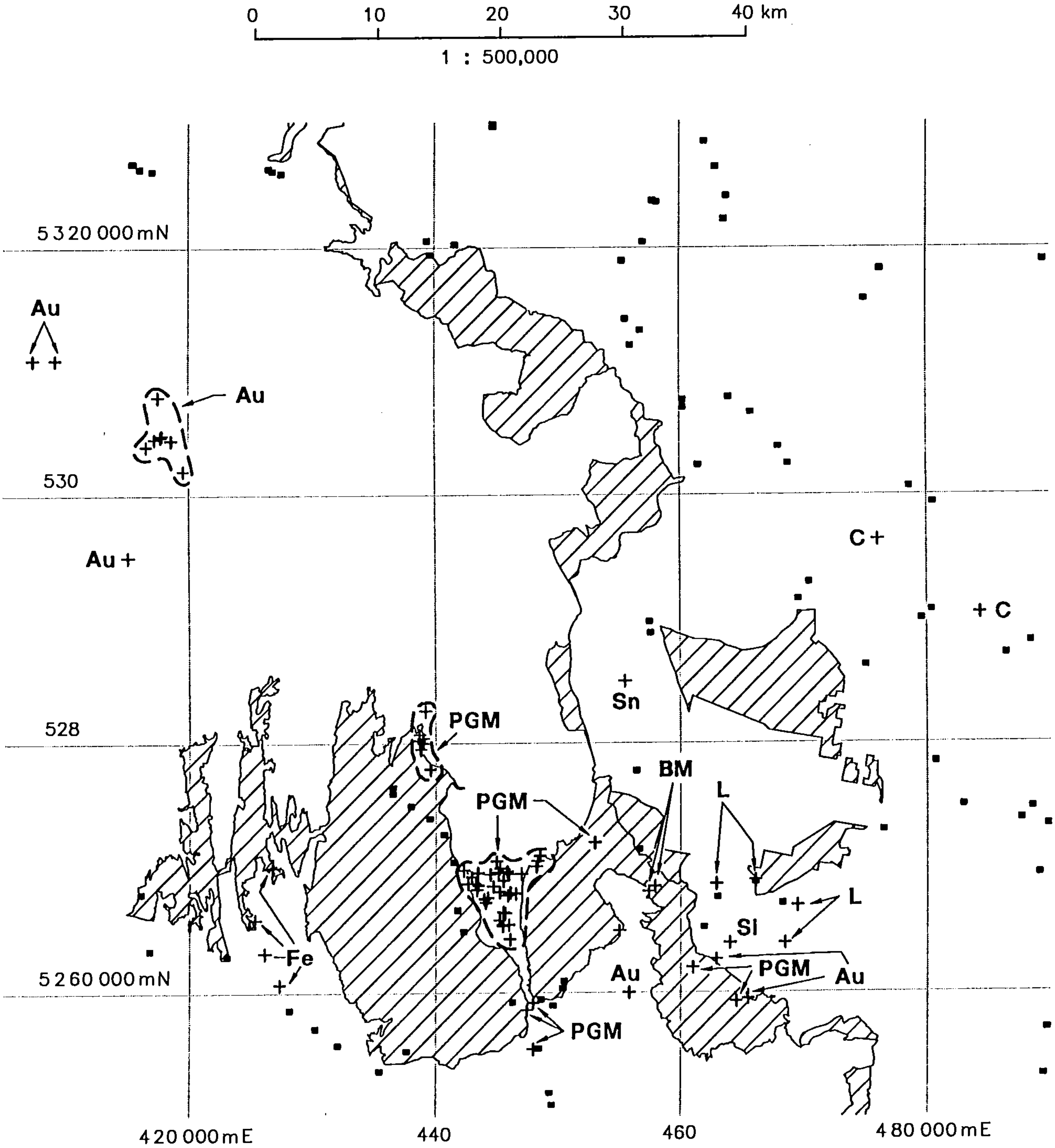

GEOLOGY - SOUTHERN TASMANIA
0
10
20
30
40 km
1 : 500,000
526
5 240 000 mN
522
520
518
5 160 000 mN
460 000 mE
500 000 mE

Figure 3b

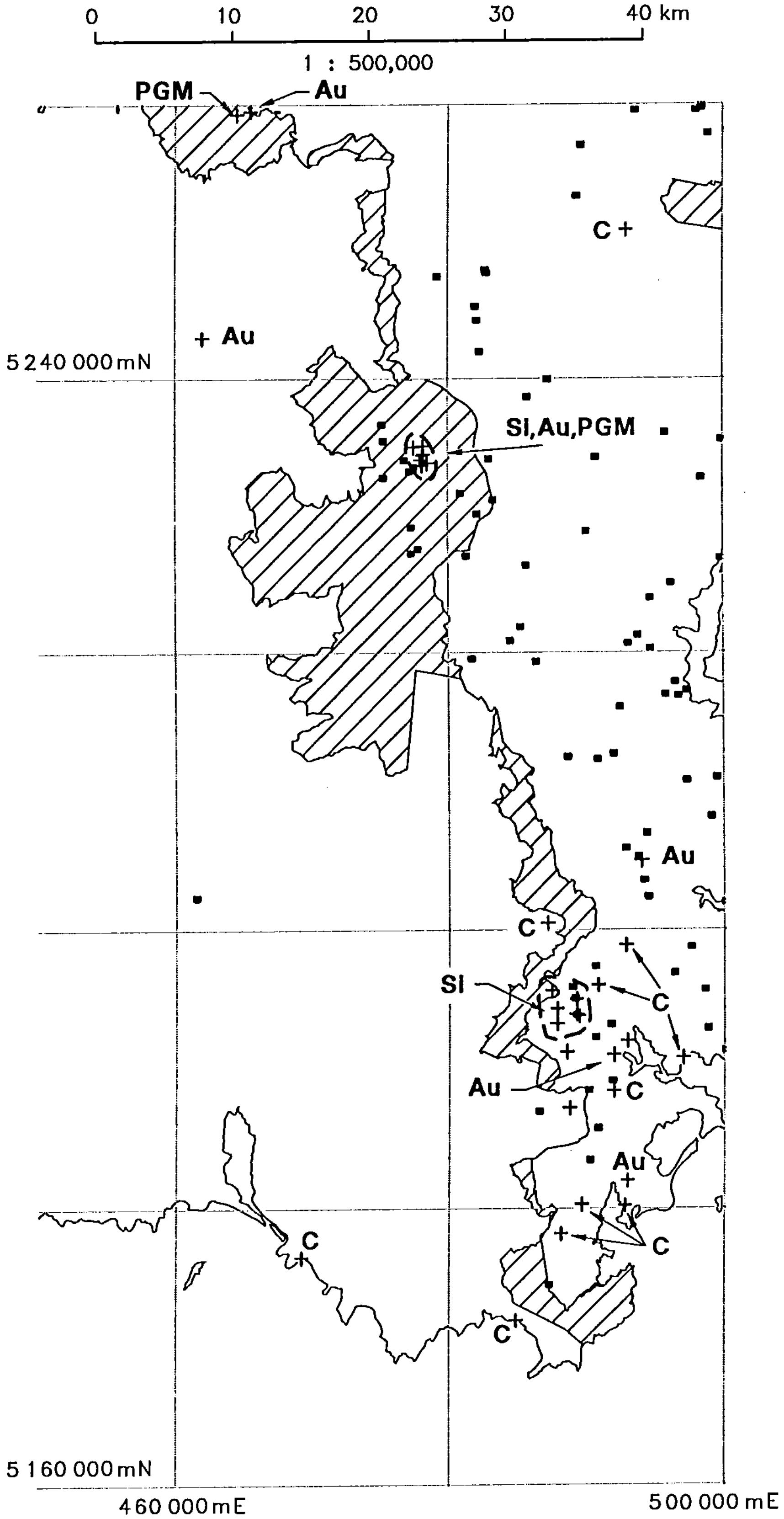
# MINERAL OCCURRENCES AND CONSTRUCTION MATERIAL WORKINGS CENTRAL TASMANIA




| | | | | | |
|---|---|---|---|---|---|
| **CROSSES (+) : METALLIC & INDUSTRIAL MINERALS** | | | | | |
| **Au** | : | *Gold (mostly placer)* | **Fe** | : | *Iron formations* |
| **Bm** | : | *Base Metals (Cu,Pb,Zn,Ba)* | **L** | : | *Limestone* |
| **Sn** | : | *Tin / Tungsten* | **SI** | : | *Silica* |
| **PGM** | : | *Platinum-Group Minerals ± Cr,Au,Ni,Cu, Asbestos* | **C** | : | *Coal* |
| **SQUARES (▪) : CONSTRUCTION MATERIALS** | | | | | |

Figure 4a

# MINERAL OCCURRENCES AND CONSTRUCTION MATERIAL WORKINGS
## SOUTHERN TASMANIA




CROSSES (+) : METALLIC & INDUSTRIAL MINERALS

| | | | | | |
|---|---|---|---|---|---|
| **Au** | : | *Gold (mostly placer)* | **Fe** | : | *Iron formations* |
| **Bm** | : | *Base Metals (Cu,Pb,Zn,Ba)* | **L** | : | *Limestone* |
| **Sn** | : | *Tin / Tungsten* | **Si** | : | *Silica* |
| **PGM** | : | *Platinum-Group Minerals ± Cr,Au,Ni,Cu, Asbestos* | **C** | : | *Coal* |

SQUARES (▪) : CONSTRUCTION MATERIALS

Figure 4b

AREA 1. BEECH CREEK AND COUNSEL RIVER

DATA

(a) Geological Maps

Corbett, K.D. and Brown, A.V. 1975. Tasmanian Geological Atlas 1:250 000 Series. SK55-5. Queenstown. Dep. Mines Tasm.

Prider, R.T. 1948. The geology of the country around Tarraleah, Tasmania. Pap. Proc. R. Soc. Tasm. (1947).

The 1:250 000 geological compilation map for the area is based on minimal information. Work by Prider (1947) takes in a fringe along the NE edge whilst the geology of the remainder of the area is air photo interpretation by Corbett and Brown (1975).

(b) Geological summary

The portion of the area extending from Guelph Basin to the lower reaches of Beech Creek is thought to be entirely underlain by Jurassic dolerite. Most of the Beech Creek and Hanlon Creek drainage basins are thought to be underlain by Parmeener Supergroup.

(c) Geophysical coverage

Richardson, R.G., Leaman, D.E. 1987. Tasgrav-the Tasmanian gravity data base. Unpub. Rep. Dep. Mines Tasm. 1987/02.

Aero Service, 1966. Interpretation report: Airborne magnetometer survey in southwest Tasmania for Broken Hill Pty Co. Ltd. Dep. Mines Tasm. TCR 66-445.

Virtually no gravity measurements have been made within the area of interest. Coverage of the area has been obtained by interpolation of regional data (1 km station spacing) to the NE and reconnaissance data (5 km station spacing) to the SW.

Aeromagnetic data for the area was derived at a flight-line spacing of 0.25 miles (approx. 400 m) but is relatively old (25 years). The quality of the data is assessed as regional rather than as detailed (R.G. Richardson, pers.comm.).

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous mineral exploration

EL 30/80

The area of interest formed part of this large exploration licence which extended from central Tasmania to eastern and south-eastern Tasmania. The licence was held by the BHP Co. Pty Ltd. and was explored for coal occurring in the Parmeener Supergroup.

