

# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## Victoria's critical minerals opportunities: titanium, zirconium and REEs

Shannon Brown  
A/Manager, Exploration and Development  
Resources Victoria



# Victoria, Australia: Where in the world?



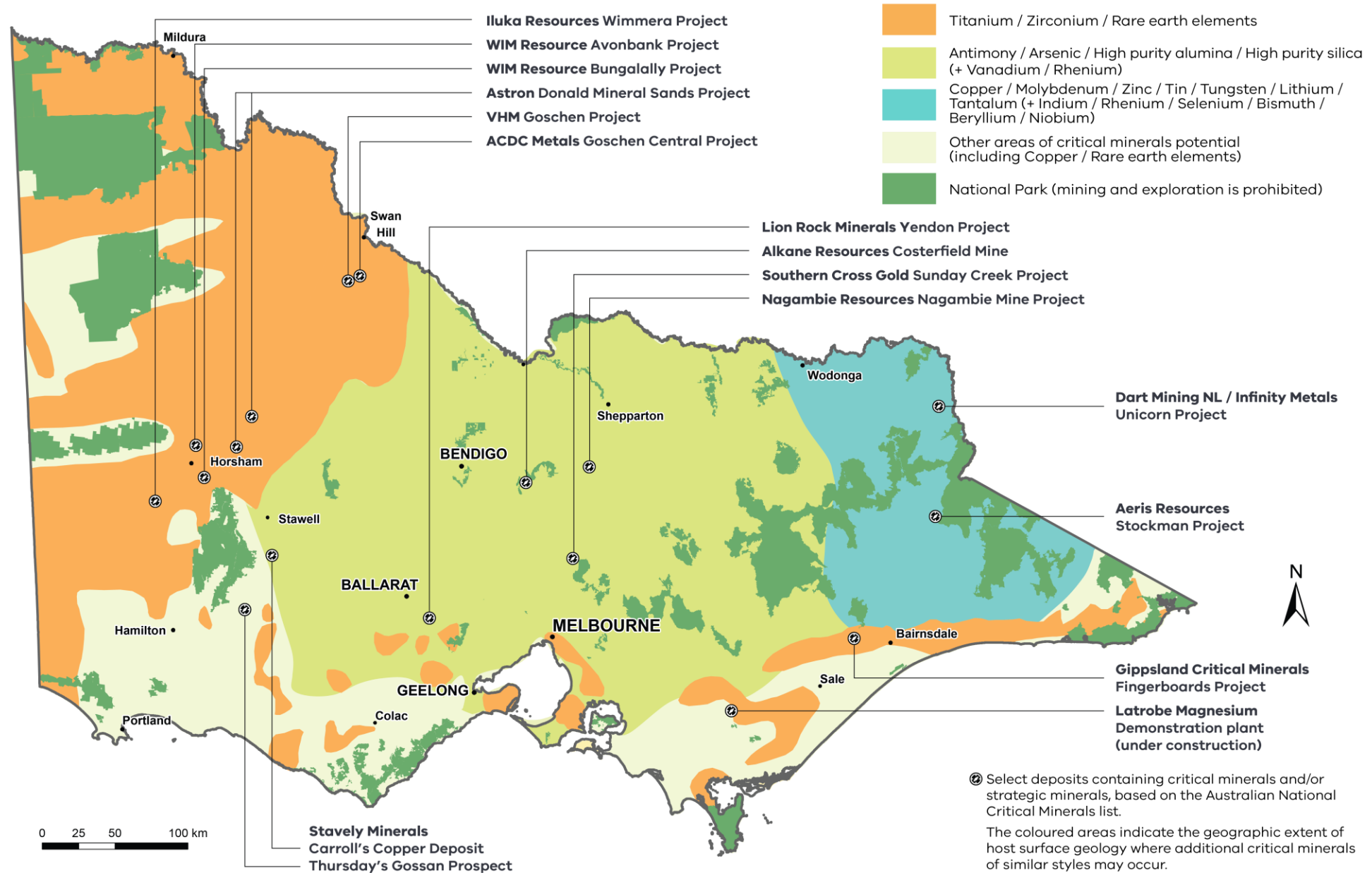
# Victoria: a world-renowned jurisdiction

**Capital:** Melbourne ([one of world's most livable cities](#))  
**Population:** 6.59 million (75% in Melbourne)

- [Highly skilled](#) residential workforce
- World class research institutions
- Thriving METS sector
- Excellent transport linkages
  - Widespread rail & road
  - [Port of Melbourne](#)
- Long gold mining history



# Currently known critical minerals and strategic materials potential



# Victorian mineral sands deposits

Northwest Victoria is home to the critical minerals required for electrification and decarbonisation.

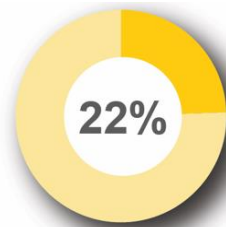
There are two different types of heavy mineral sands deposits:

- WIM style
- Strandline

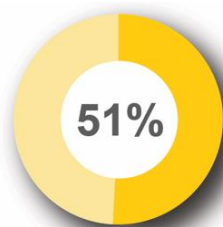
Multiple long-life deposits, billions of tonnes each

- Heavy Rare Earth Elements (e.g. dysprosium, terbium)
- Light Rare Earth Elements (e.g. neodymium, praseodymium)
- Titanium and zirconium

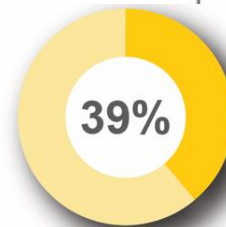
Victoria's share of Australia's mineral sands



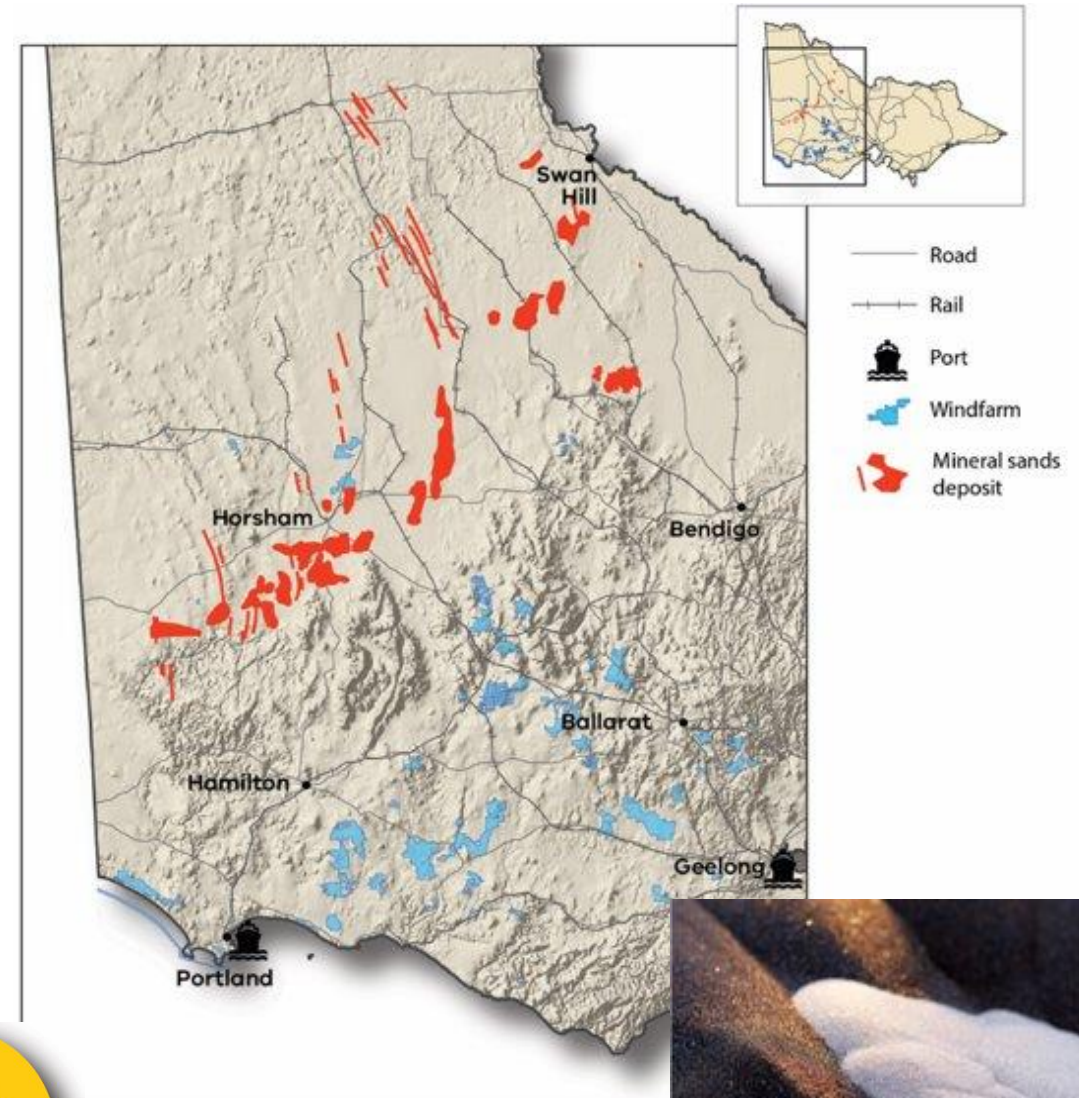
Ilmenite



Rutile



Zircon

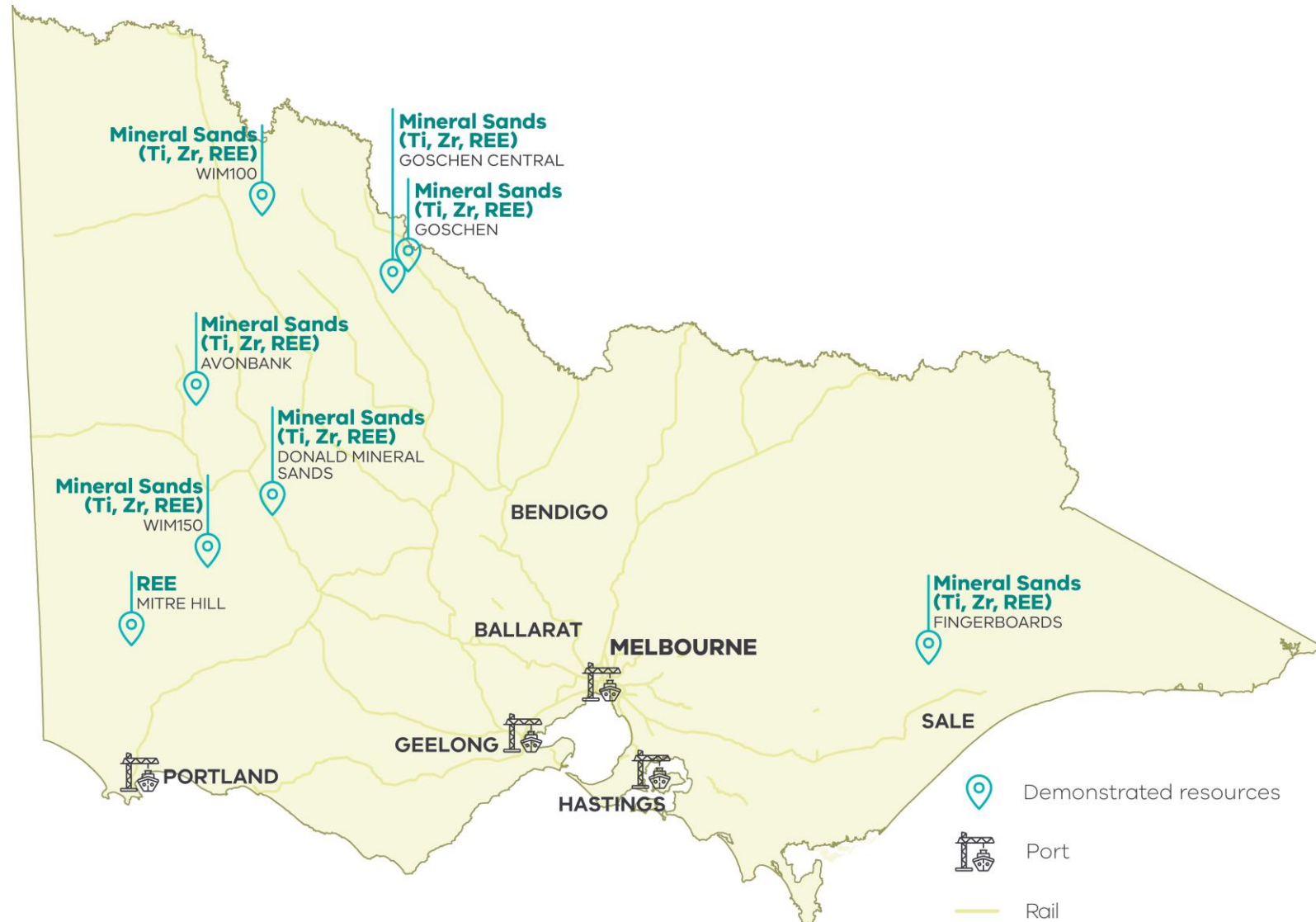


# Mineral sands projects with demonstrated resources

















Currently there are **9 mineral sands projects** ranging from **advanced exploration to development** stages with known reserves and resources in Victoria.

These projects have:

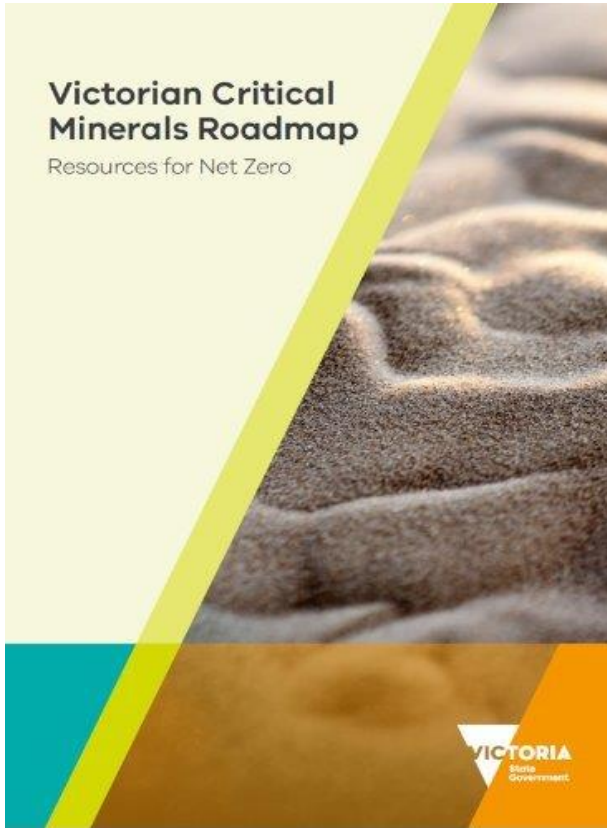
- Multi-decade mine life
- Strong upside potential
- Access to renewable energy
- Access to ports via rail
- Access to residential workforce



# Advanced minerals sand projects

Project name	Ownership	Resource	Definitive Feasibility Study	Environmental Effects Statement	Mining Licence	Work Plan (final approval)
Donald Mineral Sands	Astron Corporation	2,634 Mt @ 4.6% HM				
Goschen	VHM Limited	685 Mt @ 3.7% HM				
Avonbank	WIM Resource	311.8 Mt @ 4.3% HM			 Under assessment	
Fingerboards	Gippsland Critical Minerals	1,170 Mt @ 0.5% Zr, 1% TiO <sub>2</sub> , 0.05% TREO + Y <sub>2</sub> O <sub>3</sub>	 Underway	 Commencing 2026		
Wimmera	Iluka Resources	2,204 Mt @ 5.7% HM	 Underway	 Underway		
Goschen Central	ACDC Metals	620 Mt @ 3.7% HM	 Scoping Study completed 2025			

# The Victorian Critical Minerals Roadmap



For more information  
please visit:  
[resources.vic.gov.au/  
critical-minerals](https://resources.vic.gov.au/critical-minerals)



## Theme 1: Mapping the opportunities

Identify and promote new critical minerals opportunities using modern geoscience data and knowledge.