Two landings were made in the area of interest during a helicopter reconnaissance investigation. Both sites were between Beech Creek and Hanlon Creek and the rocks were identified as sandstones of Triassic age (Upper Parmeener Supergroup), thus substantiating part of the air photo interpretation of Corbett and Brown (1975). It was concluded that, if coal bearing rocks were present in the area, they would be thin.

Reference: Williams, A. 1984. Final report on E.L. 30/80. Mobil Energy Minerals Australia Inc., Dep. Mines Tasm. TCR 84-2116.

EL 40/80

This E.L. was pending during the period 1980-1983 but was not taken up.

EL 1/88

This E.L. is current and covers a large part of eastern Tasmania. It is held by Conga Oil Pty Ltd to explore for oil in sub-surface rock formations. Details of work are given in Appendix 2.

ASSESSMENT

(a) Quality of data

Geological mapping of the area of interest is imprecise. Little detail is known of the rock units shown on the 1:250 000 compilation map (Corbett and Brown, 1975) and the possibility exists of other rock units being present in the area.

Gravity coverage within the area is virtually non-existent. Coverage of about one gravity station per square kilometre is necessary for precise estimates of subsurface structures of shallow to moderate depth.

There is no systematic geochemical coverage of the area.

(b) Preliminary listing of possible resource models

Coal in the Parmeener Supergroup.
Oil shale in the Parmeener Supergroup.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988) Categories 2, 3 in Appendix 1.

(2) This work: - low for coal
- low for oil shale
- low for metallics
- high for construction materials near Butlers Gorge.

Confidence level low because of imprecise geological mapping and unknown variation in rocks with depth.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level low because of imprecise geological mapping and unknown variation in rocks with depth.

AREA 2. WYLDS CRAIG ENVIRONS

DATA

(a) Geological maps

Corbett, K.D. and Banks, M.R. 1974. Ordovician stratigraphy of the Florentine Synclinorium, southwest Tasmania. Pap.Proc.R.Soc.Tasm., 107.

Corbett, K.D. and Brown, A.V. 1975. Tasmanian Geological Atlas 1:250 000 Series. SK55-5. Queenstown. Dep. Mines Tasm.

Gulline, A.B. and Forsyth, S.M. 1976. Tasmanian Geological Atlas 1:250 000 Series. SK55-6. Oatlands. Dep. Mines Tasm.

Jennings, I.B. 1955. Geology of portion of the middle Derwent area. Pap.Proc.R.Soc.Tasm., 89.

Mapping in the SW portion of the area of interest was at a scale of 1:50 000 (Corbett, pers.comm.) whilst Jennings' (1955) mapping in the central and NE portions was at 1 inch:1 mile. This work was compiled in the 1:250 000 sheets covering the area (Queenstown, Oatlands).

(b) Geological summary

In the SW portion of the area Gordon Limestone is overlain by the lowermost formations (quartz-sandstone, siltstone) of the Tiger Range Group. The Parmeener Supergroup overlies these units and is itself overlain by Jurassic dolerite which occupies the bulk of the area.

(c) Geophysical coverage

References as for Area 1

Gravity station coverage ranges from regional along the SE edge of the area to reconnaissance along the NW edge.
Aeromagnetic coverage is at regional scale.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous mineral exploration

EL 40/80

This EL was pending during the period 1980-1983 but was not taken up.

EL 55/80

This EL included the southern and southeastern parts of the area of interest. It was held by The Shell Co. of Aus. Ltd to explore for stratabound Cu/Pb/Zn and Sn/W skarn deposits, Cr/Ni/Au and platinoids, and diamonds.

A single panned concentrate was taken in the area of interest. It gave background values for Cu/Pb/Zn and Sn/W.

Anomalous values of Sn/W were obtained over Gordon Limestone in Cashions Creek about 9 km south of the area of interest. Isolated, minor occurrences of sphalerite are known in Gordon Limestone south of the area of interest (P.W. Baillie, pers.comm.).

Reference: Ruxton, P.A., 1982. EL 55/80 - Adamsfield. Progress report on exploration during the period 18.5.81-1.7.82. The Shell Co. of Australia Ltd Dep. Mines Tasm. TCR 82-1821.

EL 1/88

This large EL for petroleum is discussed in Appendix 2.

ASSESSMENT

(a) Quality of data

Much of the area appears to have been mapped at the satisfactory regional scales of 1:50 000 and 1 inch : 1 mile. However, the work is old and it is not known to what extent air photo interpretation was used in the mapping. The Parmeener Supergroup has not been subdivided into its constituent parts.

Gravity station coverage is not adequate for the precise determination of subsurface structures of shallow to moderate depth.

Minimal geochemical data is available.

(b) Preliminary listing of possible resource models

Reference: Cox, D.P. and Singer, D.A. 1986. Mineral deposit models. U.S. Geol. Surv. Bull. 1693.

Note: The numbers cited below and in the equivalent sections for other areas described in the following pages relate to this reference.

This area is partly within the inferred 1 km granite depth contour (Fig. 5).

14c Carbonate replacement Sn (in Gordon Limestone).
31a Sedimentary 'exhalative' Zn-Pb (in Gordon Limestone).
32b Appalachian Zn (in Gordon Limestone).
Palaeoplacers of PGE, Au, Sn near unconformity at base of Parmeener Supergroup.

Non-metallic resources
Coal in Parmeener Supergroup.
Limestone in Gordon Limestone.
Dimension stone in Jurassic dolerite.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al (1988) Categories 2, 3, 10 in Appendix 1.

(2) This work:

Metallic resources

14c high.
31a low to moderate.
32b moderate.
Palaeoplacers low.

Non-metallic resources

| | |
|---|---|
| Coal | unknown (?low) |
| Limestone | high in upper Gordon Limestone. |
| Dimension stone | unknown |
| Construction materials | locally high |

Confidence level low because of uncertainties regarding geological mapping and unknown variation of rocks with depth.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level low because of uncertainties regarding geological mapping and unknown variation of rocks with depth.

AREA 3. FLORENTINE CATCHMENT (GORDON RANGE)

(a) Geological Maps

Brown, A.V., McClenaghan, M.P., Turner, N.J., Baillie, P.W., McClenaghan, J., Lennox, P., Williams, P.R. 1982. Geological Atlas 1:50 000 Series Sheet 8112N. Huntley. Dep.Mines Tasm.

Corbett, K.D. and Brown, A.V. 1975. Tasmanian Geological Atlas Series: SK55-5. Queenstown. Dep.Mines Tasm.

Mapping in the area of interest was a combination of ground traverses and air photo interpretation and its accuracy is regarded as consistent with 1:50 000 presentation (P.W. Baillie, pers.comm.).

(b) Geological summary

Rocks underlying the area comprise quartz sandstone, siltstone and mudstone of the Siluro-Devonian Tiger Range Group.

(c) Geophysical coverage

References as for area 1.

Gravity station coverage is in the regional category.
Aeromagnetic coverage is also in the regional category.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous exploration

EL 50/80
This EL was pending during the period 1980-1983 but was not taken up.

EL 55/80

This EL included the eastern parts of the area of interest. It was held by The Shell Co. of Aus. Ltd to explore for stratabound Cu/Pb/Zn, Sn/W skarn deposits, Cr/Ni/Au and platinoids, and diamonds. No samples were collected in the area of interest.

EL 1/88

This large EL for petroleum is discussed in Appendix 2.

ASSESSMENT

(a) Quality of data

The area of interest has been mapped at the satisfactory regional scale of 1:50 000 but ground traverses were limited.

Gravity and aeromagnetic coverage are or regional standard.

There is no systematic geochemical coverage of the area.

(b) Preliminary listing of possible resource models

Metallic Resources

References as for Area 2.

The area is partly within the 1 km granite depth contour (Fig. 5).

| | | | |
|---|---|---|---|
| 15a, b | Sn-W vein systems in surface rocks. | | |
| 14c | Carbonate replacement Sn | ) | |
| 31a | Sedimentary 'exhalative' Zn-Pb | ) | in subsurface |
| 32b | Appalachian Zn | ) | Gordon Limestone |

Non-metallic resource

Construction materials

## GRANITE DEPTH CONTOURS - CENTRAL TO SOUTHERN TASMANIA

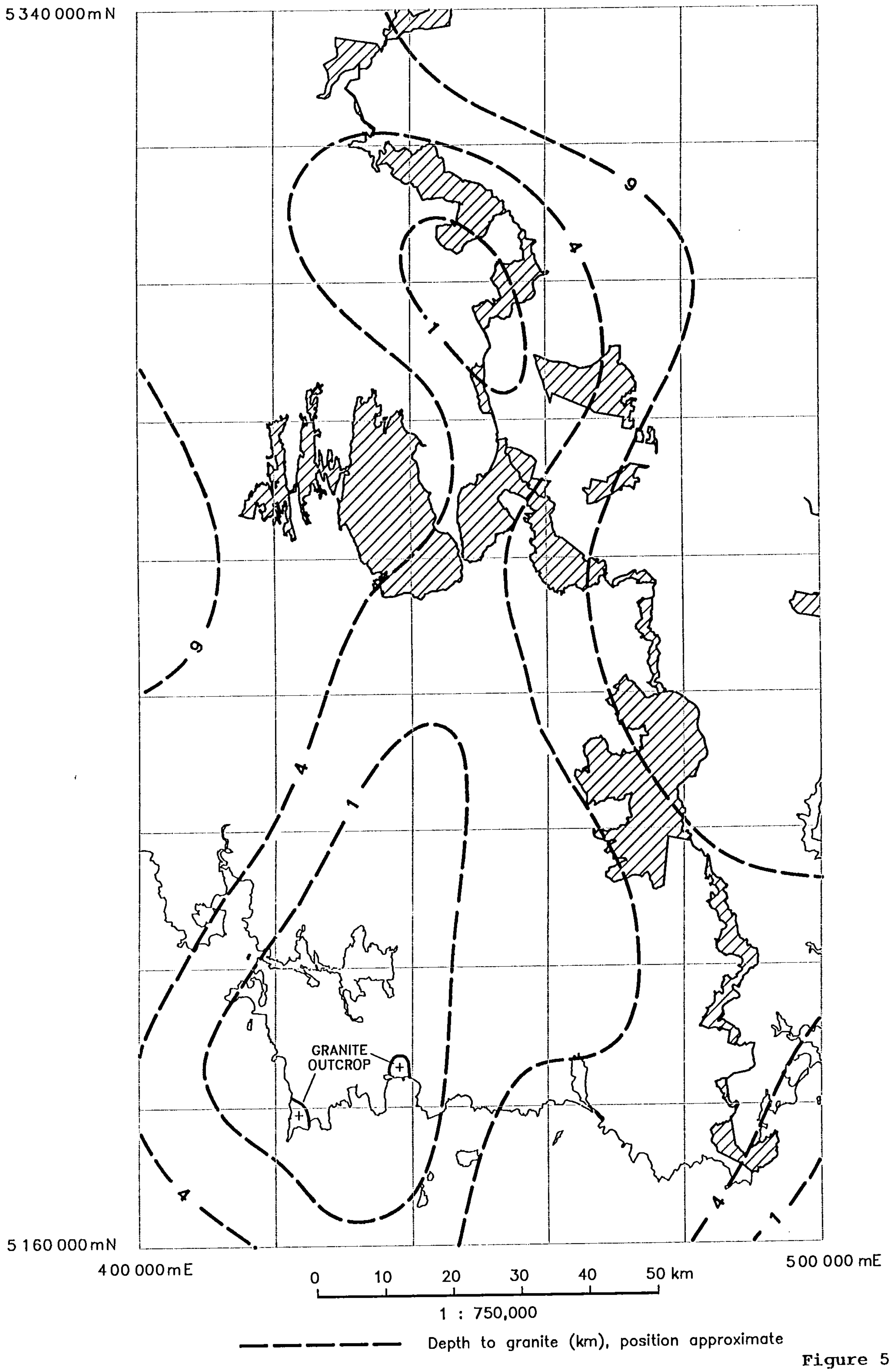



Figure 5

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). No known potential - see Appendix 1.