## Theme 2: A modern regulatory regime

Establish a Victorian Critical Minerals Coordination Office to engage industry on processes and standards and reduce approvals timelines.



## Theme 3: Critical minerals production and processing

Investigate potential economic and national supply security benefits from downstream processing facilities in Victoria.



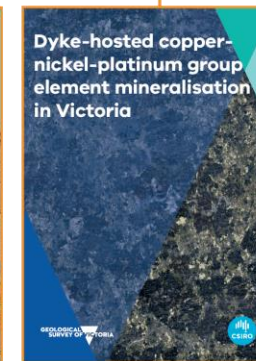
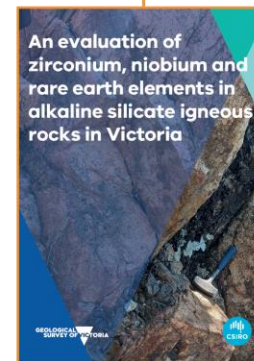
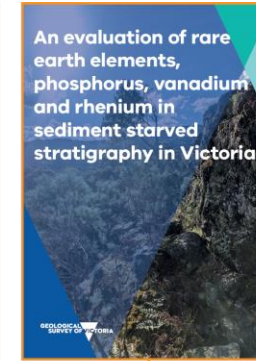
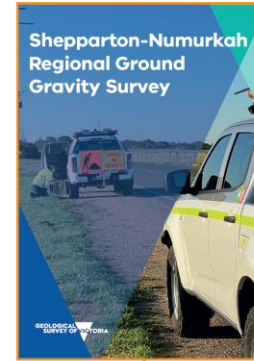
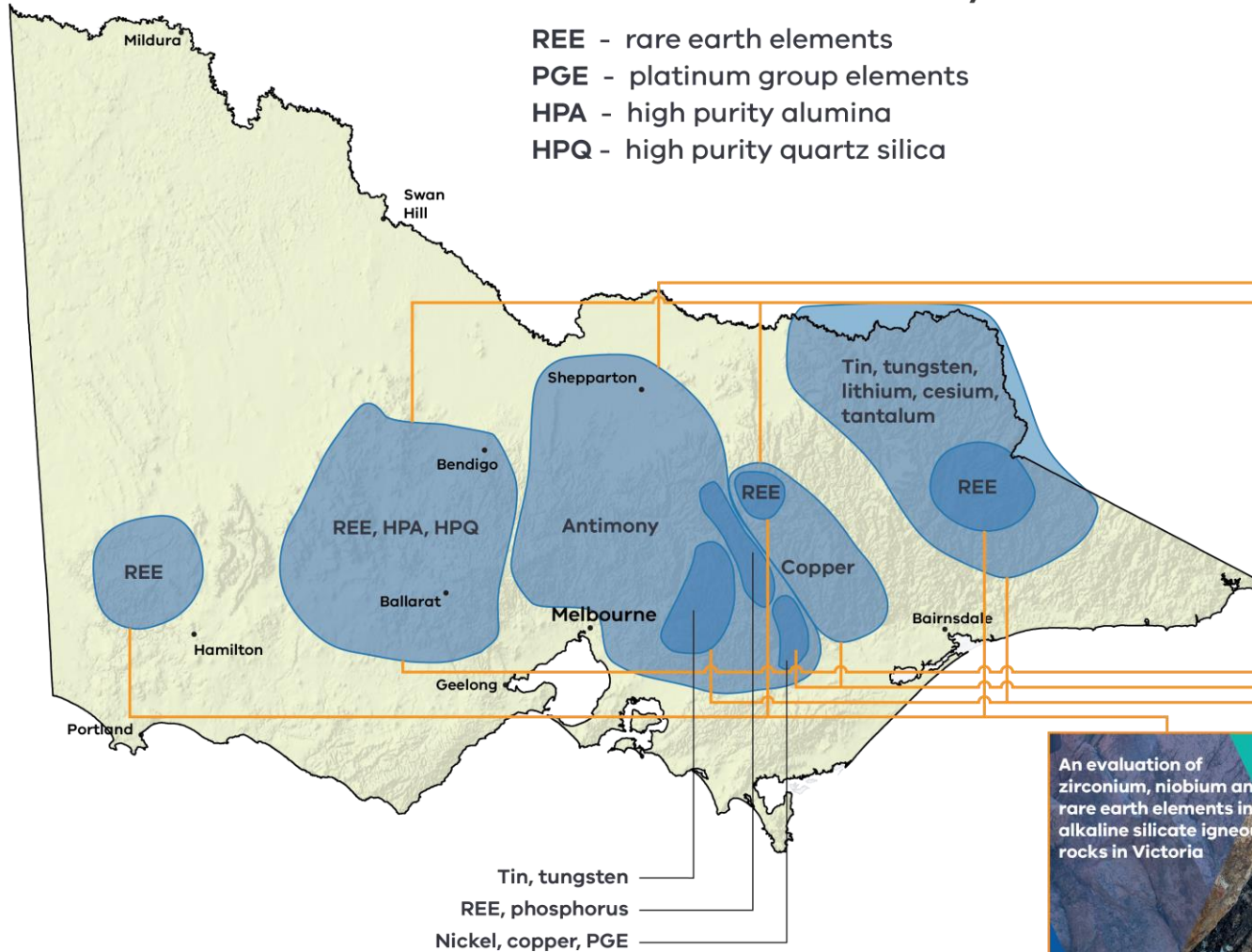
## Theme 4: Sharing the benefits of Victoria's minerals

Investigate benefit sharing models for local communities and Traditional Owners, balancing the interests of stakeholders to optimise social, environmental and economic outcomes.

# Theme 1: Mapping the opportunities

## Initial critical minerals study areas

- REE - rare earth elements
- PGE - platinum group elements
- HPA - high purity alumina
- HPQ - high purity quartz silica



Download the reports here:  
[earthresources.efirst.com.au](http://earthresources.efirst.com.au)

# Theme 2: A modern regulatory regime

## Resources Victoria Approvals Coordination

- Help navigate complex processes in a timely manner and overcome roadblocks
- Reduce uncertainty associated with development approvals
- Uplift the quality of works approvals applications to maximise success

In the past 12 months Resources Victoria has approved:



**Two new exploration tunnels**



**One new mining licence  
One mine expansion**

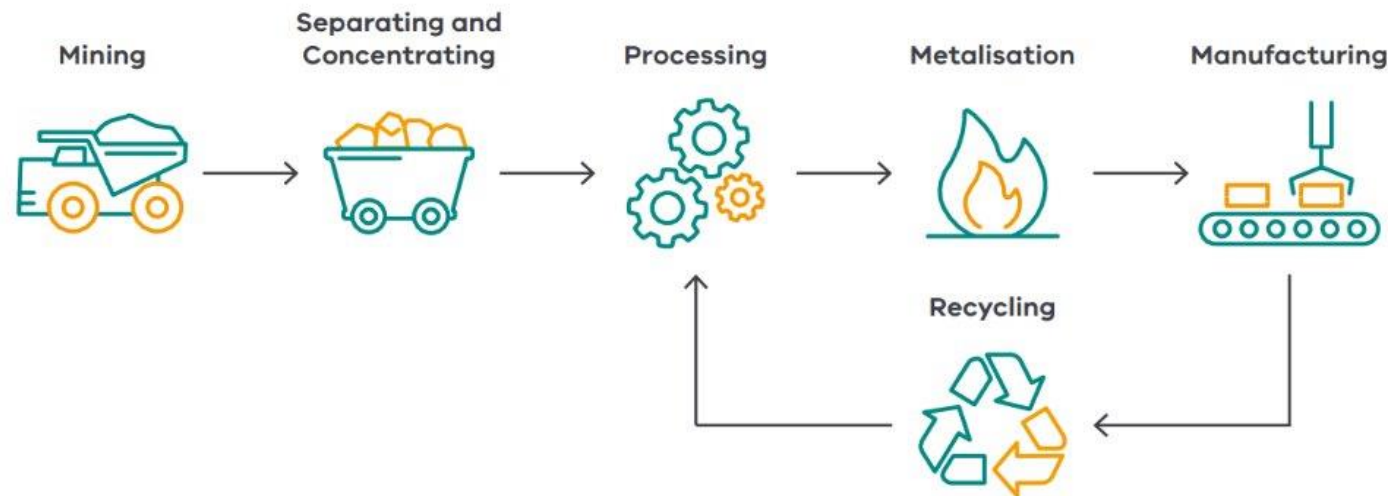


**Two new work plans  
(final approval)**

# Theme 3: Critical minerals production and processing

## Rare Earth Element metalisation study

- Assessing the economic viability of processing rare earths and identifying supply-chain opportunities
- Focusing on processing requirements – exploring a modular system for both light and heavy rare earth elements
- The study will also examine transportation logistics, including how materials move through the system and where the gaps are



# The Victorian Advantage



Two new mines approved, one under active consideration



Approvals coordination team to support timely decision making



New critical mineral studies to support exploration



REE metalisation study underway for processing and transport



Infrastructure connections: roads, rail and ports



Mining pathways course funded for regional skills uplift



Dedicated local community engagement team established



Draft benefit sharing models in partnership with Traditional Owners

# AUSTRALIA MINERALS

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## Thank you

Shannon Brown  
A/Manager, Exploration and Development  
Resources Victoria



To discover more about Victoria's  
key resource opportunities, please visit:  
[resources.vic.gov.au](https://resources.vic.gov.au)



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# AUSTRALIA MINERALS

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## Opportunities for critical minerals from mine waste in South Australia

Dr Carmen KRAPP

Geoscience Lead | Manager Mineral Systems & Resources  
Geological Survey of South Australia | Department for Energy and Mining



Government  
of South Australia  
Department for  
Energy and Mining

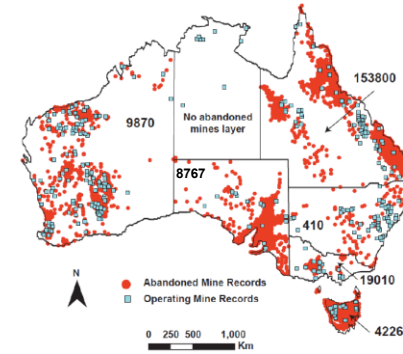
# Stocktake: South Australia's Mine Waste opportunities



- Examining potential of tailings, stockpiles and waste dumps from historic mining operations to host critical minerals content in partnership with MIWATCH team (Sustainable Minerals Institute, Univ. Queensland) and Geoscience Australia (GA).
- Identifying and ranking potential of SA's historical mine waste based on publicly accessible data.
- Active sampling of selected mine waste sites to provide assessment of their **critical metal endowment and mineralogy**.

# Stocktake: South Australia's Mine Waste opportunities

MIWATCH & GSSA – desktop study of SA's mine sites



Using 8 criteria to rank SA's 8767 mine sites for their mine waste potential:

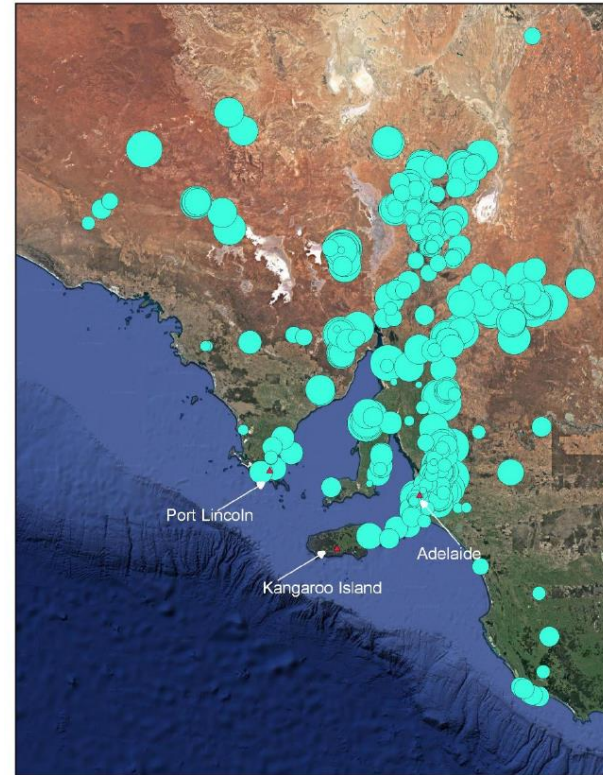
*Mine status – Known commodity – Other/associated commodities – Discovery year – Mine waste features – Distance to major city – Mine site to port – Environmental contamination*

→ ranking used to identify abandoned/historic mine sites with a high probability of containing critical metals in mine waste

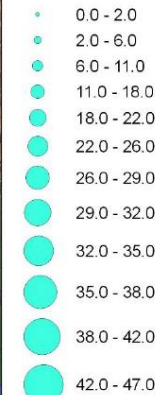


## Secondary prospectivity of South Australia's mine waste: review

Laura Jackson, Alex Corrick, Zhengdong Han, Annah Moyo and Anita Parbhakar-Fox



### Ranking Results



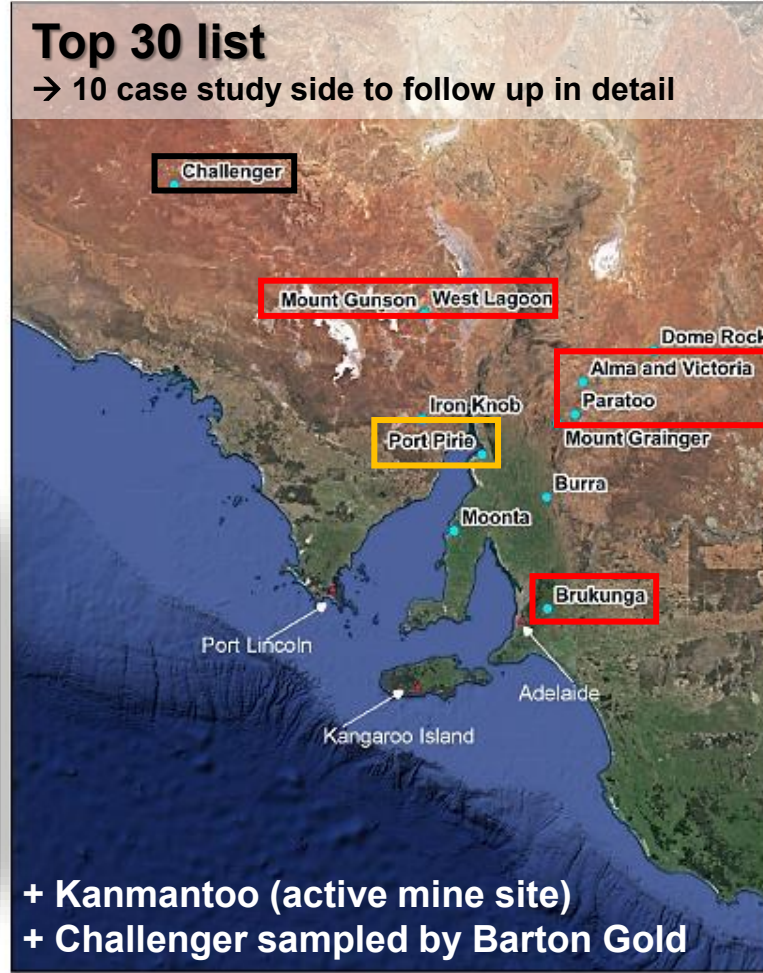
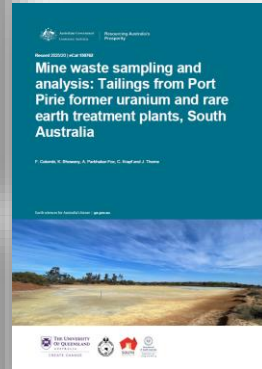
Google Satellite

Rank	MINDEP_NO	DEP_NAME	Description	Score (/50)
1	3137	West Lagoon	Mount Gunson area	47
2	8908	Port Pirie (REE)	Radium Hill waste majority	42
3	3807	Burra	Historic/ tourist site	42
4	3088	Mount Gunson	Mount Gunson area	41
5	4856	Kapunda	Existing company activity	41
6	1933	Mount Grainger		41
7	1927	Paratoo		41
8	5104	Moonta Central Lode	Historic/ tourist site	41
9	3046	Challenger	Care and maintenance	40
10	5136	Moonta Eastern Lode	Historic/ tourist site	40
11	5967	Alma and Victoria		40
12	1025	Dome Rock		40
13	6644	Iron Knob	Existing company activity	39
14	7854	Beltana	Zinc in willemite	39
15	3206	Blinman	Historic/ Tourist site	39
16	842	Mutooroo		39
17	7300	Walleroo		38
18	8256	Burra smelting works	Historic/ tourist site	38
19	962	Radium Hill	Radioactive hazard	38
20	1482	Brukunga		37
21	3057	East lagoon	Mount Gunson area	37
22	3002	Iron Monarch	Care and Maintenance	36
23	4401	Leigh Creek Lobe B		36
24	394	Perseverance		36
25	3051	Cattlegnd	Mount Gunson area	36
26	5208	Wheal Hughes		36
27	8203	Glenloth Government Battery		36
28	3029	Iron Prince	Existing company activity	35
29	3010	Peculiar Knob		35
30	4207	Rossman		35

# Mine Waste Study Sites

Mine waste sites sampled:

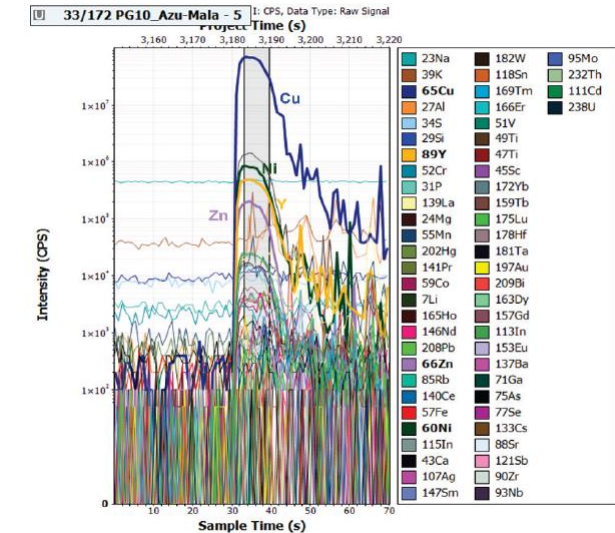
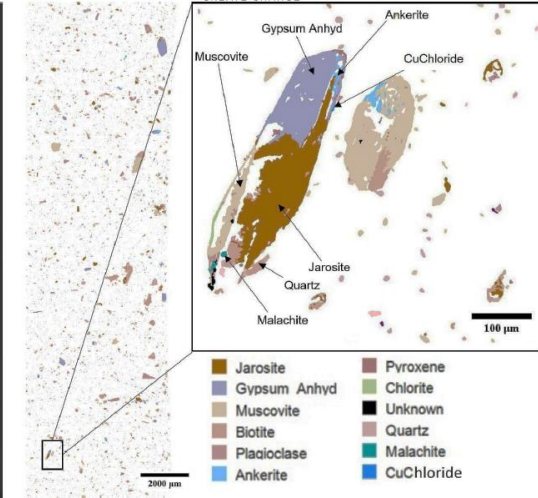
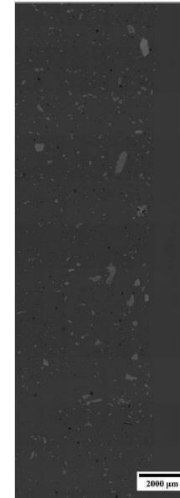
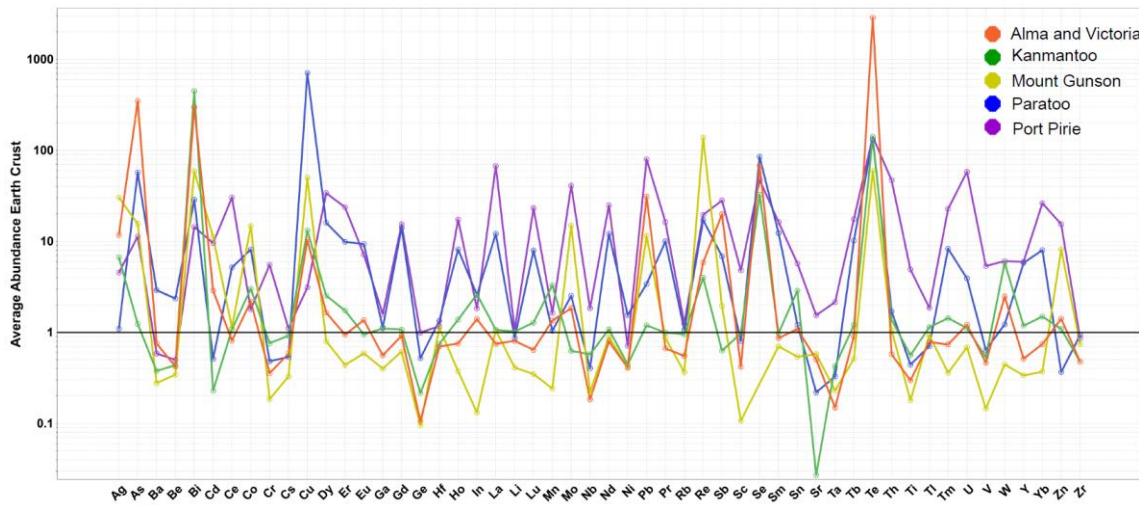
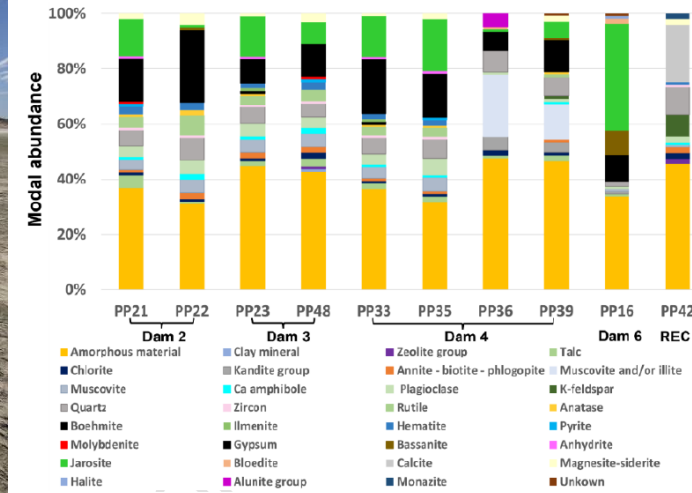
- **Brukunga**
- **Mount Gunson**
- **Kanmantoo**
- **Alma & Victoria**
- **Paratoo**
- **Port Pirie** (GA national site)



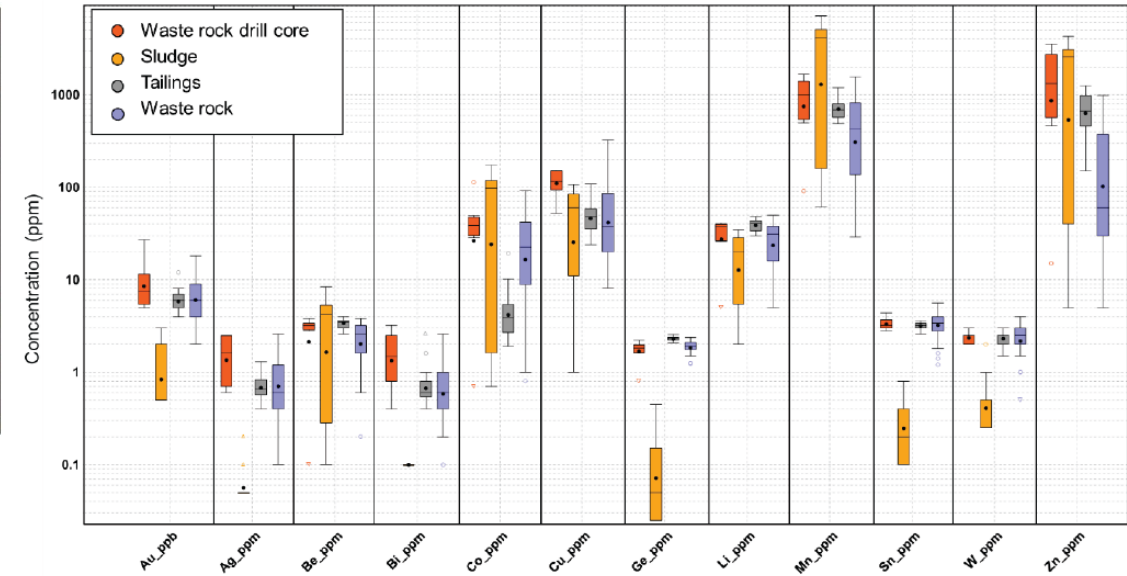
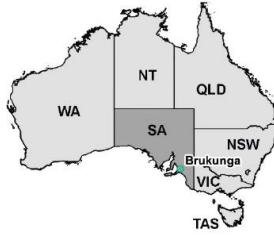
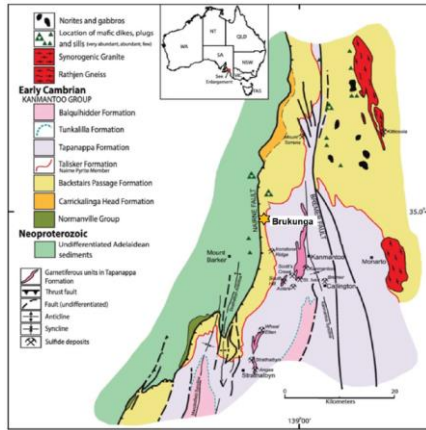
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30	4207	Rossman		35

# Analytical approach for assessing mine waste

- Mine waste sampling
- Chemical assaying (48 elements)
- Bulk and in-situ mineralogy
- Mineral chemistry (meso/micro scale)

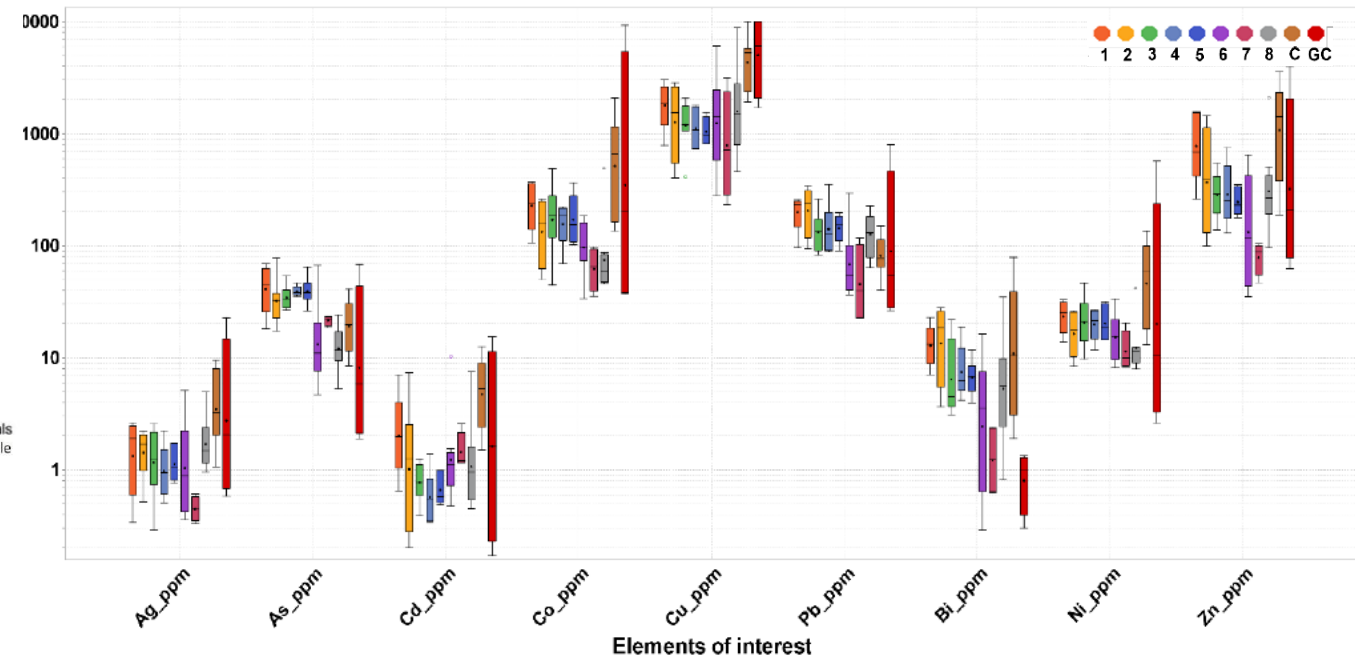
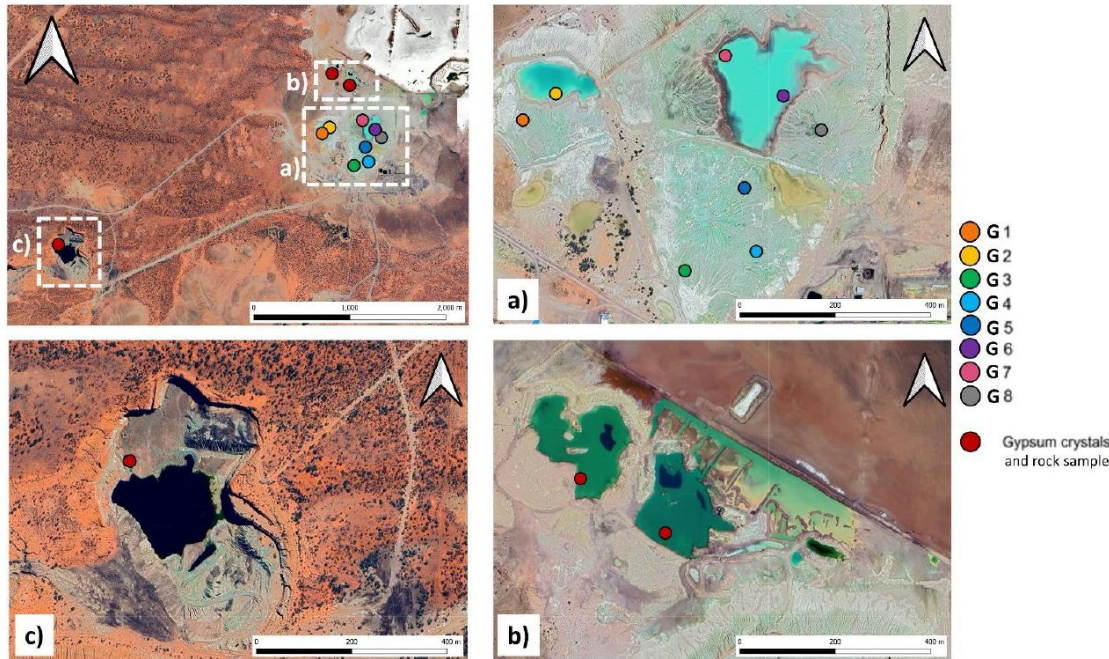


# Results: Brukunga



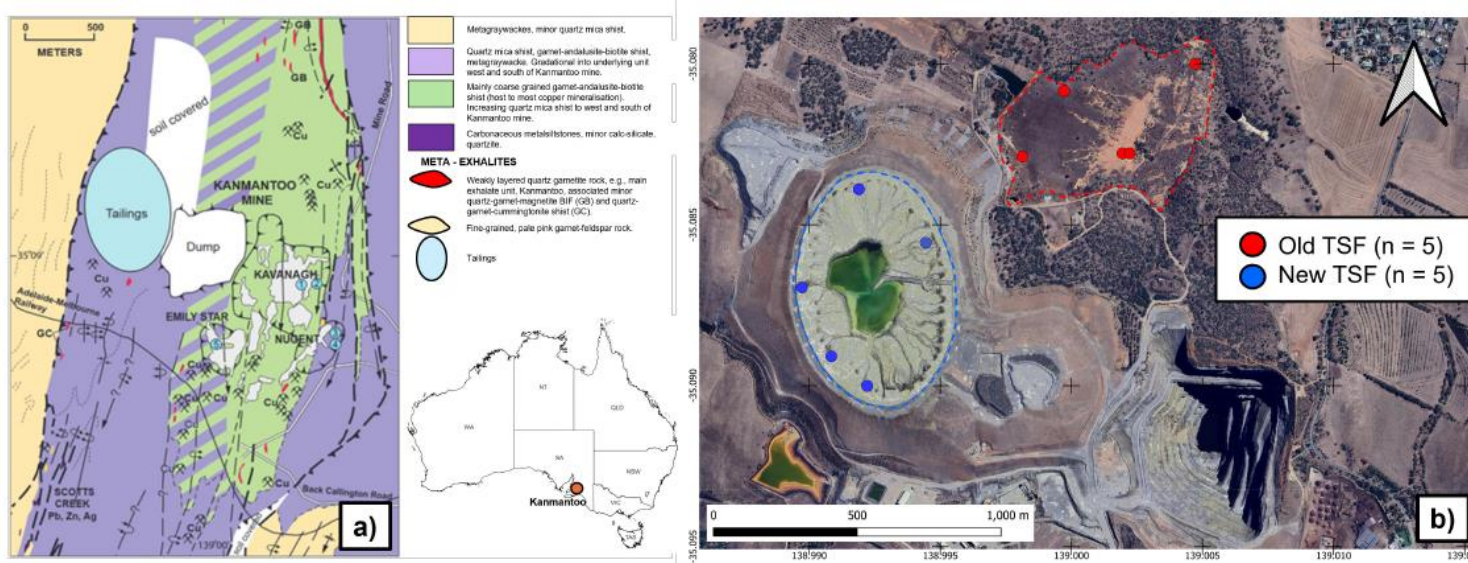
- Highest potential: **Bismuth, Cobalt, Copper, Antimony, Tungsten and Zinc**
- Concentration of sulfide minerals (pyrite average 13 wt. %, pyrrhotite average 7 wt. %) should be considered as a resource to industries that require **sulfuric acid** (e.g., fertiliser production, mineral processing, metal refining).