(2) This work:

Metallic resources

| | |
|---|---|
| 15a, b | Moderate |
| 14c | unknown |
| 31a | unknown |
| 32b | unknown |

Fair confidence in geology, both at surface and inferred at shallow depth. Geochemical data would improve assessment of 15a, b.

Non-metallic resources

Construction materials - locally high.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Fair confidence in geology. Geochemical data would improve assessment.

AREA 4. BROAD RIVER (MT FIELD EXTENSION)

(a) Geological Maps

Corbett, K.D., 1964. Geology of the Florentine Valley area. Hons. Thesis, Univ.Tasm.

Gulline, A.B. and Forsyth, S.M. 1976. Tasmanian Geological Atlas 1:250 000 Series. SK55-6. Oatlands. Dep.Mines Tasm.

Jennings, I.B. 1955. Geology of portion of the middle Derwent area. Pap.Proc.R.Soc.Tasm., 89.

Reconnaissance map, 1953. Sheet 74-Ellendale. Dep.Mines Tasm., unpubl.

Mapping of the western portion of the area by Corbett (1964) and of the northern part by Jennings (1955) was at 1 inch:1 mile. The Ellendale reconnaissance mapping in the eastern part of the area had an accuracy equivalent to 1:250 000 scale. The geology of the central part of the area is at 1:250 000 scale (Gulline and Forsyth, 1976).

(b) Geological Summary

A small part in the east is underlain by upper Parmeener Supergroup. The remainder of the area comprises Jurassic dolerite which overlies the Parmeener Supergroup.

(c) Geophysical coverage

Reference as for area 1.

Gravity station coverage ranges from regional in the SW to the reconnaissance category in the central and eastern portions of the area.

Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous mineral exploration

EL 30/80

The NE part of the area of interest was within this large exploration licence which was held by the BHP Co. Pty Ltd to explore for coal occurring in the Parmeener Supergroup. No work appears to have been done within the area of interest by the explorers.

EL 55/80

The western part of the area was within this EL which was held by The Shell Co. of Australia Ltd to explore for stratabound Cu/Pb/Zn, Sn/W skarn deposits, Cr/Ni/Au and platinoids, and diamonds. No work was done within the area of interest by the explorers.

ASSESSMENT

(a) Quality of data

Though parts of the area are mapped at a satisfactory regional scale, a substantial part is only known through reconnaissance mapping. However, the mapping is probably of sufficient accuracy to exclude the presence of rocks older than the Parmeener Supergroup.

Gravity station coverage is not adequate for the precise determination of subsurface structures of shallow to moderate depth.

There is no geochemical data.

(b) Preliminary listing of possible resource models

Metallic resources

No models at this time.

Non-metallic resources

Coal in the Parmeener Supergroup.
Dimension stone in Jurassic dolerite.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). The area was not in their assessment.

(2) This work:

Metallic resources

Low prospectivity at surface.

Non-metallic resources

| | |
|---|---|
| Coal | low. |
| Dimension stone | unknown. |
| Construction materials | locally high. |

Confidence level would be improved by more accurate geological mapping.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in sub-surface formations - unknown.

Confidence level would be improved by more accurate geological mapping.

AREAS 5. & 6. RUSSELL FALLS CREEK (MT FIELD EXTENSION)

DATA

(a) Geological Maps

Gulline, A.B. and Forsyth, S.M. 1976. Tasmanian Geological Atlas 1:250 000 Series. SK55-6. Oatlands. Dep.Mines Tasm.

Reconnaissance map. 1953. Sheet 74 - Ellendale. Dep.Mines Tasm. unpubl.

The accuracy of geological mapping in both the areas of interest is roughly equivalent to the 1:250 000 mapping scale.

(b) Geological Summary

There is a little Jurassic dolerite in the two areas and a small occurrence of the lower Parmeener Supergroup in area 6. However, the bulk of both areas is underlain by the upper Parmeener Supergroup.

(c) Geophysical Coverage

References as for Area 1.

Gravity coverage is regional for area 6 and reconnaissance for area 5.

Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous Exploration

EL 1/88
Details of this large EL for petroleum are given in the appendix.

## ASSESSMENT

(a) Quality of data

Geological mapping in both these small areas is of reconnaissance standard but is probably of sufficient accuracy to exclude the presence of rocks older than the Parmeener Supergroup.

In Area 5 gravity station coverage is not adequate for the precise determination of subsurface structures of shallow to moderate depth.

There is no geochemical data.

(b) Preliminary listing of possible resource models

Metallic resources

No models at this time.

Non-metallic resources

Coal in Parmeener Supergroup.
Dimension stone in Jurassic dolerite.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). The areas were not in their assessment.

(2) This work:

Metallic resources

Low prospectivity at surface.

Non-metallic resources

| | |
|---|---|
| Coal | low |
| Dimension stone | unknown (?low) |
| Construction materials | low |

Confidence level would be improved by more accurate geological mapping.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level would be improved by more accurate geological mapping.

## AREA 7. JUNEE RIVER TO LADY BARRON CREEK (MT FIELD EXTENSION)

### DATA

(a) Geological Maps

Everard, G.B. in Hughes, T.D. 1957. Limestone in Tasmania. Miner.Resour.geol.Surv.Tasm. 10.

Gulline, A.B. and Forsyth, S.M. 1976. Tasmanian Geological Atlas 1:250 000 Series. Sheet SK55-6. Oatlands. Dep.Mines.Tasm.

Reconnaissance Map, 1953. Sheet 74-Ellendale. Dep.Mines Tasm. unpubl.

Mapping at the Junee River (south western) end of the area of interest is at 1 inch to 0.5 miles (approx. 1:33 000). In the remainder of the area mapping is at about 1:250 000.

(b) Geological summary

Gordon Limestone of Ordovician age outcrops around the Junee River and is overlain by the Parmeener Supergroup. The latter unit underlies the remainder of the area of interest except at high elevations in the NNW where there is Jurassic dolerite.

(c) Geophysical coverage

References as for Area 1.

The southeastern part of the area has regional gravity station coverage. There are no stations in the northwestern part but the small size of the area and the proximity of surrounding stations gives it a reconnaissance coverage.

Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

Limestone has been obtained within Area 7 at Junee Quarry and at a number of peripheral localities.

466 100 m E 5 269 000 m N (Junee Quarry). Currently operating at small scale in the Benjamin Limestone Formation.

Peripheral locations

469 500 m E 5 267 000 m N, 462 900 m E 5 268 700 m N. Old quarries in the Karmberg Limestone Formation.

468 500 m E 6 264 000 m N. New prospect in the Benjamin Limestone Formation and the Cashions Creek Limestone Formation.

(e) Previous exploration

EL 37/79
No work is recorded in the areas of interest under this exploration licence which was aimed at investigating oil shale and oil in the Parmeener Supergroup.

EL 1/88
Details of this large exploration licence for petroleum are given in the appendix.

ASSESSMENT

(a) Quality of data

Geological mapping at the SW end of the area of interest is at a satisfactory scale of 1 inch : 0.5 miles but the remainder of the area is of reconnaissance standard. The Parmeener Supergroup is not subdivided into its constituent parts.

Gravity station coverage in much of the area is inadequate for the precise determination of subsurface structures of shallow to moderate depth.

There is no systematic geochemical coverage of the area.

(b) Preliminary listing of possible resource models

Metallic resources

Reference as for Area 2.

26a Carlin Au in carbonaceous limestone and jasperoid.
31a Sedimentary 'exhalative' Zn-Pb (in Gordon Limestone)
32b Appalachian Zn (in Gordon Limestone).
Palaeoplacers of PGE, Au, Sn near unconformity at base of Parmeener Supergroup.

Non-metallic resources

Coal in Parmeener Supergroup.
Limestone in Gordon Limestone.
Dimension stone in Jurassic dolerite.
Construction materials.
Silica in Ordovician succession.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). The area was not in their assessment.

(2) This work:
Metallic resources

| | |
|---|---|
| 26a | Moderate |
| 31a | Low to moderate |
| 32b | Moderate |
| Palaeoplacers | Low |

Non-metallic resources

| | |
|---|---|
| Coal | Low |
| Limestone | High in upper Gordon Limestone |
| Dimension stone | Unknown |
| Construction materials | Locally high |
| Silica | High near John Bull Creek |

Confidence level would be improved by more accurate geological mapping and systematic geochemical coverage of the SW end.

(d) Future mineral resource potential

(1) For identified resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level would be improved by more accurate geological mapping and systematic geochemical coverage of the SW end.

## AREA 8. WELD RIVER CATCHMENT WITHIN NATIONAL ESTATE

### DATA

(a) Geological maps

Brown, A.V., McClenaghan, M.P., Turner, N.J., Baillie, P.W., McClenaghan, J., Lennox, P.G. and Williams, P.R. 1982. Tasmanian Geological Atlas 1:50 000 Series, Sheet 73 (8112N), Huntley, Dep.Mines Tasm.

Calver, C.R. in prep. Tasmanian Geological Atlas 1:50 000 Series, Sheet 81 (82125), Styx. Dep. Mines Tasm.

Corbett, K.D. 1964. Geology of the Florentine Valley area. Hons. Thesis. Univ.Tasm.

Corbett, K.D. & Brown, A.V. 1976. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-5, Queenstown. Dep.Mines Tasm.

Farmer, N. 1979. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-8, Hobart. Dep. Mines Tasm.

Gulline, A.B. & Forsyth, S.M. 1976. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-6, Oatlands. Dep. Mines Tasm.

Turner, N.J., Calver, C.R., McClenaghan, M.P., McClenaghan J., Brown, A.V. & Lennox, P.G. 1985. Tasmanian Geological Atlas 1:50 000 Series, Sheet 80 (81125), Pedder. Dep. Mines Tasm.

Williams, P.R. and Corbett, E.B. 1976. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-7, Port Davey. Dep. Mines Tasm.

Area 8 is at the junction of four of the 1:250 000 compilation maps. Nearly the entire area has been mapped at 1:50 000, the exception being the small easterly projection south of Wherretts Lookout, in the NE.

(b) Geological summary

The geology of Area 8 is diverse. Much of its eastern lobe comprises older successions of quartzarenite, siltstone, mudstone and dolomite (including silicified dolomite). Complex associations of mafic volcanics, mudstone, greywacke and chert overlie these older rocks and structural lenses of ultramafic rocks are associated with these complexes. Younger Cambro-Ordovician successions of quartzose conglomerate and sandstone, calcareous mudstone and limestone occupy most of the northern and western parts of Area 8. In the southeast and at Wherretts Lookout there are occurrences of the Parmeener Supergroup.

(c) Geophysical coverage

Reference as for Area 1.

Gravity station coverage ranges from regional (about 35% of the area) to reconnaissance.

Aeromagnetic coverage is regional.

(d) Mineralisation

From Dep. Mines Tasm. data base MIRLOCH. Reference numbers relate to this data base.