# Results: Mount Gunson Cu mine



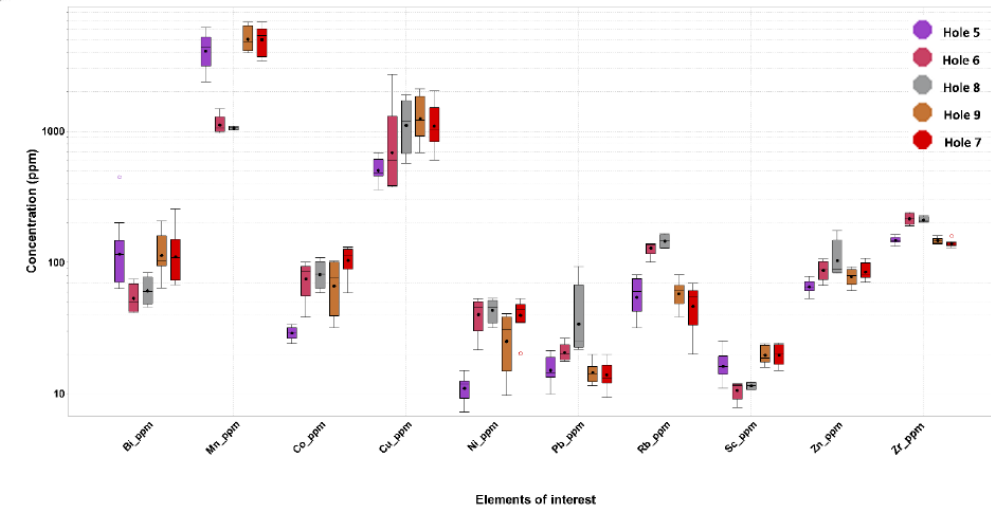
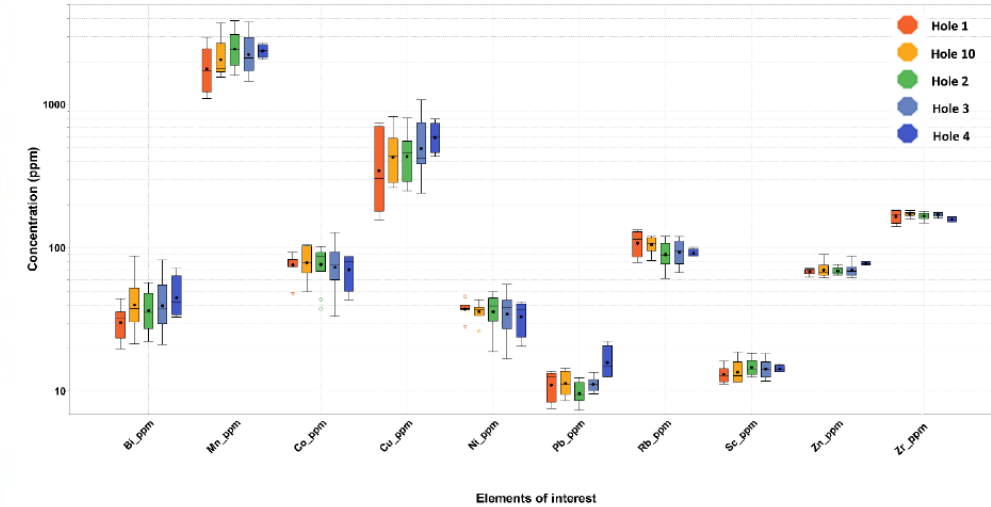
- Highest potential: **Copper, Cobalt, Silver**
- Primary minerals identified by XRD and MLA analyses are quartz and muscovite

# Results: Kanmantoo Cu-Au mine

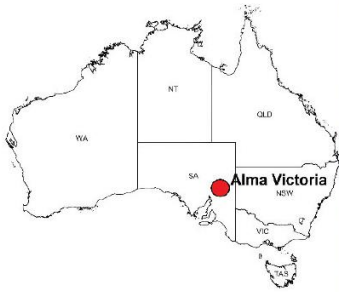


Highest potential:

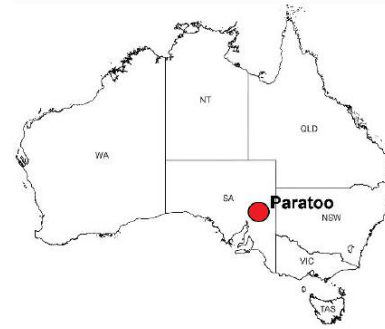
- **Zirconium, Bismuth, Titanium, Manganese** in garnets
- **Copper, Nickel, Cobalt** in iron sulfides
- Primary minerals identified by XRD and MLA analyses are garnet and quartz



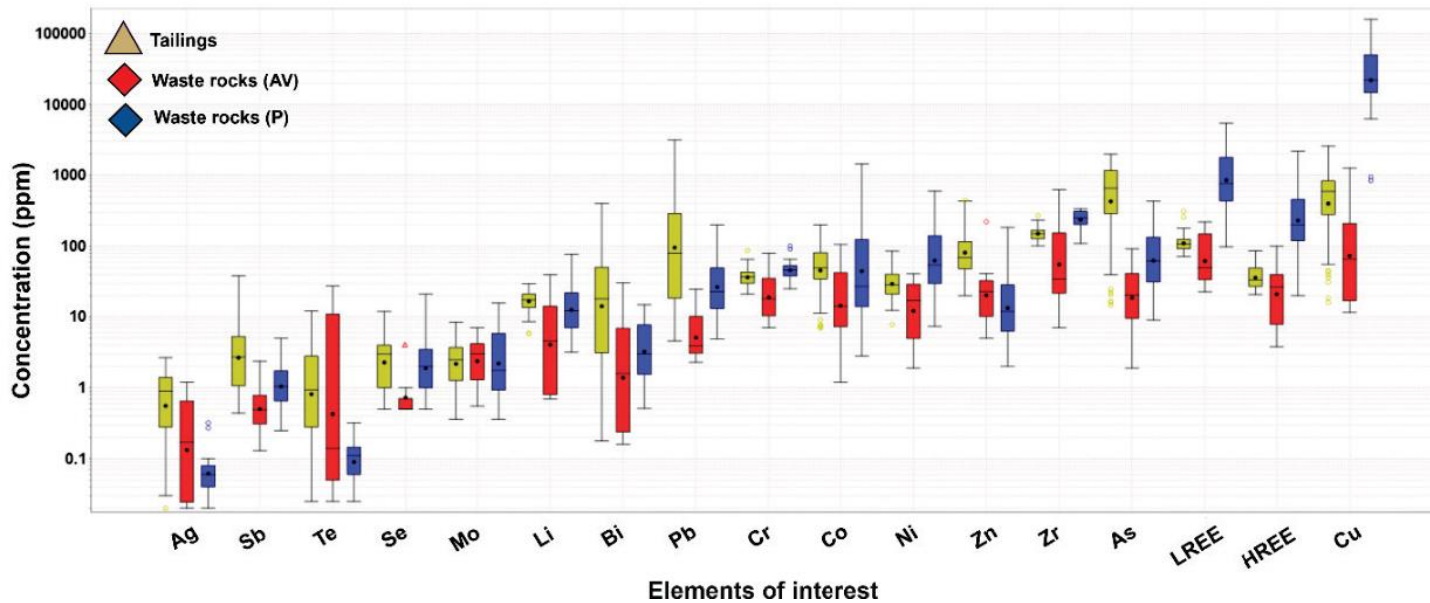
# Results: Alma and Victoria Au mine & Paratoo mine



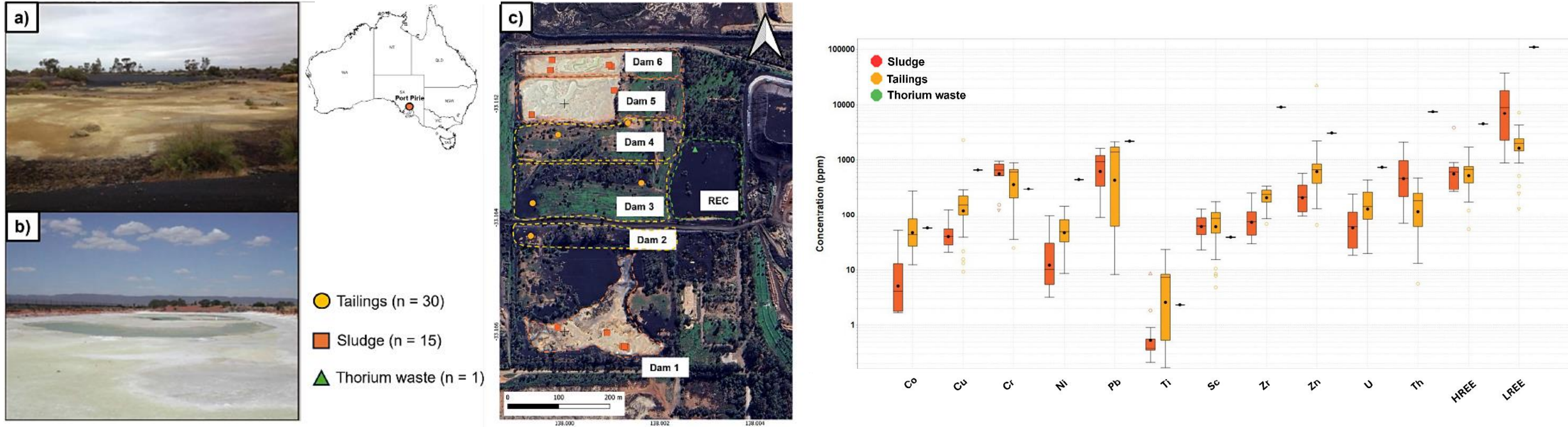
Highest potential:  
Lead, Copper, Arsenic, Bismuth, Cobalt



Highest potential:  
Copper, Cobalt, Arsenic, Light & Heavy REE



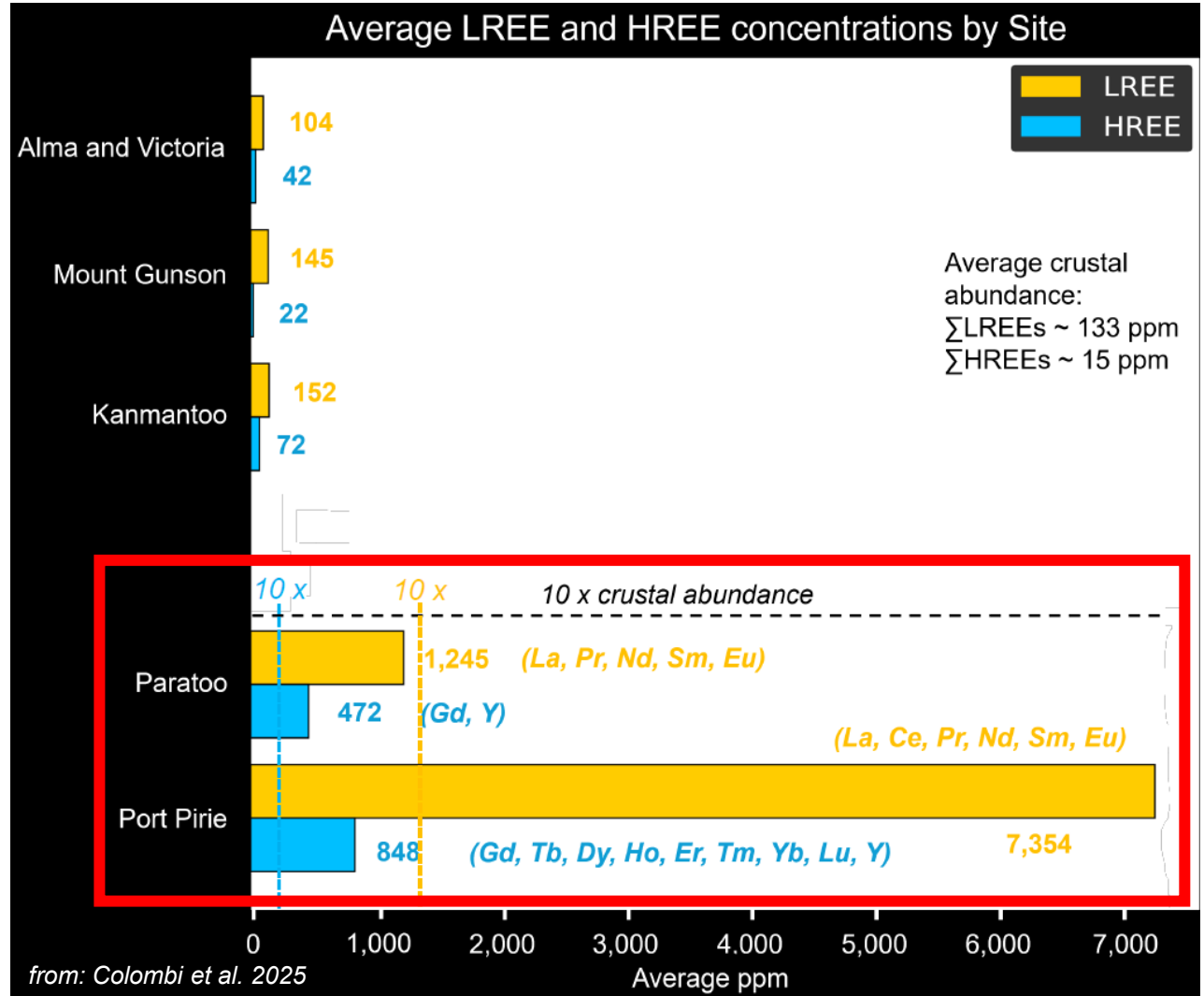
# Results: Port Pirie U and REE treatment facility



- Highest potential: **Zinc, Molybdenum, Lead, Uranium, Thorium, Heavy and Light REE**
- Primary minerals identified by XRD and MLA analyses are gypsum, jarosite, calcite, monazite and amorphous material

# Average concentrations of LREE's and HREE's

- Port Pirie and Paratoo display significant elevated REE's concentrations( >10 times crustal averages)
- REE comparable to lower grade deposits (e.g., Dubbo NSW with 0.3-1% REO)



# Stocktake: South Australia's Mine Waste opportunities

Government of South Australia | ENERGY & MINING | South Australia's mine waste ranking | Powered by SARIG

RESET | Feature size: All | Deposit status: All | Discovery year range: All | Major commodity: All | Geochemical associations: All