73058 453 000 m E 5 272 000 m N (Florentine Valley area). Scattered osmiridium occurrences. Source unknown.

80001 455 000 m E 5 265 000 m N (W side Mt Mueller). Scattered gold occurrences. Source unknown.

81001 465 500 m E 5 595 000 m N (Styx River/Gold Creek). Gold and tin reported in alluvium. Source unknown.

81002 461 000 m E 5 262 000 m N (tributary to Fourteen Mile Creek). Placer osmiridium derived from ultramafic rocks.

81005 464 500 m E 5 259 300 m N (Styx River). Osmiridium derived from ultramafic rocks.

73033 457 400 m E 5 268 000 m N (Mt Mueller Mine). Copper in veins.

73034 457 900 m E 5 268 000 m N (Humboldt Mine). Silver, lead, gold, copper, zinc, barium, arsenic in veins.

Mineralisation is known at the following localities peripheral to Area 8.

73047 445 600 m E 5 269 600 m N (Adamsfield). Osmiridium, chromite, asbestos, nickel and gold in ultramafic rocks, Cambro-Ordovician placer deposits, Cainozoic placer deposits. White clay in alluvial deposits.

Unlisted 461 500 m E 5 265 500 m N (Gordon River Road). Silica flour with lump silica to ESE. Associated with Precambrian dolomitic sequences.

(e) Previous mineral exploration

EL 1/59 (Lyell-EZ), EL 13/65 (BHP)

These were large exploration licences which included the area of interest. Work in both cases was focussed on the nearby ultramafic rocks extending south from Adamsfield rather than on the area of interest though limited rock chip sampling for base metals and phosphate was carried out in adjacent areas. Airborne electromagnetic and magnetic surveys by these explorers included the area of interest.

Reference: Anon, 1972. Rock, soil sampling and magnetics, miscellaneous areas, EL 13/65. Broken Hill Pty Co. Ltd. Dep.Mines Tasm. TCR 72-926.

EL 8/79

Exploration in this licence was targeted on finding a Renison-style, massive sulphide, carbonate-replacement, tin deposit. Stream sediment geochemistry for Sn, W, Cu, Pb, Zn, Ag, As, Au, Sb, Ni, Co and Cr in upper Styx River, Fourteen Mile Creek and upper Tyenna River gave no confirmed anomalous values though the presence of Sn in the drainage was established. Rock chip sampling at the Humboldt Mine and Mueller Mine gave no significant Sn or precious metal values. An airborne Dighem survey identified anomalous areas which were investigated under EL 19/83 (see below).

Reference: Anon., 1983. Exploration licence 8/79, Maydena, Tasmania. Final report. BHP Exploration Department. Dep.Mines Tasm. TCR 84-2084.

EL 37/79

In this exploration licence the presence of oil shale and fracture-controlled oil accumulations in the lower Parmeener Supergroup was investigated. Reconnaissance mapping led to diamond drilling at two sites within 1 km of the eastern boundary of the area of interest. Thin bands of low yielding oil shale were found in the Woody Island Siltstone. No further work was undertaken.

Reference: Anon., 1982. Exploration Licence 37/79, Styx River, Tasmania. BHP Exploration Department. Dep. Mines Tasm. TCR 82-1866.

EL 19/83

The Dighem anomalies identified under EL 8/79 were investigated under this exploration licence and some additional stream sediment geochemistry was obtained in streams W and S of Mt Mueller. Best value for gold in stream sediments was about 0.5 grams/tonne but no significantly anomalous values of Cu, Pb, Zn, Sn, Sb or W were obtained. Relatively high values of Cr and Ni corresponded to ultramafic rocks.

Three Dighem anomalies S of Mt Mueller were gridded and surveyed by electromagnetic and magnetic techniques also by soil augering. All contained sheared ultramafic rock and sediments. Diamond drilling in one locality did not identify significant mineralisation. However, high arsenic of up to 0.42% in another locality, combined with 'subtly anomalous Au in certain samples', would have been followed up had the area been less uncertain in terms of land tenure and less remote.

Reference: Anon. 1984. Exploration licence 19/83, Mt Mueller, Tasmania. Final Report. BHP Exploration Department. Dep. Mines Tasm. TCR 84-2179.

EL 14/84

The possible presence of a Carlin-type gold deposit was investigated under this exploration licence. Work focussed on the area around Fourteen Mile Creek, just east of the area of interest, with a best rock-chip result of 0.15 gm/tonne Au. Humboldt mine was resampled with no encouraging results.

Reference: Suppree, J. 1985. Combined final report and progress report, twelve months to July 1985, exploration licence 14/84, Maydena, Tasmania. Amoco Minerals Australia Company, Report 435. Dep. Mines Tasm. TCR 85-2375.

EL 4/85

This exploration is current and work has focussed on the ultramafic rocks extending south from Adamsfield. The western edge of the area of interest is included in the licence.

## ASSESSMENT

### (a) Quality of data

Nearly the entire area has been mapped at the satisfactory regional scale of 1:50 000.

Gravity station coverage in a large part of the area is inadequate for the precise determination of subsurface structures of shallow to moderate depth.

There is partial systematic geochemical coverage of the area.

(b) Preliminary listing of possible resource models

Metallic resources

Reference as for Area 2.

Note: The area overlies an inferred granite spine (Fig. 5) and contains lenses of sheared ultramafic rocks (Fig. 6) in mèlange.

| | |
|---|---|
| 8a, 8c, 8d, 9 | Chromite, Co-Ni, asbestos, platinoid group elements associated with ultramafic rocks. |
| 14c | Carbonate replacement Sn in limestone, dolomite. |
| 15a, b | Sn-W veins. |
| 24a, b, c | Massive sulphide, manganese associated with tholeiitic basalts. |
| 26a | Carlin gold in carbonaceous limestone and jasperoid. |
| 31a, 32b, c | Pb-Zn, Zn, Cu-Pb-Zn in carbonate rocks. |
| 36a | Low sulphide gold in shear zones. |
| 39a, b | Placer, palaeoplacer PGE, Au. |

Non-metallic resources

Oil shale in Parmeener Supergroup.
Limestone in Gordon Limestone.
Dolomite in pre-late Cambrian succession.
Lump silica in quartzarenite, silicified dolomite.
Silica flour after silicified dolomite.
Construction materials.

(c) Current mineral resource potential

(1) Higgins et al. (1988). Categories 2, 5, 6, 7 and unknown. See Appendix 1.

**KNOWN AND POTENTIAL AREAS OF OCCURRENCE FOR PGM-Cr-Au BEARING ROCKS CENTRAL - SOUTHERN TASMANIA**

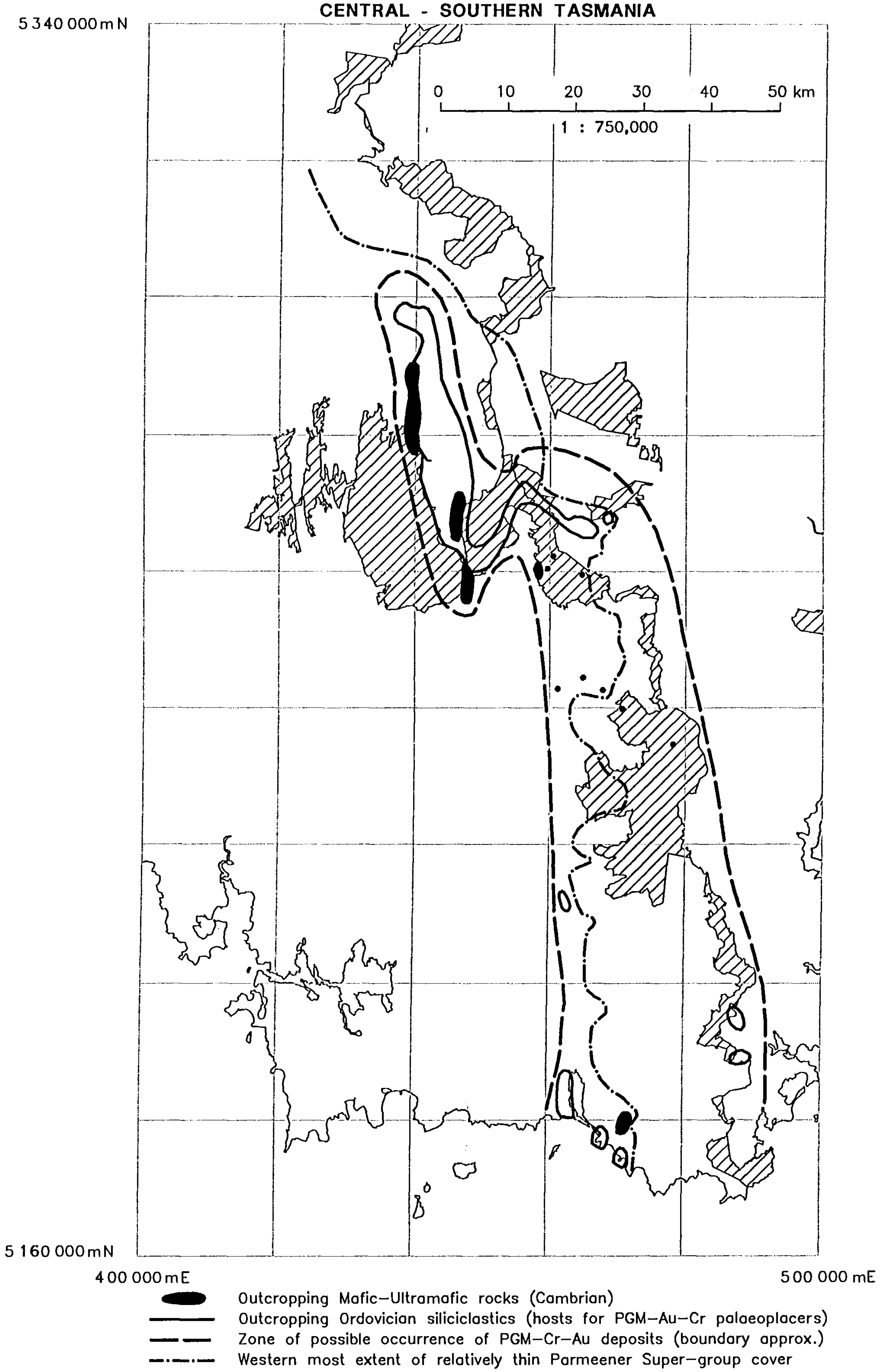



**Figure 6**

(2) This work:

Metallic resources

| | |
|---|---|
| 8a | High, 8c, d, 9 Moderate. |
| 14c | Moderate |
| 15a, b | Moderate |
| 24a, b, c | Low to moderate |
| 26a | Moderate |
| 31a, 32b | Moderate, 32c Low to moderate |
| 36a | Moderate to high |
| 39a, b | High |

Non-metallic resources

| | |
|---|---|
| Oil shale | Low |
| Limestone | High in upper Gordon Limestone |
| Dolomite | Moderate to High |
| Lump silica | High |
| Silica flour | High |
| Construction materials | Locally high |

The confidence level would be improved by better geochemical coverage.

(d) Future mineral resource potential

(1) For identified mineral resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

The confidence level would be improved by better geochemical coverage.

AREA 9. WEDGE AREA AND GORDON IMPOUNDMENT

DATA

(a) Geological maps

Brown, A.V., McClenaghan, M.P., Turner, N.J., Baillie, P.W., McClenaghan, J., Lennox, P., Williams, P.R. 1982. Tasmanian Geological Atlas 1:50 000 Series, Sheet 8112N, Huntley. Dep. Mines Tasm.