Name	Mineral deposit link	Mine waste ranking	Commodities	Major commodity	Geochemical associations	Discovery year	Classification code
West Lagoon		47	Copper, Silver, Cobalt	Cu	Cu-Co-Ag-Bi-Au	1895	Deposit
Iron Magnet		43	Iron	Fe	N/A	1930	Deposit
Burra		42	Copper, Dolomite	Cu	Cu-(Co-Ni-Zn-Au-Mo-Fe-U-REE)	1845	Deposit
Iron Duchess South		42	Iron	Fe	N/A	1930	Deposit
Port Pirie Ree		42	Rare Earths, Rutile	REE	N/A	1955	Treatment site
Iron Chieftain		41	Iron, Manganese	Fe	N/A	1933	Deposit
Iron Knight		41	Iron	Fe	N/A	1930	Deposit
Kapunda		41	Copper, Rare Earths	Cu	Cu-(REE-Sc-Au)	1842	Deposit

Location: AUSTRALIA

Ranking contributions:

Name	Ranking Contributions	Total
West Lagoon - 3137	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (7)	47
Iron Magnet - 8279	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (3)	43
Burra - 3807	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (2)	42
Iron Duchess South - 71...	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (2)	42
Port Pirie Ree - 8908	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (2)	42
Iron Chieftain - 7197	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (1)	41
Iron Knight - 7201	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (1)	41

search for 'fit for purpose' mine waste sites

e.g., REE-associated opportunities

Government of South Australia | ENERGY & MINING | South Australia's mine waste ranking | Powered by SARIG

RESET | Feature size: All | Deposit status: All | Discovery year range: All | Major commodity: All | Geochemical associations: Multiple selections

Name	Mineral deposit link	Mine waste ranking	Commodities	Major commodity	Geochemical associations	Discovery year	Classification code
Burra		42	Copper, Dolomite	Cu	Cu-(Co-Ni-Zn-Au-Mo-Fe-U-REE)	1845	Deposit
Kapunda		41	Copper, Rare Earths	Cu	Cu-(REE-Sc-Au)	1842	Deposit
Paratoo		41	Copper, Rare Earths	Cu	Cu-(Au-REE)	1888	Deposit
Olympic Dam		39	Copper, Silver, Gold, Iron, Rare Earths, Uranium, Uranium Oxide	Cu	Cu-Au-Ag-U-Fe-(REE-Ba-F)	1975	Deposit
Parabarana		38	Copper	Cu	Cu-Mo-Au-(U-REE-As-Pb-Zn-Bi-Co)	1863	Deposit
Radium Hill		38	Uranium, Mica	U	U-Ra-(RFF)	1906	Deposit

Location: SOUTH AUSTRALIA

Ranking contributions:

Name	Ranking Contributions	Total
Burra - 3807	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (2)	42
Kapunda - 4856	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (1)	41
Paratoo - 1927	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (1)	41
Olympic Dam - 3000	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (9)	39
Radium Hill - 962	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (9)	39
Parabarana - 3203	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (8)	38
Weekeroo - 892	Associated commod ran... (10), Discovery year ranking (10), Feature ranking (10), Known commod ran... (10), Mine status ranking (10), Other ranking cont... (8)	38

# Contacts

## Dr Carmen Krapf

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Department for Energy and Mining  
Adelaide, South Australia 5000

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**AUSTRALIA**  **MINERALS**

REALISE THE OPPORTUNITY

# Exploration grants unlocking new critical minerals discoveries in the Australia's Northern Territory

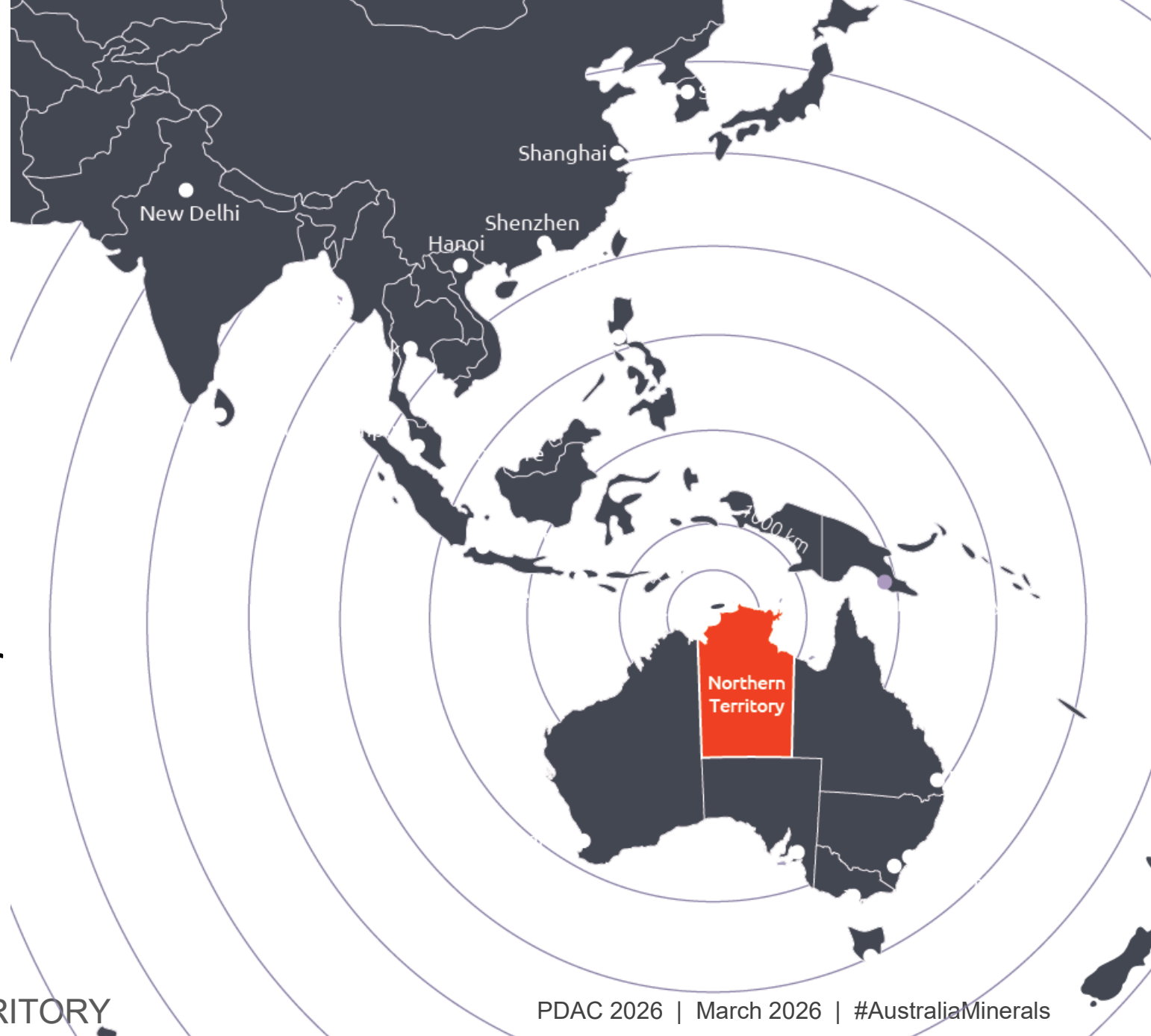
Kate Mornane

Manager Grants, Investment and Promotion  
Northern Territory Geological Survey



# Australia's Northern Territory

- 1.35 million km<sup>2</sup>
- 250,000 people
- Almost 30% GSP resources sector
- Vastly under-explored
- High geological potential for critical minerals.



# EXPLORATION GRANTS

The Northern Territory Government's *Resourcing the Territory* program delivers the **Geophysics and Drilling Collaborations** (GDC) program, providing up to \$4 million annually to co-fund projects that close critical geological knowledge gaps, stimulate exploration, and accelerate resource discovery and development across the Territory.

Co-fund for 50% of direct costs capped at:

- Greenfields drilling **up to \$200,000**
- Brownfields diamond drilling **up to \$150,000**
- Regional-scale geophysics **up to \$150,000**
- Innovative targeting **up to \$100,000**
- Mineral characterisation and test work, particularly for critical minerals **up to \$100,000**

Round 19 applications are open till **22 April 2026**. Apply now.

# Exploration grants: Why do we do it?

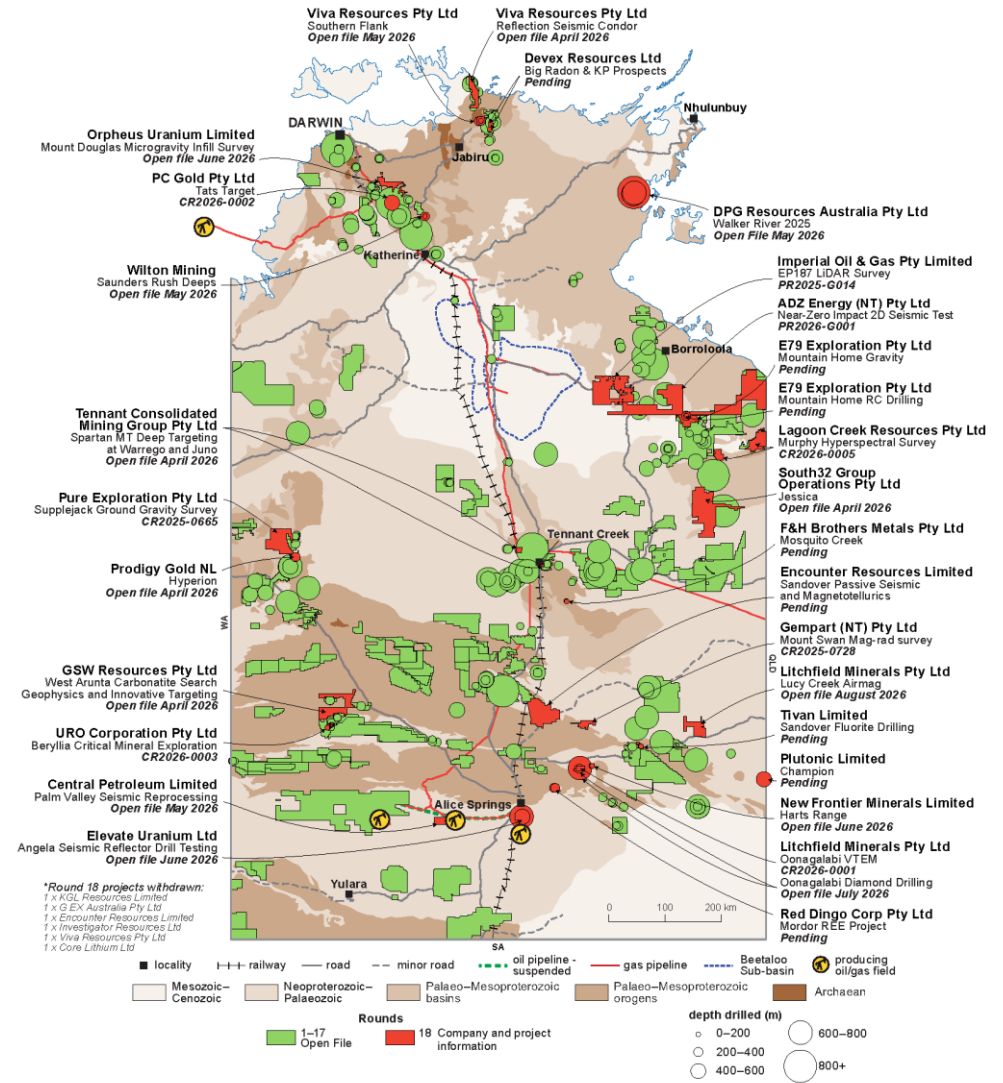
- Shares risk for programs designed to test risky concepts, or close critical geological knowledge gaps
- Generates substantial new open file geoscience data
- Builds a Territory-wide drillcore collection
- Unlocks significant additional investment in exploration
- Supports the whole exploration lifecycle
- Tests new ideas and techniques
- Identifies to new areas of prospectivity
- Leads to new discoveries.



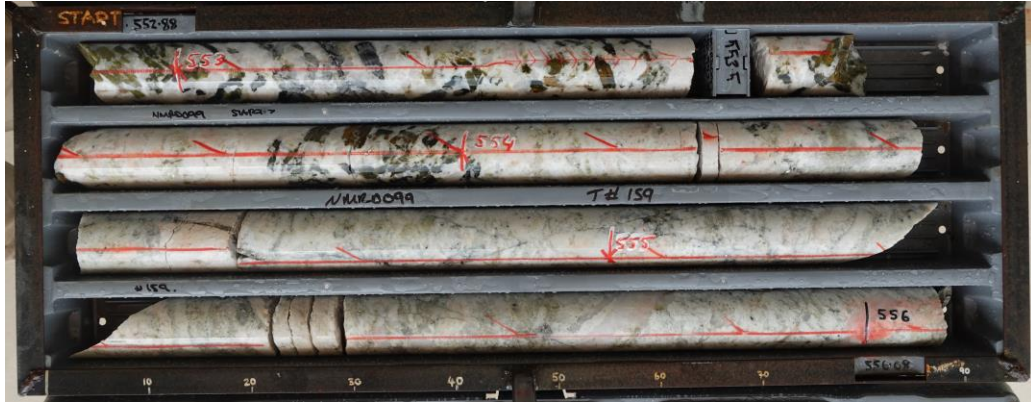
# Generates substantial new open geoscience data

Rounds 1 to 17 statistics:

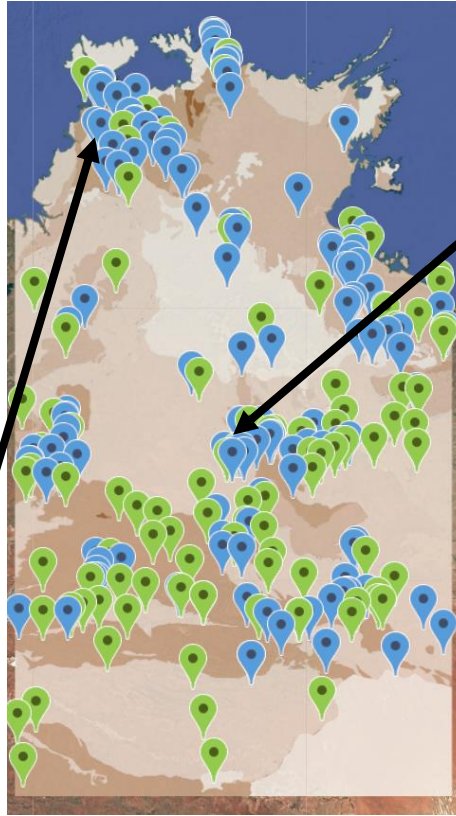
- 201 GDC co-funded programs and technical reports
- 112 drilling programs:
  - 534 drillholes for 96,000m including 69,000 cored metres
- 89 geophysics programs:
  - ~400,000 line km of magnetics and radiometrics (33 surveys)
  - ~335,000 line km of airborne electromagnetics (34 surveys)
  - ~40,000 ground gravity stations (25 surveys)
  - ~59 line km 2D reflection seismic (3 surveys)
  - ~6,000 line km of airborne gravity gradiometric (4 surveys)
  - ~635 passive seismic stations (5 surveys)
  - ~591 magnetotelluric stations (126 line km) (4 surveys)
- Other small scale innovative targeting techniques including 2D and 3D induced polarisation surveys and sub audio magnetics.



# Test new ideas and techniques, proof of concept for other explorers



In 2024, **Core Lithium** drilled a blind pegmatite at Shoobridge to test Ambient Noise Tomography (ANT) models for direct targeting. The program intersected narrow pegmatites (minimal mineralisation) at depth, demonstrating proof of concept for passive seismic methods in lithium exploration. [CR2025-0127](#)



In 2023, **Castile Resources** deployed co-funded passive seismic (ANT) at Rover 1, identifying velocity contrasts associated with the undercover ironstone-hosted Cu-Au-Co-Bi mineralisation. Castile used the technique over more exploration targets. Follow-up co-funded drilling in 2024 intersected ironstone alteration at Pathfinder 38. The results demonstrate the value of integrating passive seismic in unlocking new undercover targets across the Tennant Creek and Rover fields and beyond. [CR2025-0299](#)

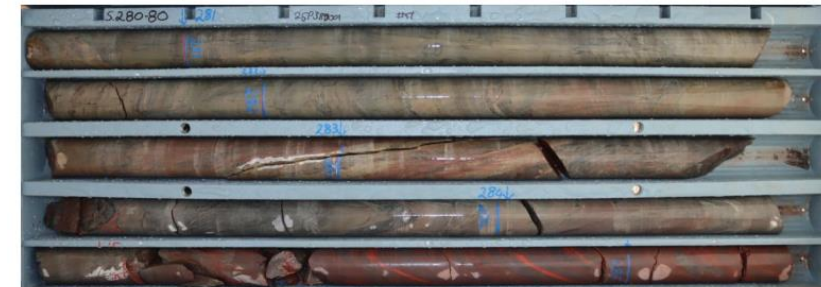


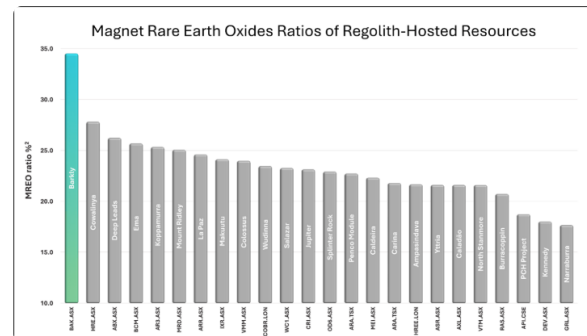
Figure 9: An example of strong pervasive silica with patchy moderate hematite alteration observed between 253 and 295m

# Leads to new discoveries

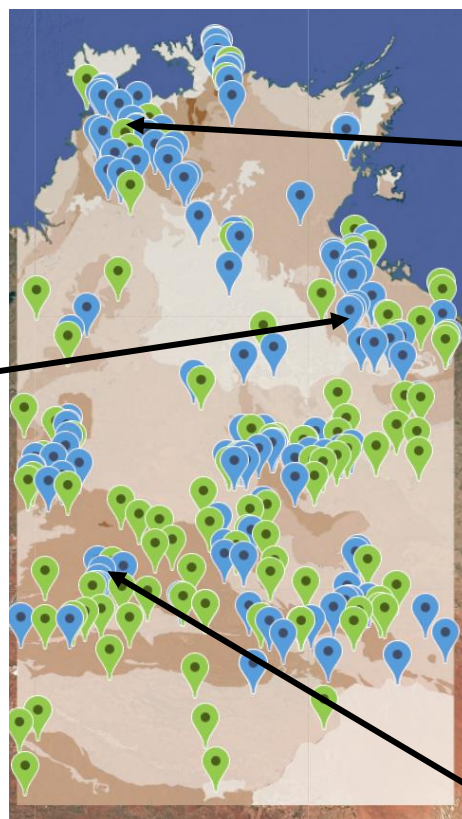
- Richard Schodde (MinEx CRC) estimates that greenfields exploration delivers a significant discovery 1 in every 38 to 75 exploration programs
- Across 86 GDC greenfields programs to end of round 16, expect **1–2 discoveries**
- **GDC has delivered 3 significant discoveries.**



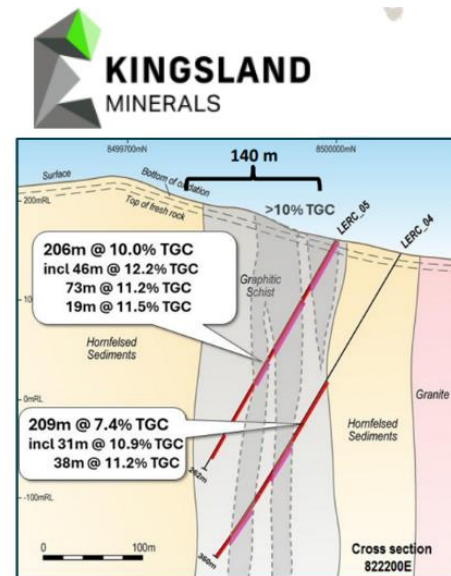
# New critical minerals discoveries co-funded by the GDC



In 2022, Transition Minerals (now **Barkly Rare Earths Ltd**) announced a **maiden JORC Inferred Resource** at the Barkly regolith-hosted REE project of **40 Mt at 0.21% TREO**, with a high proportion of magnet rare earth oxides (Nd, Pr, Dy, Tb). An additional Inferred resource was defined within an overlying lateritic vanadium horizon, with gallium also identified. Further drilling and metallurgical test work are planned for 2026. [CR2022-0491](#)



In 2023, **Kingsland Minerals Ltd** announced a **maiden Inferred JORC resource** at Leliyn, one of Australia's largest graphite deposits, following co-funded diamond drilling at the deposit. Gallium and titanium are also being evaluated as a by-product. The project is now in **PFS**. [CR2023-0740](#)



In 2023, **GSW Resources Pty Ltd** identified a significant deposit of high-grade rare earth elements at **Callista** following a co-funded maiden aircore drilling program. [CR2024-0016](#)

# New areas of prospectivity: Round 18 critical minerals exploration

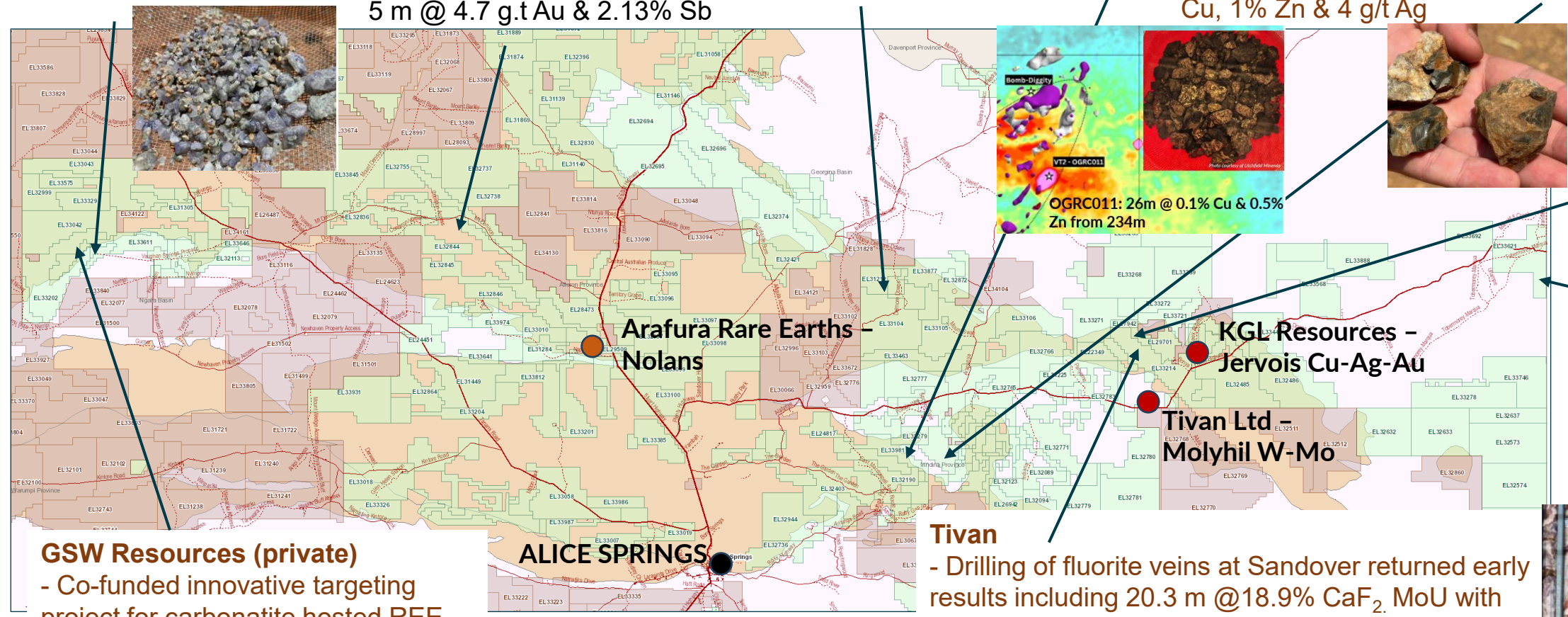
**URO Corporation (private)**  
- Co-funded Beryllia drilling targeting Be, Sn, F, Li. Results pending.

**iTech Minerals**  
- High grade gold and antimony results in Reynolds Range area, with early results  
5 m @ 4.7 g.t Au & 2.13% Sb

**Lithium Plus Minerals**  
- Drilling at Spotted Wonder with near-surface intersections including 11m @ 0.11% BeO

**Litchfield Minerals**  
- Successfully tested co-funded VTEM targets enabled raising that lead to further drilling at Oongalabi copper deposit. Delivering very promising early results 128 m @ 0.6% Cu, 1% Zn & 4 g/t Ag

**New Frontier Resources**  
- Co-funded drilling of REE-Nb pegmatites. Results pending.



**Daly Resources**  
- Fluorite prospects adjacent to the Sandover project.

**Plutonic**  
- Drilling of enigmatic epithermal mineral system. Co-funded drilling planned.

**GSW Resources (private)**  
- Co-funded innovative targeting project for carbonatite hosted REE. Results pending.

**Tivan**  
- Drilling of fluorite veins at Sandover returned early results including 20.3 m @ 18.9% CaF<sub>2</sub>. MoU with Sumitomo Corporation. NTGS to co-fund untested fluorite veins and first met work.

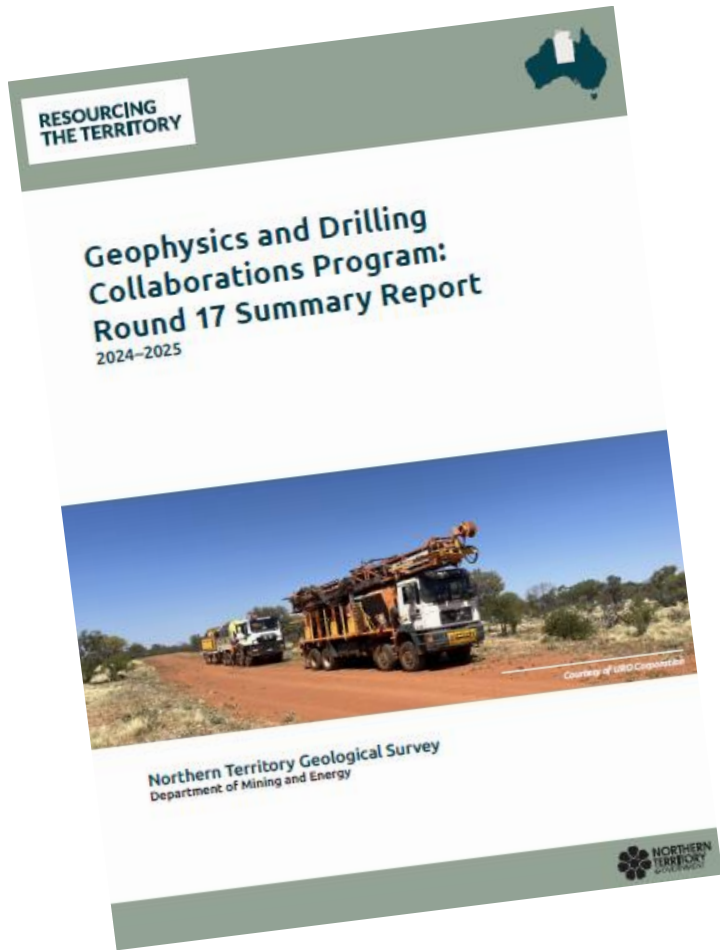
# Exploration grants unlocking new critical minerals discoveries in the Australia's Northern Territory

Co-fund the whole exploration lifecycle:

- First passing non-diamond drilling of an area
- Tests new ideas and techniques
- Early stage metallurgical test work and ore characterisation.



# More information



**RESOURCING THE TERRITORY**

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### Exploration grants

The Geophysics and Drilling Collaborations program co-funds industry exploration programs to advance geological understanding and resource development in the Territory. The outcomes of the program are expected to improve geological knowledge and mineralisation targeting within a region, particularly at depth.

#### Exploration grants

- Round 19 successful projects
- Successful projects in previous rounds

#### Overview

The Geophysics and Drilling Collaborations (GDC) program is a competitive grants program funded by the NT Government's \$9.5 million per annum Resourcing the Territory program and is administered by the Northern Territory Geological Survey (NTGS).

The program will allocate up to \$4 million from the \$9.5 million Resourcing the Territory program to share between eligible selected programs to co-fund projects that address geoscientific knowledge gaps, advance exploration activity, and support the discovery and development of resources in the Territory.

Applicants must meet eligibility requirements to be considered for funding. Information about essential eligibility, project specific eligibility, the funding sequence, application process and successful applicants are detailed in the [round 19 guideline](#) (PDF 147 KB).

#### Round 19

Applications for round 19 are now open and close 5pm (Australian Central Standard Time) Wednesday 22 April 2026 through [GrantsNT](#).

For any queries, contact the [collaborations grant manager](#).



Round 19 applications are open till **22 April 2026**. Apply now through **GrantsNT**.

AUSTRALIA  MINERALS

REALISE THE OPPORTUNITY

# Thank you

Kate Mornane

Manager Grants, Investment and Promotion

Northern Territory Geological Survey

Email: [kate.mornane@nt.gov.au](mailto:kate.mornane@nt.gov.au)

[collaborations.dme@nt.gov.au](mailto:collaborations.dme@nt.gov.au)



# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## The Macquarie Arc and beyond— copper and gold opportunities in NSW

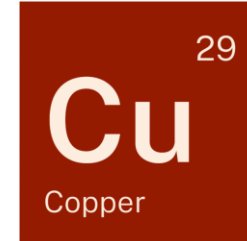
Dr Phillip Blevin  
Chief Geoscientist & Head  
Geological Survey of New South Wales



# Copper



NSW ranked  
**No. 2**

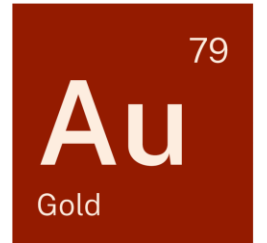


- 2<sup>nd</sup> largest Economic Demonstrated Resources for copper in Australia
- NSW has large reserves of copper - more than 11 million tonnes in current copper resources
- The Macquarie Arc in the Lachlan Orogen is a world-class region for exploration