Corbett, K.D. and Brown, A.V. 1975. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-5, Queenstown. Dep. Mines Tasm.

Turner, N.J., Calver, C.R., McClenaghan, M.P., McClenaghan, J., Brown, A.V., Lennox, P.G., 1985. Tasmanian Geological Atlas 1:50 000 Series, Sheet 8112S, Pedder. Dep. Mines Tasm.

Williams, P.R., and Corbett, E.B. 1975. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-7, Port Davey. Dep. Mines Tasm.

All of Area 9 is mapped at 1:50 000. The mapping was done prior to the filling of Lake Gordon.

(b) Geological summary

Low grade metamorphic rocks of Precambrian age extend eastwards from around the Gordon Dam to Calder Reach. These rocks include quartzite derived from both quartzarenite and micaceous quartz sandstone also phyllite derived from siltstone and mudstone. Around Atkins Range there is amphibolite (tholeiitic) interbanded with the quartzite and there are small occurrences of banded ironstone (quartz/hematite) associated with the amphibolite.

Along the eastern edge of Lake Gordon there are three main rock units namely, the Ragged Basin Complex, the Island Road Formation and the Wurawina Supergroup. The Ragged Basin Complex is of unknown age. It consists of poorly sorted sandstone, khaki and red-brown mudstone, chert and tholeiitic basalt. The formation is broken and there are zones of melange with ultramafic lenses in the SE part of Area 9. Similar lithologies to those in the Ragged Basin Complex are present in the Waratah-Luina area of western Tasmania where there is also a close association with ultramafic rocks.

The Island Road Formation is a quartzose unit of conglomerate, turbiditic sandstone and siltstone of middle Cambrian age which correlates with the Dundas Group of western Tasmania. On Ragged Range and Clear Hill there are the younger Cambro-Ordovician quartzose conglomerates of the Wurawina Supergroup.

(c) Geophysical coverage

References as for Area 1.

Gravity coverage in the south-eastern part of Area 9 is regional whilst elsewhere in the area it is of reconnaissance standard or poorer.

Aeromagnetic coverage is regional.

(d) Mineralisation

Reference: Dep. Mines Tasm. MIRLOCH data base.

73045 426 700 m E 5 270 000 m N (Holley Road). Small banded iron formations.

73035 442 300 m E 5 269 800 m N (Adam River Falls). Gold in hard rock - style unknown.

Unlisted 440 500 m E 5 261 700 m N (approx.). Gold in hard rock - style unknown.

Peripheral occurrences

73047 445 600 m E 5 269 600 m N (Adamsfield). Osmiridium, chromium, asbestos, nickel and gold in ultramafic rocks, Cambro-Ordovician palaeoplacers, Cainozoic placers. White clay in alluvium.

73039-42 Various (Boyes Basin). Osmiridium in Cainozoic placers.

(e) Previous Mineral Exploration

EL 1/59, (Lyell -EZ), EL 13/65 (BHP)

These were large exploration licences which included the area of interest. Work in both cases was focussed on the nearby ultramafic rocks extending south from Adamsfield and in the Boyes River. In the area of interest limited rock chip sampling for base metals and phosphate was carried out. A reconnaissance geochemical survey showing anomalous Ni, Zn and Cu was carried out in the upper Boyd River.

Reference: Anon, 1972. Rock, soil sampling and magnetics, miscellaneous areas, EL 13/65. Broken Hill Pty Co. Ltd. Dep. Mines Tasm. TCR 72-926.

Mclntyre, M. and Bumstead, E.D., 1969. S.W. Tasmania EL 13/65. Gordon Road geochemical stream reconnaissance survey (1967-1968). BHP Exploration Dept., Report No. 793. Dep. Mines Tasm. TCR 69-555.

EL 8/79

Part of the area of interest was included in the original application for EL 8/79 but was not within the area that was finally granted.

EL 40/80

This EL was pending in the period 1980-83 but was not taken up.

EL 19/83

The eastern part of the area of interest was within this exploration licence but no work was carried out on it.

EL 20/86; EL 83/87

No reports were received by the Dept. of Mines on work in these licence.

EL 23/85

The north eastern part of the area of interest was within this licence but exploration work was just outside the area, on the lower slopes of Stepped Hills. The work involved a preliminary stream sediment (panned concentrates) survey, primarily for platinoids, gold and chromite derived from ultramafic rocks in the Boyes River.

Reference: Killigrew, L.P. 1987. Results of stream sediment sampling programme at Boyes Basin EL 23/85. Callina N.L. Dep. Mines Tasm. TCR 87-2691.

EL 4/85

This exploration licence is current and work has focussed on the ultramafic rocks extending south from Adamsfield. The eastern edge of the area of interest is in the licence but has not been worked in.

ASSESSMENT

(a) Quality of data

Geological mapping in the area of interest is at the satisfactory regional scale of 1:50 000. However, outcrop in parts of the area is poor, particularly in the area now occupied by the large, eastern segment of Lake Gordon where there is considerable uncertainty about the overall composition of some geological units and about the relationships between many of the older geological units.

Gravity station coverage in the south eastern part of the area is adequate for the precise determination of structures of shallow to moderate depth. Elsewhere it is not.

There is limited geochemical coverage in the south eastern part of the area.

(b) Preliminary listing of possible resource models

Metallic resources

Reference as for Area 2.

Note: The south-eastern part of the area overlies an inferred granite spine (Fig. 5) and, contains lenses of sheared ultramafic rocks (Fig. 6) in mèlange in the upper Boyd River.

| | |
|---|---|
| 8a, c, d, 9 | Chromite, Co-Ni, asbestos, PGE associated with ultramafic rocks. |
| 14c | Carbonate replacement Sn in limestone, dolomite. |
| 15a, b | Sn-W veins. |
| 24a, b, c | Massive sulphide, manganese associated with tholeiitic basalts, amphibolite. |
| 31a, 32b, c | Pb-Zn, Zn, Cu-Pb-Zn in carbonate rocks. |
| 36a | Low sulphide Au in shear zones. |
| 39a, b | Placer, palaeoplacer PGE, Au. |
| Savage River Fe | Associated with Atkins Range amphibolite. |

Non-metallic resources

Silica in Precambrian quartzarenite, Wings Sandstone.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). Categories 4, 8 and unknown. See Appendix 2.

(2) This work:

Metallic resources

| | |
|---|---|
| 8a, c, 9 | Moderate 8d Low |
| 14c | Low to moderate in south east |

| | |
|---|---|
| 15a, b | Low to moderate in south east |
| 24a, b, c | Moderate |
| 31a, 32b, c | Low |
| 36a | Moderate to high |
| 39a, b | High |
| Savage River Fe | Low |

Non-metallic resources

| | |
|---|---|
| Silica | Low for Precambrian quartzarenite (flooded) |
| Construction materials | Locally high |

The confidence level would be improved by better geochemical coverage, particularly in the south eastern part of the area.

(d) Future mineral resource potential

(1) For identified mineral resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

The confidence level would be improved by better geochemical coverage, particularly in the south eastern part of the area.

## AREA 10. STYX RIVER CATCHMENT WITHIN NATIONAL ESTATE

(a) Geological Maps

Farmer, N. 1975. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-8, Hobart. Dep. Mines Tasm.

Geophoto Resources Consultants, 1966. Geological map of SE Tasmania. Dep. Mines Tasm. TCR 67-466.

Hall, W.D.M., Caudackova, H., Corbett, E.B. Geological map of SW Tasmania. BHP Exploration Department, Project No. TSW 46 (EL13/65).

Geological mapping in the area of interest is of a reconnaissance standard and appears to be mainly air photo interpretation.

(b) Geological summary

The area is thought to be almost entirely underlain by the lower Parmeener Supergroup. A very small part in the south is thought to be underlain by the upper Parmeener Supergroup.

(c) Geophysical coverage

References as for Area 1.

There are no gravity stations within the area of interest but it is small in size and the surrounding stations provide a reconnaissance coverage.

Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous mineral exploration

EL 1/59 (Lyell - EZ), EL 13/65 (BHP)
The area was mapped (? by air photo interpretation only) during the tenure of these licences and the aeromagnetics were produced. No ground work appears to have been done.

EL 37/79
In this exploration licence the presence of oil shale and fracture-controlled oil accumulations in the lower Parmeener Supergroup was investigated. Reconnaissance mapping led to diamond drilling at two sites within a few kilometres of the northern boundary of the area of interest. Thin bands of low yielding oil shale were found in the Woody Island Siltstone. No further work was undertaken.

Reference: Anon., 1982. Exploration licence 37/79, Styx River, Tasmania. BHP Exploration Department. Dep Mines Tasm. TCR 82-1866.

EL 1/88
Details of this current, large exploration licence for petroleum are given in the appendix.

ASSESSMENT

(a) Quality of data

Geological mapping in the area of interest is not of a satisfactory standard on which to base reliable assessments.

Gravity station coverage is not sufficient for the precise determination of subsurface structures of shallow to moderate depth.

There is no systematic geochemical coverage.

(b) Preliminary listing of possible resource models

Metallic resources

No models at this time.

Non-metallic resources

Oil shale in lower Parmeener Supergroup.
Construction materials

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). Category 2 in Appendix 1.

(2) This work:

| | |
|---|---|
| Oil shale | Low |
| Construction materials | Locally high |

Confidence level would be improved by more accurate geological mapping.

(d) Future mineral resource potential

(1) For identified mineral resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level would be improved by more accurate geological mapping.

AREA 11. DENISON AND RUSSELL CATCHMENTS
HUON RIVER CATCHMENT
PICTON RIVER CATCHMENT

(a) Geological Maps

Hobart 27, 11

Banks, M.R. Geological map of part of the Picton River, University of Tasmania.

Farmer, N. 1975. Geological Atlas of Tasmania 1:250 000 Series, Sheet SK55-8, Hobart. Dep. Mines Tasm.

Ford, R.J. 1955, in Ford, R.J. 1956. The geology of the upper Huon-Arve River area. Pap.Proc.R.Soc.Tasm. 90.

Geophoto Resources Consultants, 1966. Geological map of SE Tasmania. Dep. Mines Tasm. TCR 67-466.

Hall, W.D.M., Caudackova, H., Corbett, E.B. Geological map of SW Tasmania. BHP Project No. T.S.W. 46 (EL 13/65).

Geological mapping in the area of interest is of a reconnaissance standard and is largely air photo interpretation.

(b) Geological summary

Dolomite of probably Precambrian age outcrops around Blakes Opening in the central western part of the area of interest. Undifferentiated Precambrian rocks are present south of Mt Picton and in a small inlier at Glovers Bluff. Ultramafic rocks of possibly Cambrian age are also present at Glovers Bluff. There is a small inlier of Ordovician limestone in the Picton River valley but the remainder of the area is thought to be underlain by lower and upper Parmeener Supergroup capped by Jurassic dolerite at Mt Weld, Mt Frederick and Snowy Range.

(c) Geophysical coverage

References as for Area 1.

Gravity station coverage is regional in about 10% of the area of interest, specifically, in the lower Picton River-Huon River part. Coverage of the remainder of the area is at reconnaissance level.

Aeromagnetic coverage is regional.

(d) Mineralisation

Reference: Dep. Mines Tasm. MIRLOCH data base.

87001 478 160 m E 5 234 440 m N. Gold possibly in Precambrian rocks.