# Gold

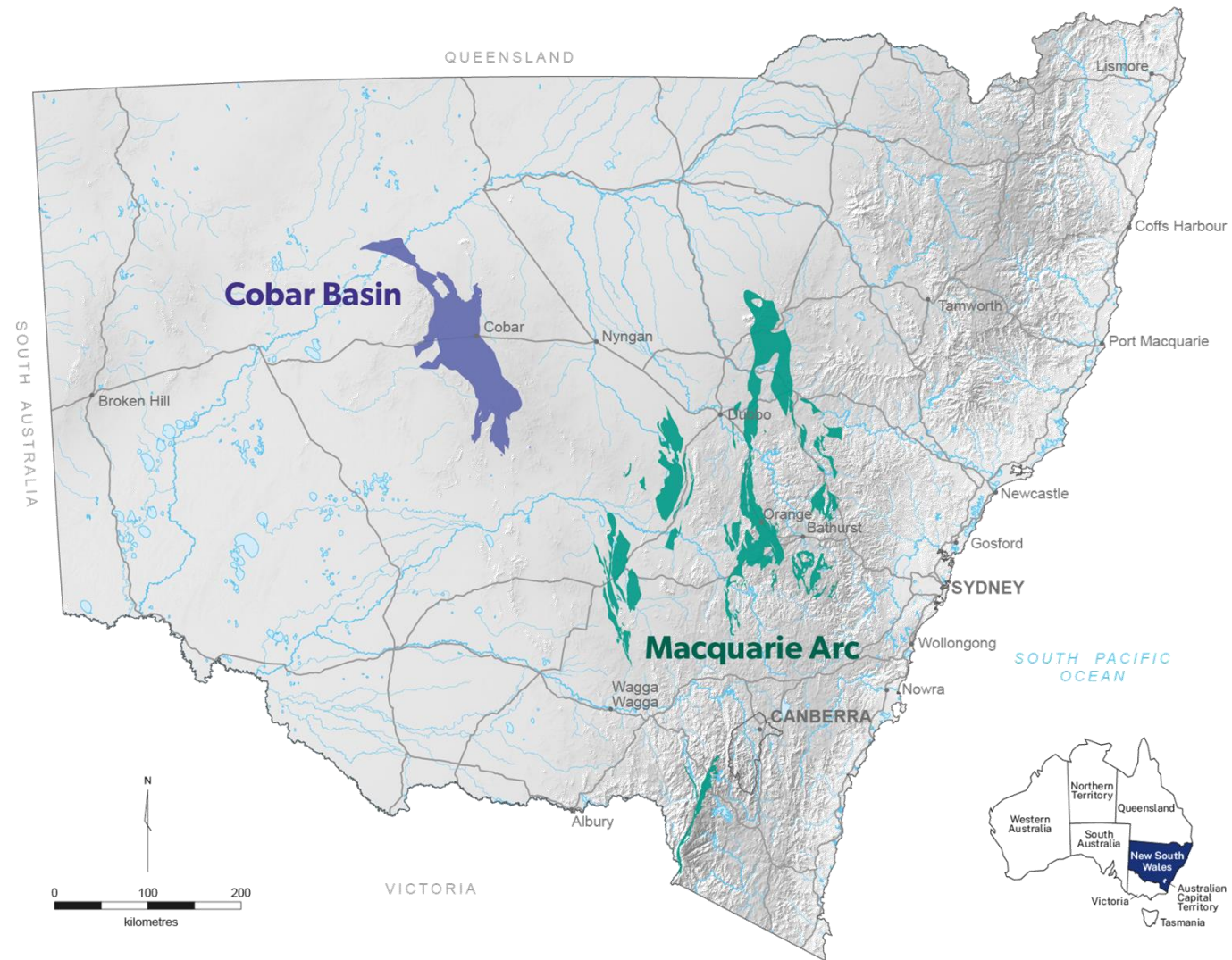


NSW ranked  
**No. 3**

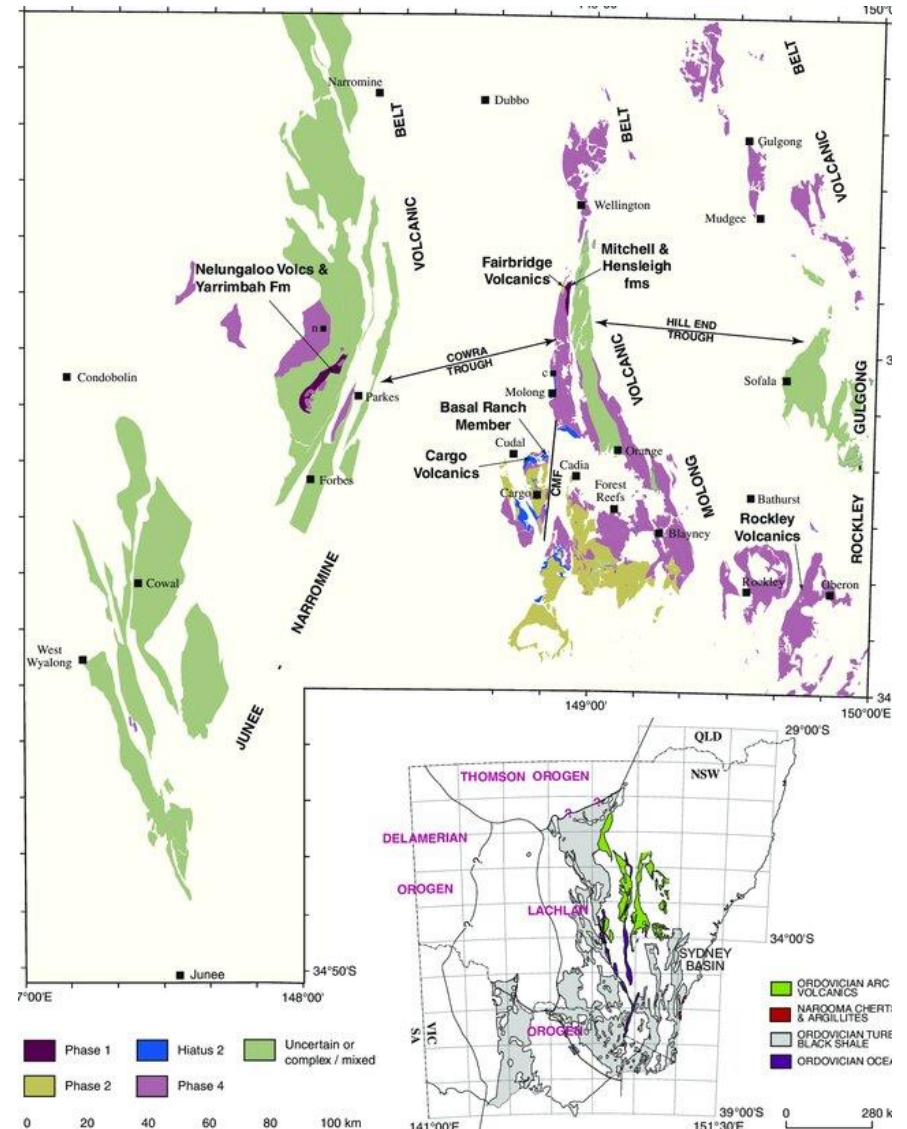
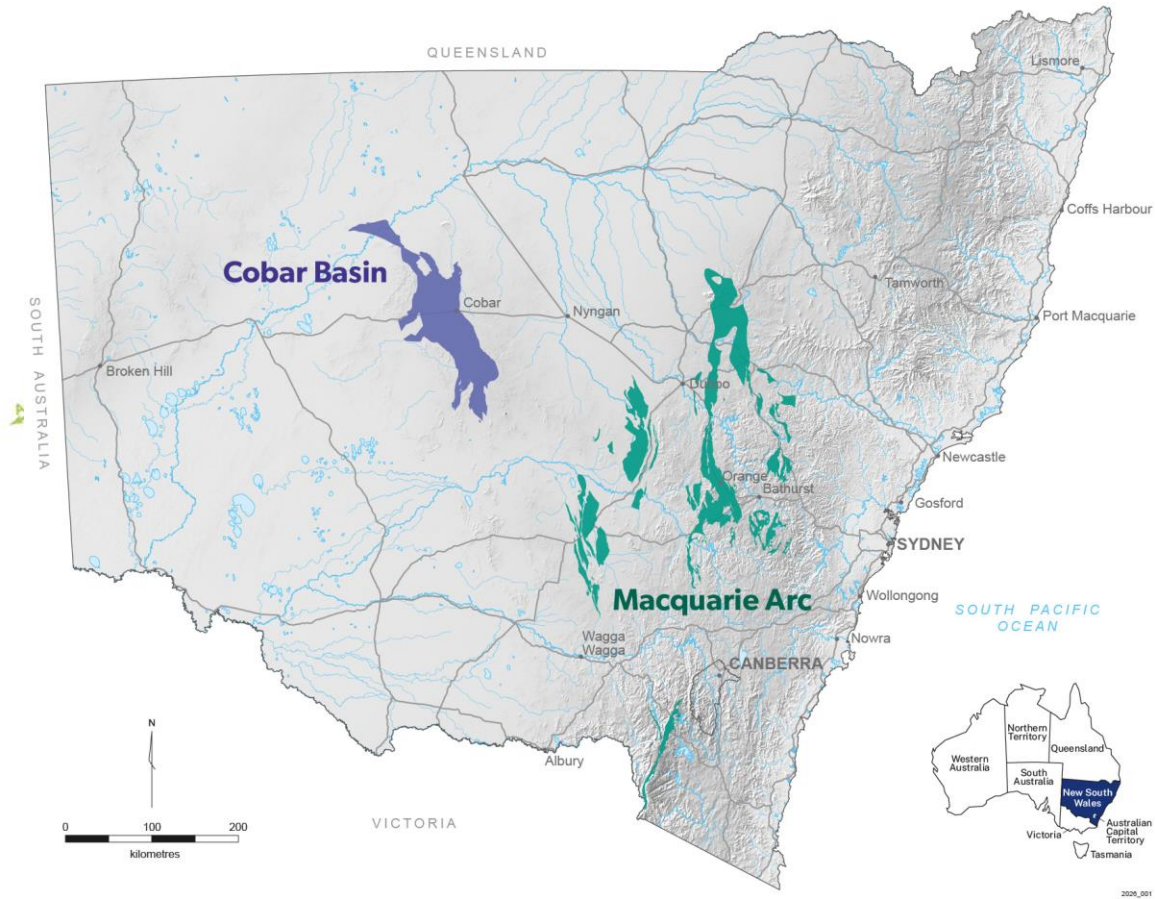


- 3rd largest Economic Demonstrated Resource for gold in Australia
- NSW Macquarie Arc is world-class for gold deposits
- Excellent brownfields and greenfields exploration opportunities for gold in NSW

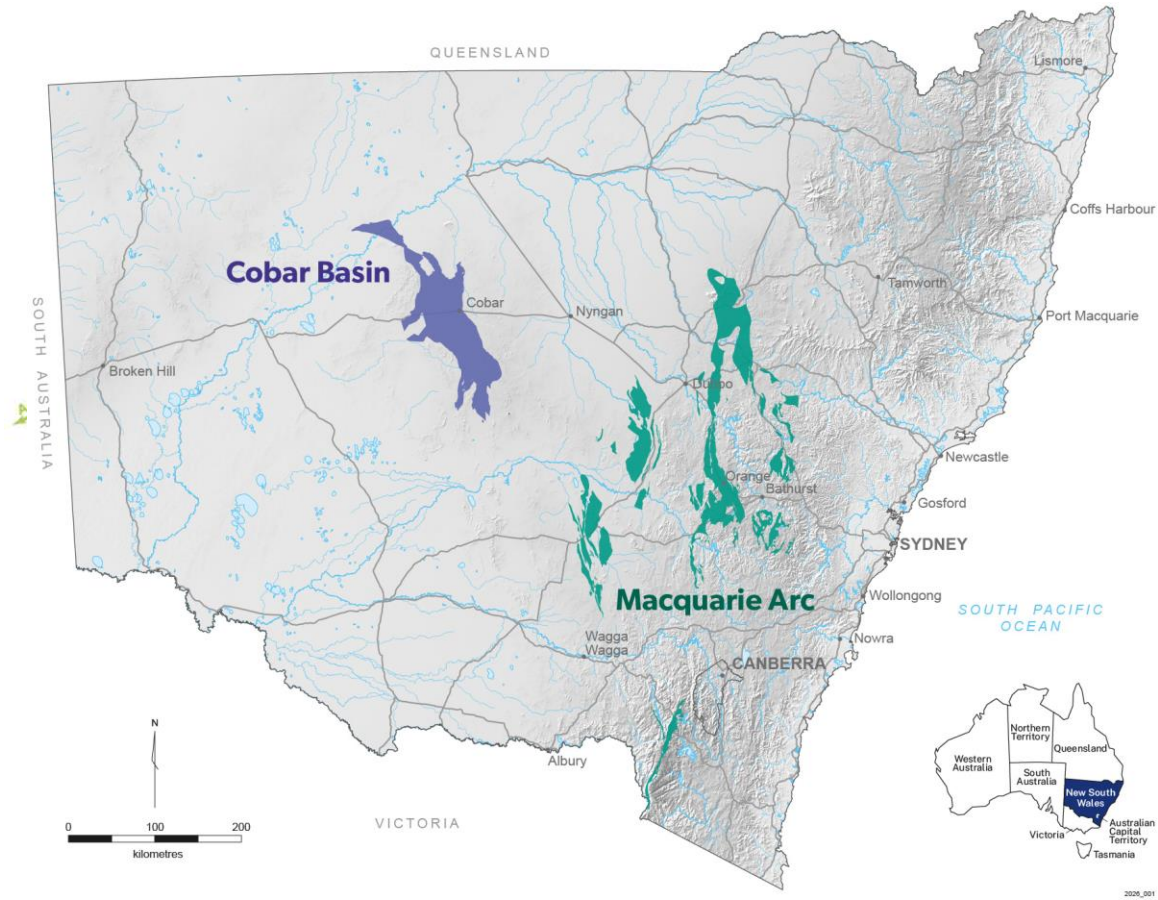
# Macquarie Arc and Cobar Basin



# Macquarie Arc - World Class Porphyry Cu-Au Province

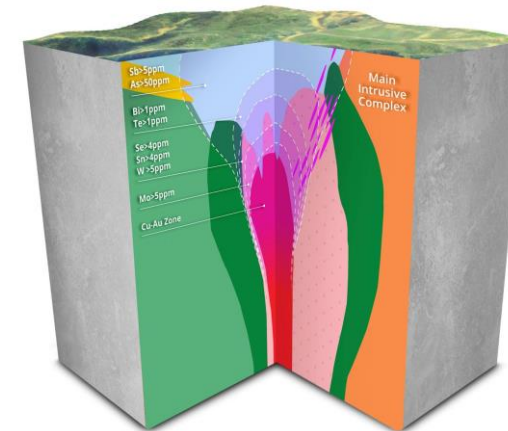
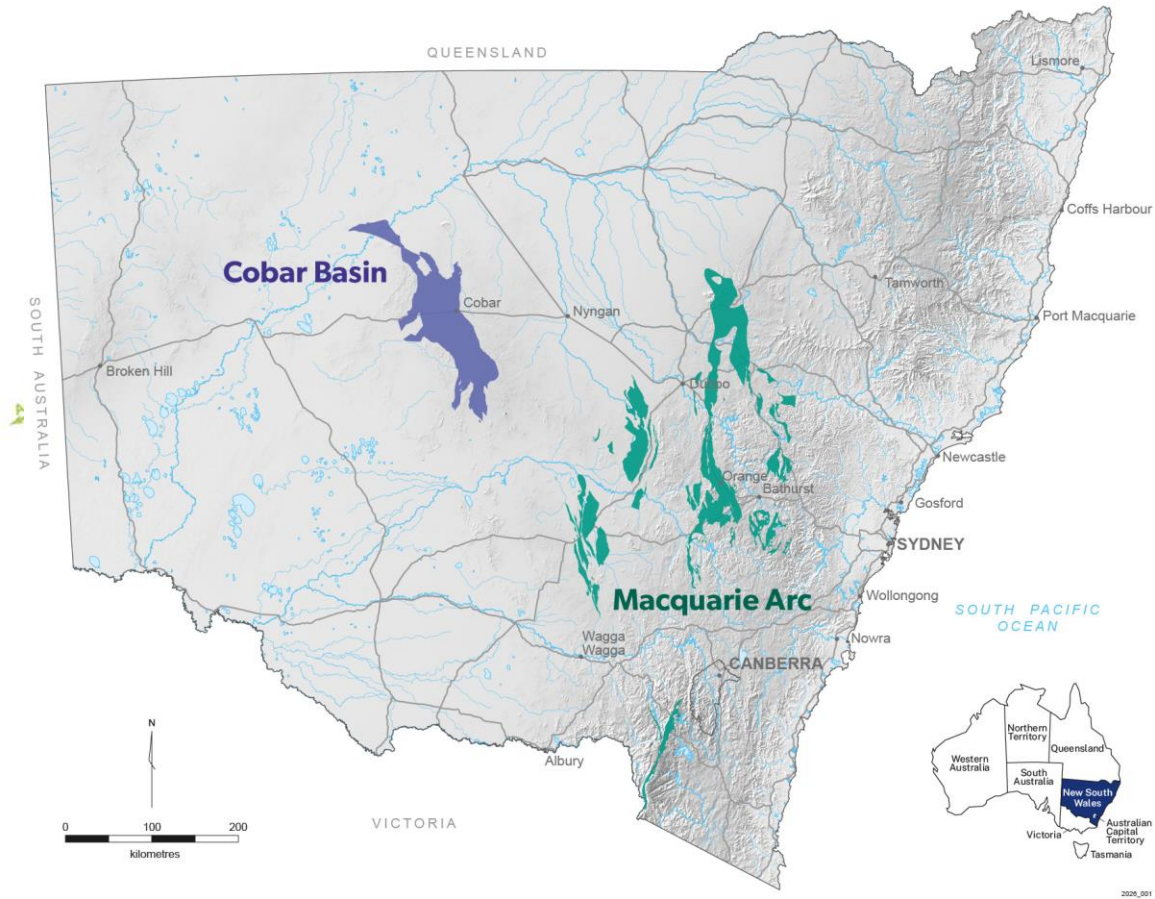