87002 478 250 m E 5 234 490 m N. Nickel in ultramafic rocks.

87003 478 130 m E 5 233 660 m N. Osmiridium, possibly in alluvium.

87004 478 010 m E 5 234 080 m N. Osmiridium, possibly in alluvium.

87005 478 490 m E 5 233 860 m N. Osmiridium, possibly in alluvium.

87007 477 500 m E 5 235 000 m N. Lump silica, Precambrian quartzite.

87008 478 200 m E 5 235 100 m N. Silica, hard rock and eluvial.

(e) Previous Mineral Exploration

SPL 122
Exploration under this special prospecting licence was for silica at Glovers Bluff. A significant resource was established.

Reference: Anon. 1975. Final report, Glovers Bluff quartzite, SPL 122 - Consolidated Gold Fields Aust. Dep. Mines Tasm. TCR 82-1669.

EL 35/79

The Glovers Bluff silica deposit was further investigated under this licence with drilling quantitatively defining the resource.

Reference: Hassel, D.J. 1981. Report on exploration licence 35/79 for the six months ended 14th Dec. Tas. Electro Metallurgical Co. Dep. Mines Tasm. TCR 82-1669.

EL 11/84

This licence is in the region near Glovers Bluff and remains current. Work is ongoing and results are confidential.

ELs 5/80, 6/80, 28/82

No reports were received by the Dept. of Mines.

El 37/79

Some reconnaissance mapping appears to have been done in the area of interest under this licence but work was concentrated to the north, near the Styx River.

ASSESSMENT

(a) Quality of data

Geological mapping in the area of interest is not of a satisfactory standard on which to base reliable assessments.

Gravity station coverage in most of the area (about 90%) is inadequate for the precise determination of subsurface structures of shallow to moderate depth.

There are no systematic geochemical data available.

(b) Preliminary listing of possible resource models

Metallic resources

Reference as for Area 2.

| | |
|---|---|
| 8a, c, d, 9 | Chromite, Co-Ni, asbestos, PGE associated with ultramafic rocks. |
| 31a, 32b, c | Pb-Zn, Zn, Cu-Pb-Zn in carbonate rocks. |
| 36a | Low sulphide Au in shear zones. |
| 39a, b | Placer, palaeoplacer PGE, Au. |

Non-metallic resources

Coal in Parmeener Supergroup.
Oil shale in Parmeener Supergroup.
Dolomite in Precambrian dolomite.
Limestone in Ordovician limestone.
Silica in Precambrian quartzarenite, secondary rocks.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1989). Categories 2, 5, 8, 7, 11 and unknown in Appendix 1.

(2) This work:

Metallic resources

Note: the potential for metallic minerals is mostly confined to rocks older than the Parmeener Supergroup and to Cainozoic placers.

| | |
|---|---|
| 8a | Moderate 8c unknown 8d, 9 moderate |
| 31a, 32b, c | Moderate |
| 36a | Moderate |
| 39a, b | High |

Non-metallic resources

| | |
|---|---|
| Coal | Low |
| Oil shale | Low |
| Dolomite | Moderate |
| Limestone | Moderate |
| Silica | High |
| Construction materials | Locally high |

Confidence level would be substantially improved by more accurate geological mapping and more geochemical data.

(d) Future mineral resource potential

(1) For the identified mineral resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations and diopside in metamorphosed dolomite - unknown.

Confidence level would be substantially improved by more accurate geological mapping and more geochemical data.

AREA 12. UPPER ESPERANCE RIVER, LUNE RIVER CATCHMENTS

DATA

(a) Geological Maps

Farmer, N. 1975. Tasmanian Geological Atlas 1:250 000 Series, Sheet SK55-8, Hobart. Dep. Mines Tasm.

Geophoto Resources Consultants, 1966. Geological map of SE Tasmania. Dep. Mines Tasm. TCR 67-466.

Geological mapping in the area of interest is of reconnaissance level and has been mainly by air photo interpretation.

(b) Geological Summary

The area is mostly underlain by lower and upper Parmeener Supergroup. There is a little Jurassic dolerite, mainly near the southern end, and small areas of pre-Parmeener orthoquartzite and carbonate.

(c) Geophysical coverage

References as for Area 1 plus the following:

Bureau of Mineral Resources, 1985. Regional airborne magnetic survey, Tasmania. Compiled in Map 4 of Burret, C.F. and Martin, E.L. (Eds) 1989. Geology and Mineral Resources of Tasmania. Geol. Soc. Aust. Sp. Publ. 15.

There are very few gravity stations within the area of interest but the narrowness of the area enables reconnaissance coverage by interpolation of stations to the east and west.

Aeromagnetic data is from the two sources referenced, both are regional.

(d) Mineralisation

Reference: Dep. Mines Tasm. MIRLOCH data base.

87013 487 500 m E 5 195 600 m N (Hogsback extension). Lump silica in orthoquartzite.

93008 487 200 m E 5 200 500 m N (Adamsons Peak). Coal in Cygnet Coal Measures (late Permian).

87009 488 600 m E 5 191 200 m N (South Lune Rd - on boundary of area of interest). Lump silica in Ordovician orthoquartzite and unspecified secondary deposits.

Peripheral mineralisation

93004 490 900 m E 51196 000 m N (Hastings). Coal in upper Parmeener Supergroup (late Triassic).

93005 492 000 m E 5 188 400 m N (Ida Bay). Coal in upper Parmeener Supergroup (late Triassic).

93007 492 000 m E 5 191 000 m N (Lune River) Coal in upper Parmeener Supergroup (late Triassic).

87012 488 800 m e 5 1887 200 m N (Benders Quarry). Limestone in Ordovician rocks.

87010 489 300 m E 5 193 900 m N (several localities on Hastings Caves Road). Lump silica, silica flour.

87014 487 900 m E 5 193 200 m N (North Lune Road - mineral lease). Lump silica in orthoquartzite.

Unlisted Hogsback (mineral lease). Lump silica in orthoquartzite.

(e) Previous mineral exploration

SPL 137

The purpose of this special prospecting licence held by Louisa Mining Corp. was to explore for limestone suited to use in BOS steel making. Limestone outcropping about 2 Km WNW of Hasting Caves and within the area of interest was chip sampled. It did not reach chemical specifications.

Reference: Forster, M.C. 1978. Final report SPL 137. Louisa Mining Corp. N.L. Dep. Mines Tasm. TCR 78-1298.

EL 7/86

Conga Oil Pty Ltd prospected this licence for coal in the upper Parmeener Supergroup (upper Triassic). No work was done within the area of interest.

EL 40/83

Exploration by Marathon Petroleum Aust. Ltd in this licence was aimed at coal in the upper Parmeener Supergroup (upper Triassic). An aeromagnetic survey and a Landsat study were carried out. There appears to have been little, if any, ground work in the area of interest.

Reference: O'Neill, D. 1984. First annual report, Exploration Licence 40/83 (Strathblane), for the period ending 21.9.84. Marathon Petroleum Australia Ltd. Report No. 1984/31. Dep. Mines Tasm. TCR 84-2200.

EL 1/88

This current exploration licence for petroleum is described in Appendix 2.

ASSESSMENT

(a) Quality of Data

The standard of geological mapping in the area of interest is not adequate for reliable resource assessment.

Gravity station coverage is not sufficient for the precise determination of subsurface structures of shallow to moderate depth.

There is no systematic geochemical coverage.

(b) Preliminary listing of possible resource models

Metallic resources

Reference as for Area 2.

31a, 32b, c        Pb-Zn, Zn, Cu-Pb-Zn in carbonate rocks.

Non-metallic resources

Limestone in Ordovician rocks.
Dolomite in Precambrian rocks.
Silica in orthoquartzite and unspecified secondary deposits.
Coal in the Parmeener Supergroup.
Oil shale in the Parmeener Supergroup.
Construction materials.

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). Categories 5, 7, 2 and 11 in Appendix 1.

(2) This work:

Metallic resources

| | |
|---|---|
| 31a, 32b, c | Moderate |

Non-metallic resources

| | |
|---|---|
| Limestone | Moderate |
| Dolomite | Moderate |
| Silica | High |
| Coal | Low |
| Oil Shale | Low |
| Construction materials | Locally high |

Confidence level would be substantially improved by more accurate geological mapping.

(d) Future mineral resource potential

(1) For the identified mineral resource models - as above pending more work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level would be substantially improved by more accurate geological mapping.

## AREA 13. CATAMARAN RIVER

### DATA

(a) Geological Maps

Banks, M.R. Geological map of the area around Mt. La Perouse. University of Tasmania unpubl.

Farmer, N. 1975. Geological Atlas of Tasmania 1:250 000 Series, Sheet SK55-8, Hobart, Dep. Mines Tasm.

Geophoto Resources Consultants, 1966. Geological map of SE Tasmania. Dep. Mines Tasm. TCR 67-466.

Geological maps of the area of interest are of reconnaissance standard and are largely air photo interpretation.

(b) Geological summary

The area is thought to be underlain by the lower Parmeener Supergroup and by Quaternary deposits.

(c) Geophysical coverage

References: Gravity as for Area 1.

Bureau of Mineral Resources, 1985. Regional airborne magnetic survey, Tasmania. Compiled in Map 4 of Burrett, C.F. and Martin, E.L. (Eds) 1989. Geology and Mineral Resources of Tasmania. Geol. Soc. Aust. Sp. Publ. 15.

Gravity coverage is reconnaissance. Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

(e) Previous mineral exploration

EL 6/79

In this licence Marathon Petroleum Australia Ltd carried out a relatively intensive exploration programme for coal in the upper Parmeener Supergroup (upper Triassic). The programme involved photogeology, aeromagnetic surveying, gravity surveying and drilling and was focussed on the Ida Bay-Catamaran Coalfield. The work indicated that rocks west of the Lune River Fault, which includes rocks in the area of interest, are unprospective for upper Triassic coal.

Reference: Anon, 1985. Summary of Tasmania Basin coal tenements available for joint venture. Marathon Petroleum Australia, Ltd. Dep. Mines Tasm. TCR 85-2312.

EL 1/88

This current exploration licence for petroleum is described in Appendix 2.

ASSESSMENT

(a) Quality of data

Geological maps of the area of interest are largely air photo interpretation and are not an adequate basis for resource assessment.

Gravity station coverage is not adequate for the precise determination of subsurface structures of shallow to moderate depth.

There is no systematic geochemical coverage.

(b) Preliminary listing of possible resource models

Metallic resources

No models at this time.

Non-metallic resources

Coal in Cygnet Coal Measures
Oil shale in lower Parmeener Supergroup
Construction materials

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). Category 2 in Appendix 1.

(2) This work:

| | |
|---|---|
| Coal | Low |
| Oil shale | Low |
| Construction materials | Low to moderate |

Confidence level would be improved by more accurate geological mapping.

(d) Future mineral resource potential

(1) For the identified resource models - as above pending further work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

Confidence level would be improved by more accurate geological mapping.

AREA 14. SOUTH EAST CAPE (MOULDERS HILL AREA)

DATE

(a) Geological Maps

Banks, M.R. Geological map of the South Cape area. University of Tasmania unpubl.

Farmer, N. 1975. Geological Atlas of Tasmania 1:250 000 Series, Sheet SK55-8, Hobart, Dep. Mines Tasm.

Geophoto Resources Consultants, 1966. Geological map of SE Tasmania. Dep. Mines Tasm. TCR 67-466.

Geological maps of the area of interest are of reconnaissance standard and are partly air photo interpretation.

(b) Geological summary

The area of interest is underlain by upper Parmeener Supergroup and Jurassic dolerite.

(c) Geophysical coverage

References as for Area 12.

Gravity station coverage is reconnaissance.
Aeromagnetic coverage is regional.

(d) Mineralisation

No known occurrences of metallic minerals or coal.

Peripheral occurrences

Reference: Dep. Mines Tasm. MIRLOCH data base.

| | | |
|---|---|---|
| 97004 | 488 200 m E 5 178 200 m N | Catamaran Coalfield. Coal in upper Triassic. |
| 97002 | 485 000 m E 5 173 000 m N | South Cape Bay. Coal in upper Triassic. |
| 97006 | 469 200 m E 5 176 500 m N | Rocky Plains Bay. Lignite. |

(e) Previous mineral exploration

EL 6/79

Following a relatively intensive exploration programme in this licence Marathon Petroleum Australia, Ltd. outlined small inferred reserves of coal at the old mines at Ida Bay and Catamaran. Both of these old mines are outside the area of interest but there may be subsurface extensions of the coal-bearing strata into the area.

Reference: Anon., 1985. Summary of Tasmania Basin coal tenements available for joint venture. Marathon Petroleum Australia, Ltd. Dep. Mines Tasm. TCR 85-2312.

EL 1/88

This current exploration licence for petroleum is described in Appendix 2.

ASSESSMENT

(a) Quality of data

Geological maps of the area are not of an adequate standard for confident mineral resource assessment.

Gravity station coverage is not adequate for the precise determination of subsurface structures of shallow to moderate depth.

There is no geochemical coverage.

(b) Preliminary listing of potential resource models

Metallic resources

No models at this time.

Non-metallic resources

Coal in upper Parmeener Supergroup
Dimension stone in Jurassic dolerite
Construction materials

(c) Current mineral resource potential (prospectivity)

(1) Higgins et al. (1988). Categories 2 and 11 in Appendix 1.

(2) This work:

| | |
|---|---|
| Coal | Low to moderate |
| Dimension stone | Unknown |
| Construction materials | Low to moderate |

More accurate geological mapping would improve the confidence level.

(d) Future mineral resource potential

(1) For the identified resource models - as above pending further work.

(2) For possible new resource types including petroleum in subsurface formations - unknown.

More accurate geological mapping would improve the confidence level.

# APPENDIX 1

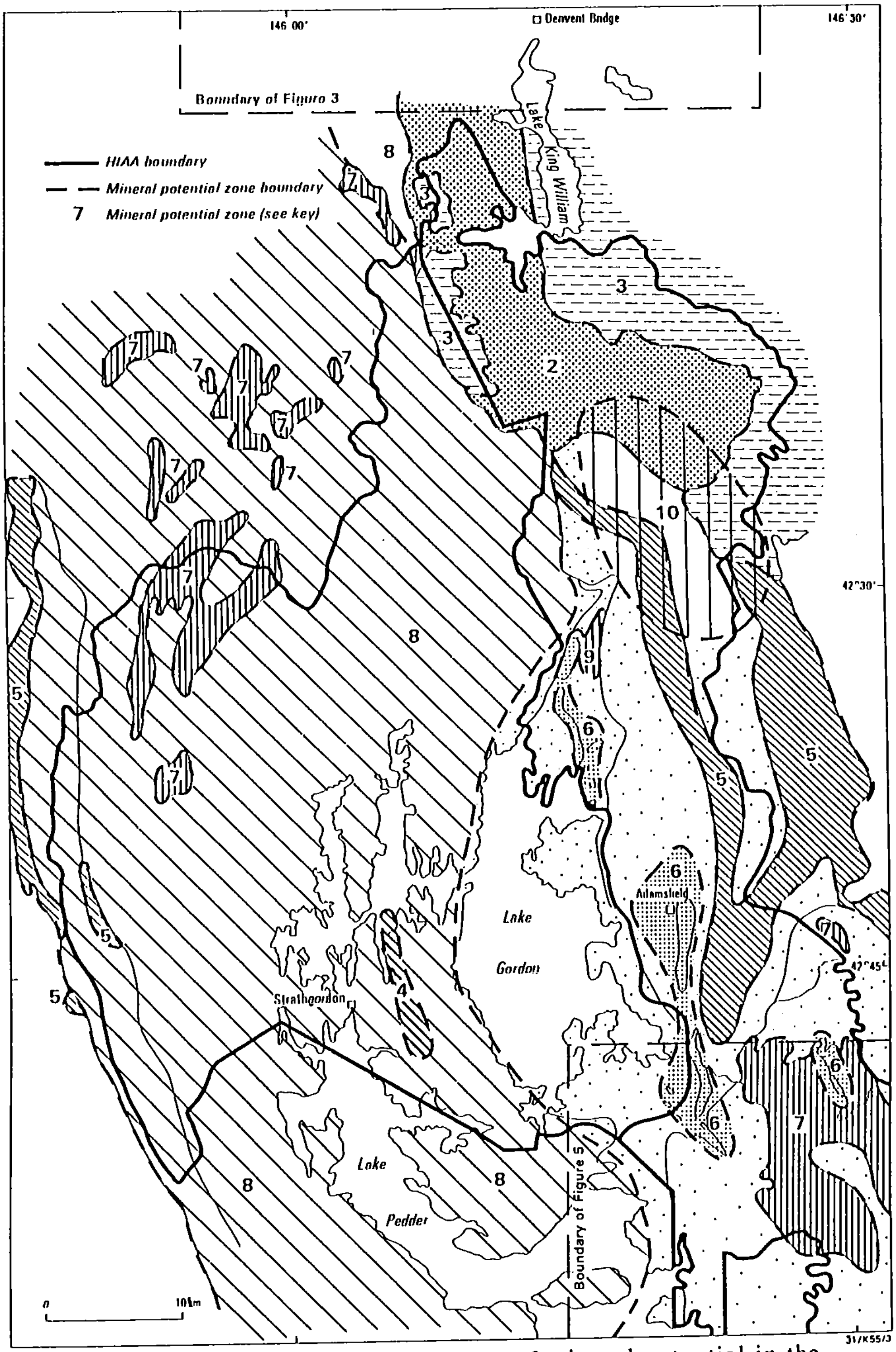
Mineral resource potential maps of the Southern Forests and the Hole in the Doughnut. Bureau of Mineral Resources.

From: Higgins, N.C., McNaught, I.S., Miezities, Y. and Solomon,, M. 1988. An assessment of the mineral potential of the Helsham Inquiry area and the adjoining areas containing the 'Hole in the Doughnut' area, Central Plateau Conservation Area and Walls of Jerusalem National Park. BMR Record 1988/52.

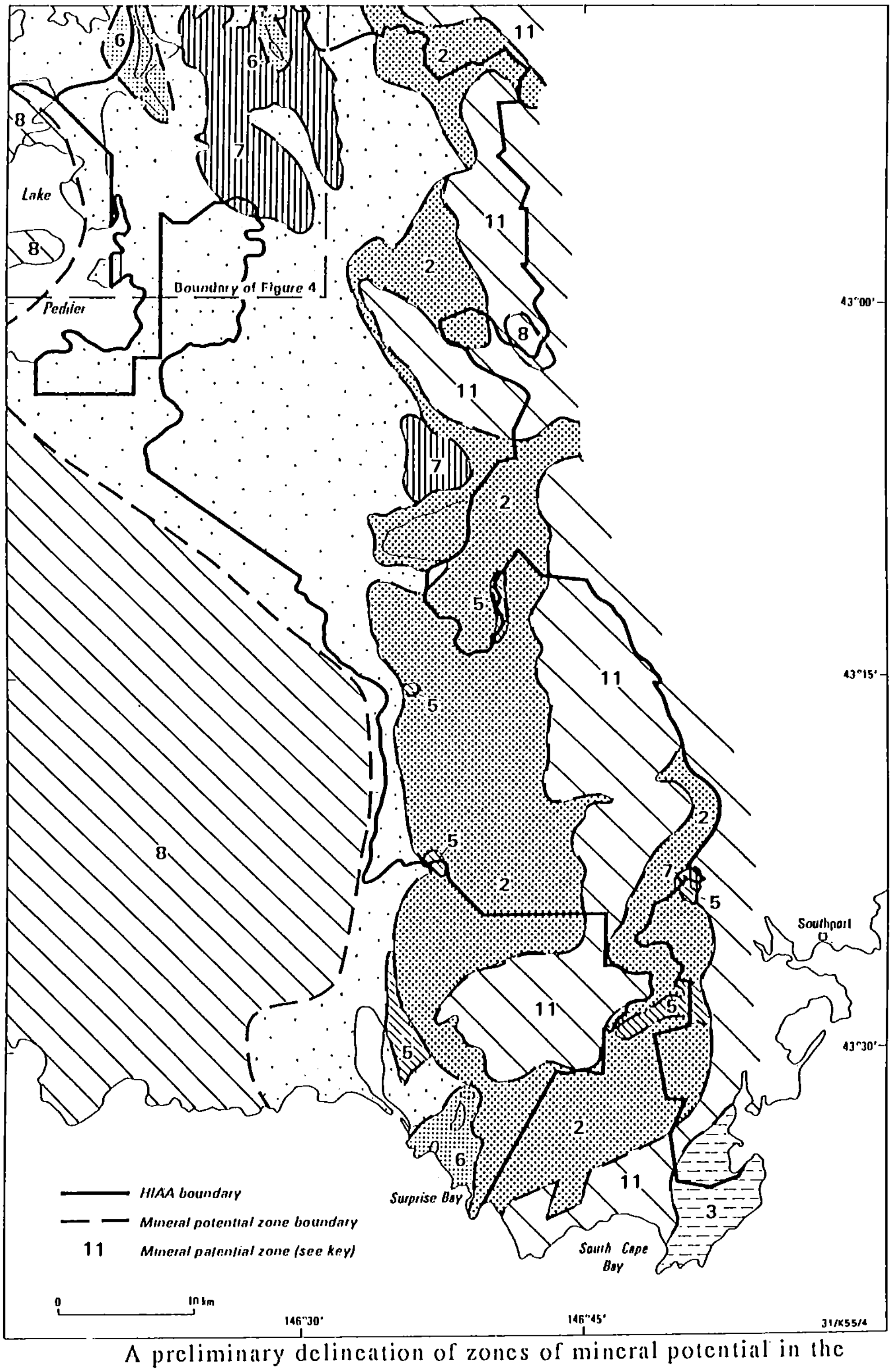
## KEY TO THE MINERAL RESOURCE POTENTIAL MAPS
(*Figures* 3, 4 *and* 5)

| *Zono* | |
|---|---|
| 1 | *High potential for small tin–tungsten veins and base metal deposits in Precambrian rocks* |
| 2 | *Very low potential for commercial coal and oil shale deposits (Carboniferous–Triassic rock sequence)* |
| 3 | *Dolerite having very low potential for metallic and energy resources* |
| 4 | *Low to moderate potential for volcanic-hosted copper–lead–zinc deposits and low to moderate potential for Savage River style iron ore (magnetite) (Holley Road)* |
| 5 | *Ordovician limestone having moderate potential for lead–zinc deposits and a moderate to high potential for commercial limestone deposits* |
| 6 | *High potential for small alluvial and eluvial platinoid deposits (and associated chromite and gold) derived from ultramafic complexes* |
| 7 | *Moderate to high potential for commercial deposits of dolomite (Precambrian–Cambrian)* |
| 8 | *Moderate to high potential for commercial deposits of silica (Precambrian and Ordovician)* |
| 9 | *Low potential for copper–lead–zinc deposits* |
| 10 | *Moderate potential for Renison-style tin deposits replacing carbonate* |
| 11 | *Dominantly Triassic sediments with low potential for economic coal resources* |
| | *No known potential* |

Noto: *The minoral potential for low unit value commodities such as limestone, dolomite and silica is enhanced in zones which are close to or more accessible from industrial centres*




A preliminary delineation of zones of mineral potential in the Hole In The Doughnut and the northern part of Southern Forests




A preliminary delineation of zones of mineral potential in the southern part of Southern Forests

# APPENDIX 2

## Petroleum Prospectivity

Division of Mines and Mineral Resources

August 1990.

# PETROLEUM PROSPECTIVITY

## Executive Summary

The petroleum potential of the areas in question is unknown. Recent encouraging results strongly suggest that real potential may exist.

No land-use decisions which would deny access to exploration should be made before the petroleum prospectivity has been properly tested.

## Introduction

An assessment of the petroleum prospectivity of the areas in question is difficult and cannot be carried out without studying the prospectivity of Tasmania as a whole. Newnham et al. are correct in their statement that an assessment of Tasmania's petroleum potential requires consideration of the structural geology of the entire state.

Hydrocarbon exploration is carried out at different scale to mineral exploration: whereas mineral exploration is carried out over areas of tens of square kilometres looking for deposits having a surface area of tens of hectares, hydrocarbon exploration is carried out over hundreds or thousands of square kilometres looking for deposits having an area of several thousand hectares.

At least since the Second World War and until relatively recently, most workers have assessed onshore Tasmania as having a low petroleum prospectivity. It is no surprise that the only statement made by Higgins et al. (1989) about the petroleum prospectivity of the Helsham Inquiry and adjoining areas is that the potential for oil in the southeastern part of the Southern Forests is unknown. The statement is true, but further work is urgently needed.

Recent work, consisting of geological, geophysical and geophysical investigations, and largely resulting from the exploration efforts of Conga Oil Limited, suggests not only that Tasmania's petroleum potential needs careful reassessment but also that previous geological models of the state may be too simplistic.

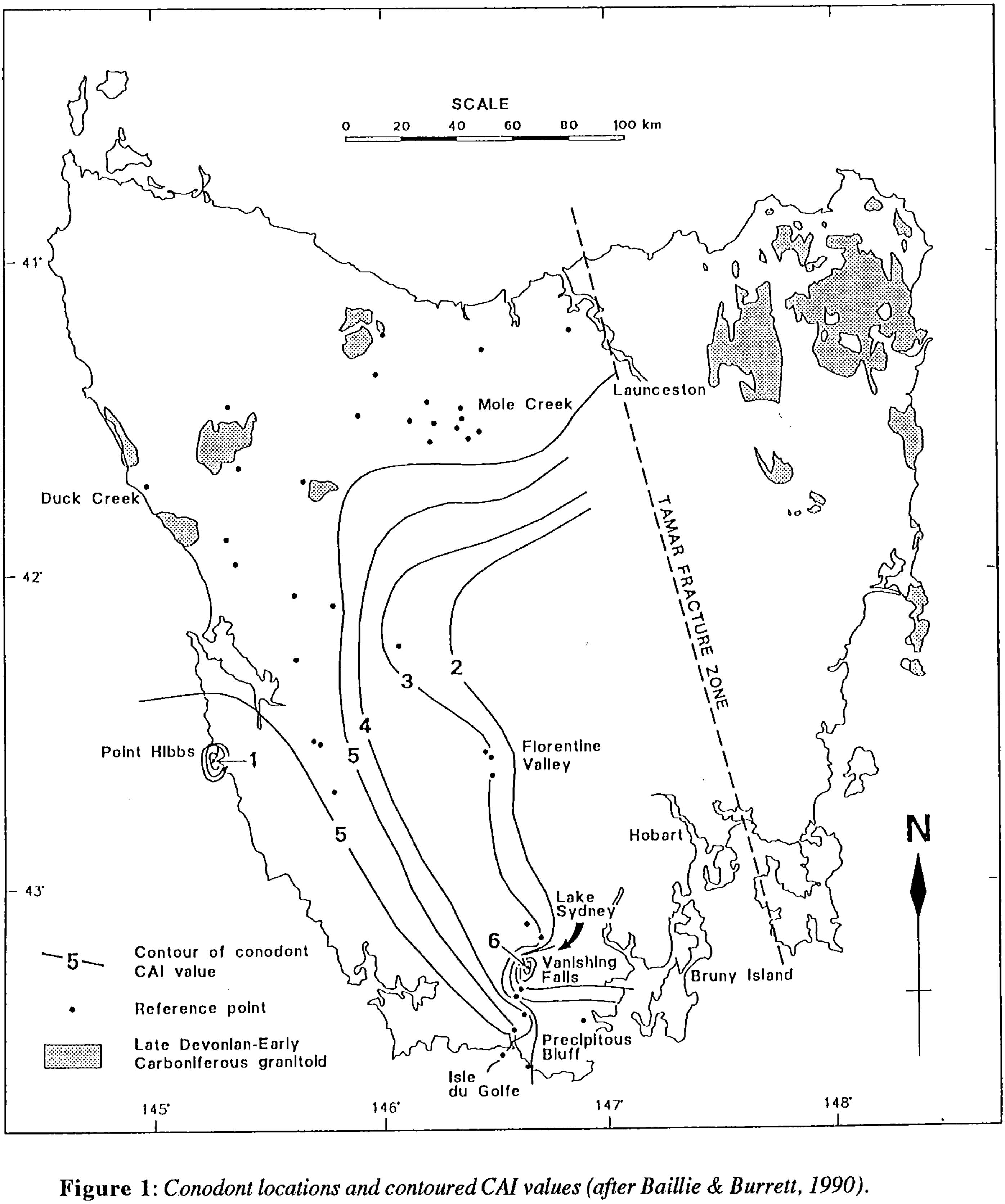



**Figure 1**: *Conodont locations and contoured CAI values (after Baillie & Burrett, 1990).*

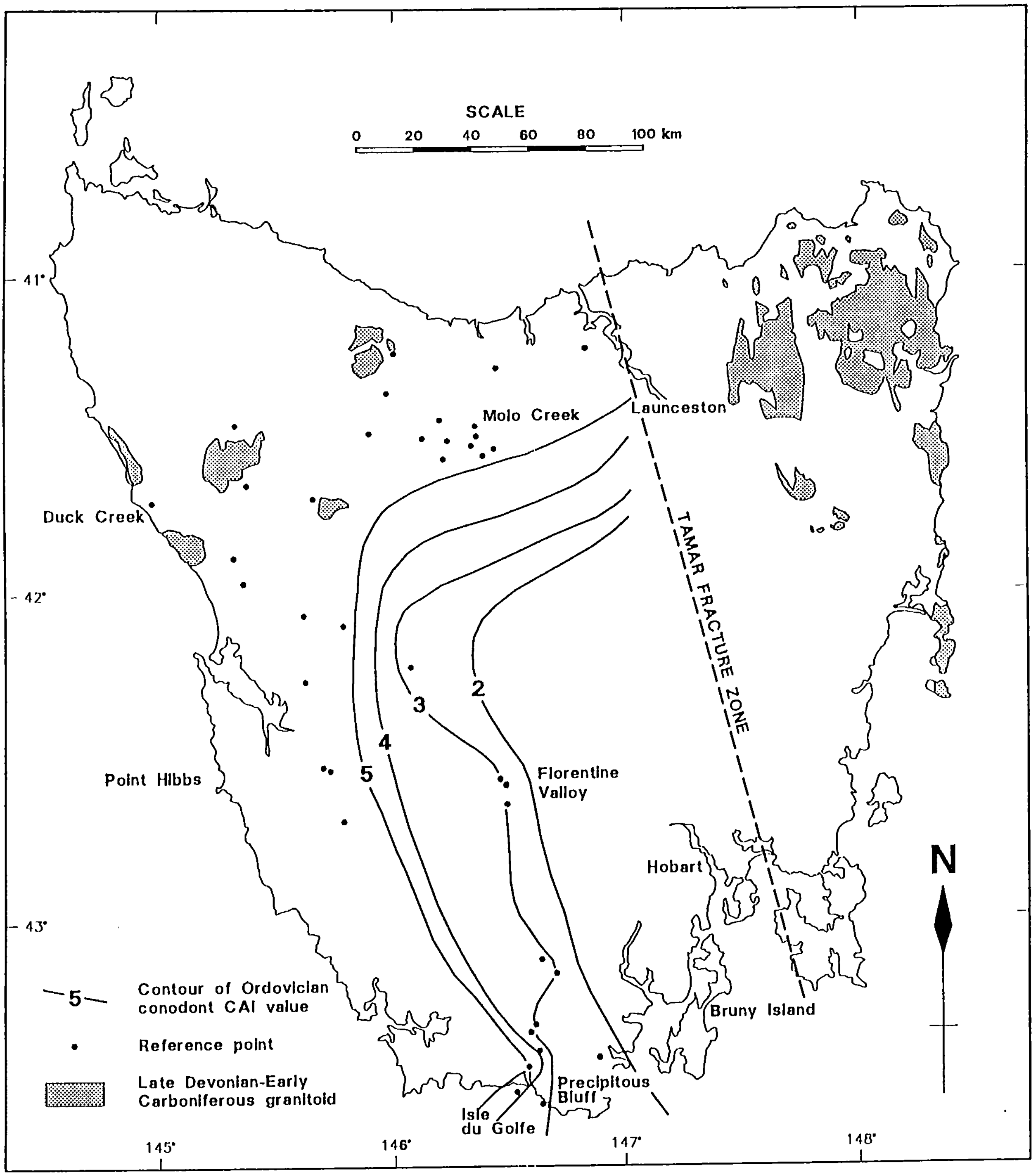



**Figure 2**: *Ordovician conodont locations and contoured CAI values.*

A 'thin skinned tectonic' model, that is, one in which younger rocks are thrust underneath older rocks, satisfactorily explains the apparent seeps. Some lines of evidence from recent work or work in progress support such a model.

Interpretation by Dr David Leaman of recently-acquired geophysical data in western and north-western Tasmania requires the presence of major thrust faults to satisfactorily explain the geophysical signatures of the region.

Ongoing work by the Prof. C. McA. Powell (University of Western Australia) in northern Tasmania indicates the presence of stacked thrust sheets between Port Sorell and Bridport.

Work by the Regional Geological Mapping Section of the Division of Mines and Mineral Resources, involving mapping and drilling on the Cape Sorell Peninsula has shown that major thrust faults occur the region and that the Precambrian rocks (traditionally regarded as 'basement' in Tasmania) have been thrust over younger rocks.

*If the 'thin skin' model is correct then the whole of Tasmania must be reassessed for both mineral and hydrocarbon potential.*

Petroleum exploration permit EL 1/88
Exploration Licence EL 1/88 occupies 20989 sq. km through the central portion of Tasmania and was granted to Conga Oil Limited in 1989 following consolidation of all that company's previous leases.

To date, the company has conducted geophysical surveys (including aeromagnetic, marine seismic and gravity), together with geochemical and geological studies.

The geochemistry indicates that Ordovician carbonates of the Gordon Group exposed around the region are both within the oil window (mature for oil generation) and a likely source for hydrocarbons detected through the region.