# Macquarie Arc - World Class Porphyry Cu-Au Province

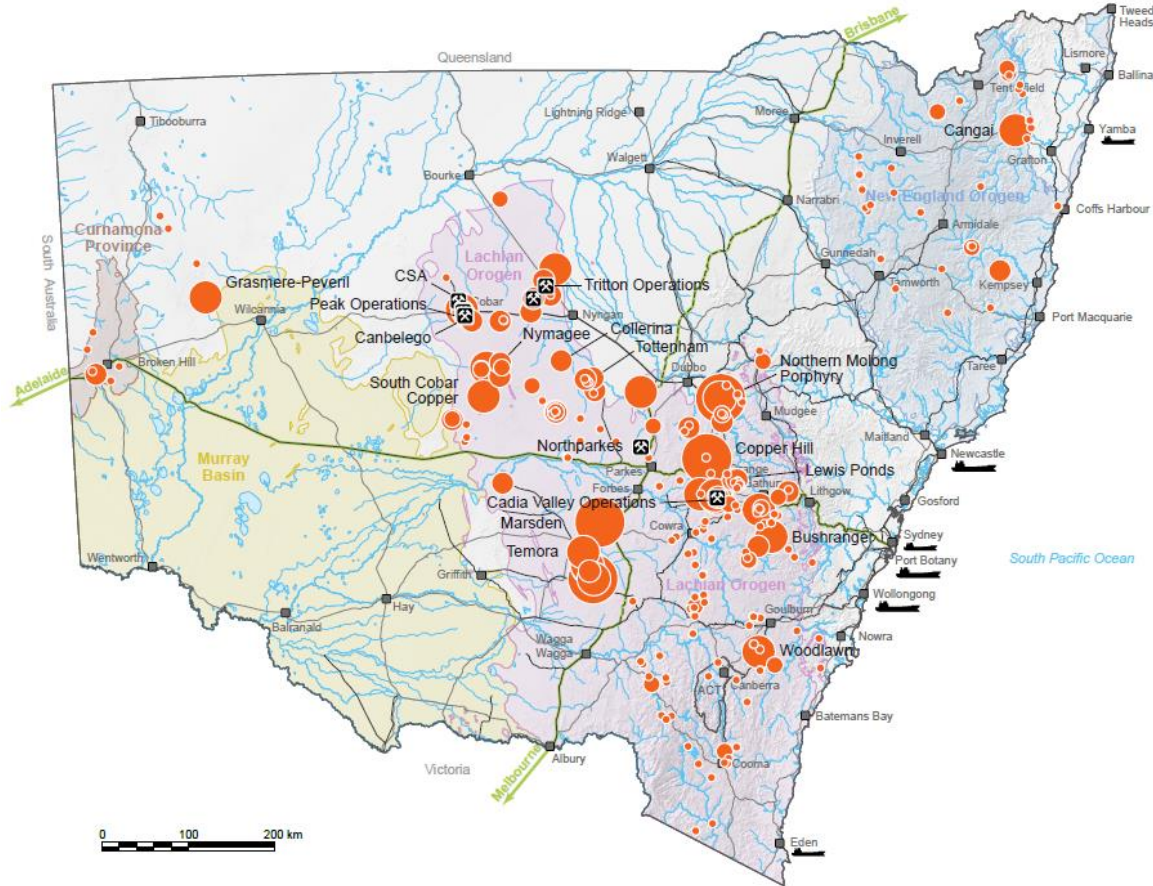


# Macquarie Arc - World Class Porphyry Cu-Au Province

- Porphyry Cu-Au, Au rich
- Skarns
- Mesothermal/Epithermal
- Cadia (>50Moz Au & 9.5Mt Cu),
- Cowal (9.6Moz Au)
- Boda (6.4Moz Au & 1Mt Cu)



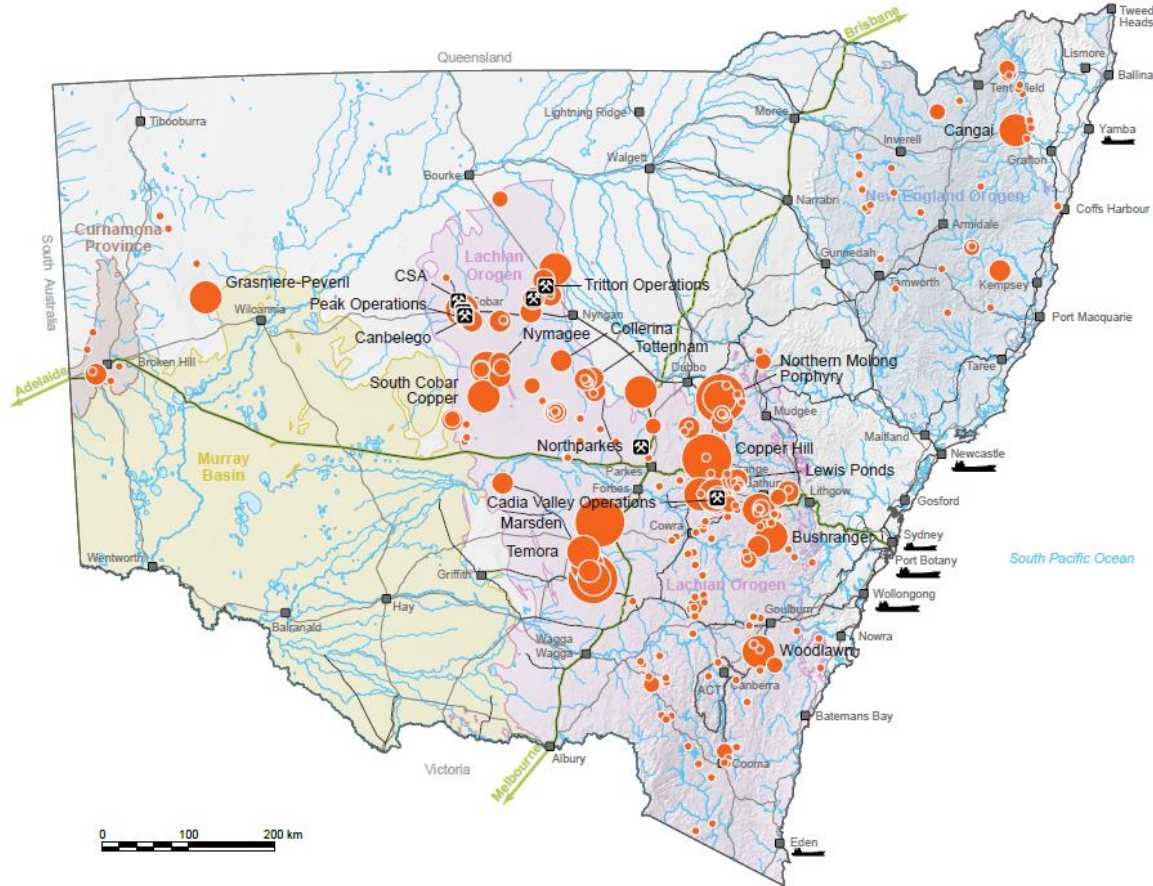
# NSW copper projects and operating mines



## Operating mines

- Cadia Valley Operations ([Newmont Corporation](#))
- Northparkes Operations ([Evolution Mining Limited](#))
- CSA Mine ([Harmony Gold Mining Company Limited](#))
- Federation Mine ([Aurelia Metals Limited](#))
- Mineral Hill Mine ([Kingston Resources Limited](#))
- Peak Mine ([Aurelia Metals Limited](#))
- Tritton Operations ([Aeris Resources Limited](#))
- Woodlawn Zinc-Copper Mine ([DEVELOP Global Limited](#))

# NSW copper projects and operating mines



## Projects in development

- Bushranger Copper-Gold Project ([Xtract Resources PLC](#)) ^
- Canbelego Copper Project ([Helix Resources Limited](#)) ^
- Cangai Copper Project ([Infinity Mining Limited](#)) ^
- Collerina Project ([Helix Resources Limited](#)) ^
- Constellation Project - Tritton Operations ([Aeris Resources Limited](#)) #
- Copper Hill Project ([Golden Cross Resources Limited](#)) ^
- Drake Project ([Legacy Minerals Holdings Limited](#)) ^
- Gilmore Copper-Gold Project ([LinQ Minerals Limited](#)) \*
- Koonenberry Project ([G11 Resources Limited](#)) ^
- Myall Copper-Gold Project ([Magmatic Resources Limited](#)) ^
- Northern Molong Porphyry Project - Boda-Kaiser ([Alkane Resources Ltd](#)) ^
- South Cobar Copper Project ([Peel Mining Limited](#)) ^
- Spur Gold-Copper Project ([Waratah Minerals Limited](#)) ^
- Tottenham Project ([Locksley Resources Limited](#)) ^
- Yeoval Porphyry Project ([Godolphin Resources Limited](#)) ^

# NSW gold projects and operating mines

## Projects in development

- Bushranger Copper-Gold Project ([Xtract Resources PLC](#)) ^
- Myall Copper-Gold Project ([Magmatic Resources Limited](#)) ^
- Northern Molong Porphyry Project - Boda-Kaiser ([Alkane Resources Ltd](#)) ^
- Sofala Gold Project ([MinRex Resources Limited](#)) ^
- Spur Gold-Copper Project ([Waratah Minerals Limited](#)) ^
- Yeoval Porphyry Project ([Godolphin Resources Limited](#)) ^
- Gilmore Copper-Gold Project ([LinQ Minerals Limited](#)) \*
- Kempfield Polymetallic Project ([Argent Minerals Limited](#)) ^
- Lewis Ponds Project ([Godolphin Resources Limited](#)) ^
- Cobar Gold Project ([Helix Resources Limited](#)) ^
- Mt Boppy Gold Project ([Manuka Resources Limited](#)) \*
- South Cobar Copper Project ([Peel Mining Limited](#)) ^
- Cowarra Gold Project ([Oxley Resources Limited](#)) ^
- Mt Adrah Gold Project ([Wildcat Resources Limited](#)) ^
- Drake Project ([Legacy Minerals Holdings Limited](#)) ^
- Hillgrove Gold-Antimony Project ([Larvotto Resources Limited](#)) #

## Operating mines

- Cadia Valley Operations ([Newmont Corporation](#))
- Challenger Gold Mine ([Great Divide Mining Limited](#))
- Cowal Gold Mine ([Evolution Mining Limited](#))
- Mineral Hill Mine ([Kingston Resources Limited](#))
- Northparkes Operations ([Evolution Mining Limited](#))
- Peak Mine ([Aurelia Metals Limited](#))
- Reward Gold Mine ([Vertex Minerals Limited](#))
- Tomingley Gold Mine ([Alkane Resources Ltd](#))

### Project stage

# Approved development (development consent)


\* New or expansion project in development

^ Advanced exploration

Mac Arc

Cobar

# Northern Molong Porphyry Project (Boda – Kaiser)

Company	Alkane Resources Ltd
Commodities	
Project stage	Advanced exploration Scoping study completed (July 2024)
Mineral rights	Exploration licences
Mineral resource (additional detail)	The Boda District (Boda-Kaiser) has a global resource of:  <b>TOTAL: 796Mt at 0.58g/t AuEq* for 14.7Moz AuEq* (0.33g/t Au, 0.18% Cu, 8.3Moz Au, 1.5Mt Cu)</b>
More information	<a href="http://alkane.com.au">alkane.com.au</a>

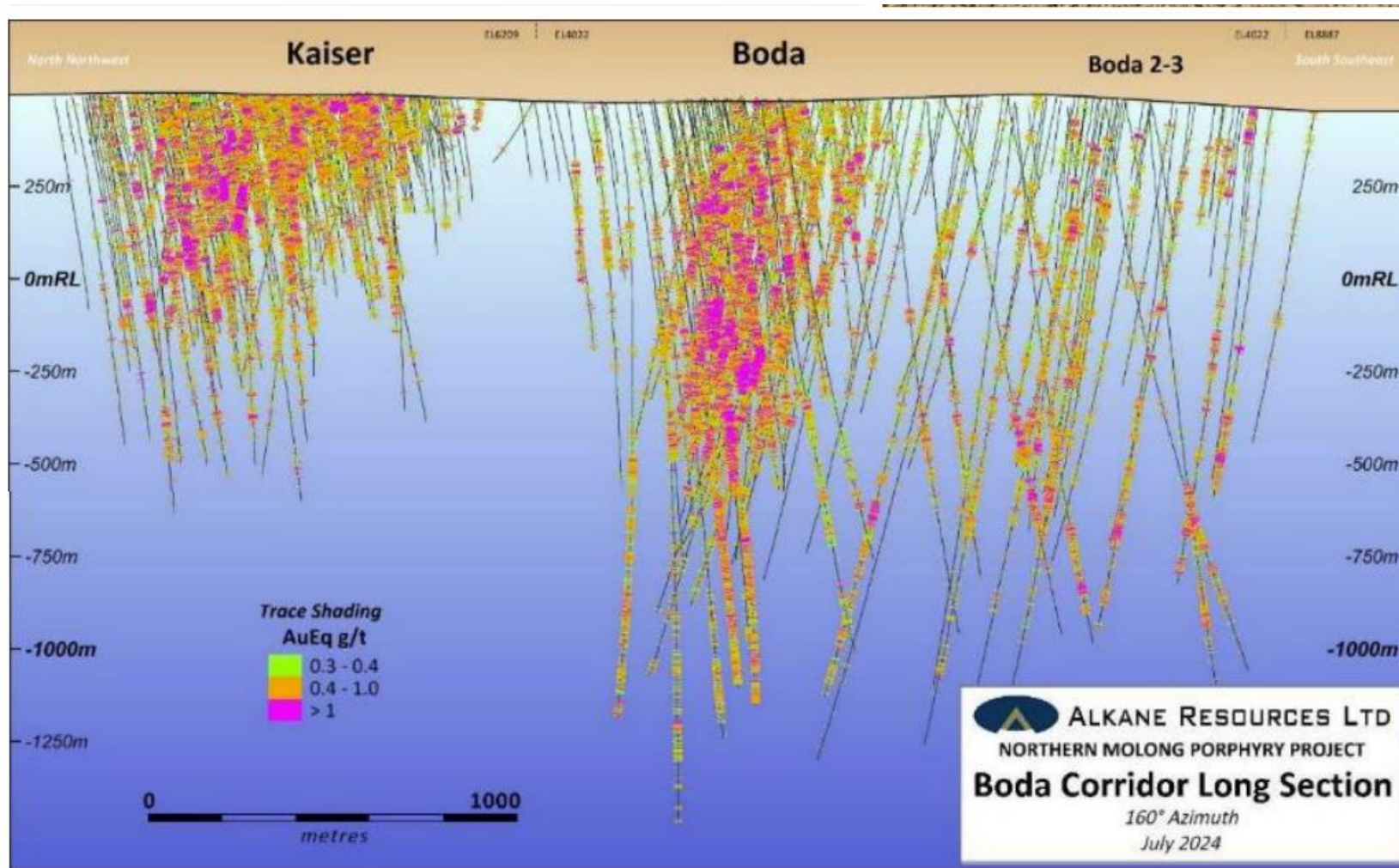
- Strong potential to be a large Tier-1 copper-gold project
- Large mineralised corridor of up to 5 km long
- Initial inferred MRE for the Boda and Kaiser gold-copper deposits (collectively the NMPP) is 14.7 Moz Au equivalent

JORC mineral resource (May 2024)

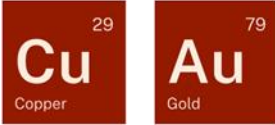
Boda		
Tonnage	583	Mt
AuEq.	0.58	g/t
AuEq. contained	10.9	Moz
Kaiser		
Tonnage	213	Mt
AuEq.	0.55	g/t
AuEq. contained	3.74	Moz



# Northern Molong Porphyry Project (Boda – Kaiser)



# Constellation Project (Tritton Operations)

Company	Aeris Resources
Commodities	
Project stage	Construction
Planning stage	Development consent granted (December 2025)
Processing capacity	Processing to be at the Tritton Operations mill – 1.8 Mtpa capacity
More information	<a href="http://aerisresources.com.au">aerisresources.com.au</a>

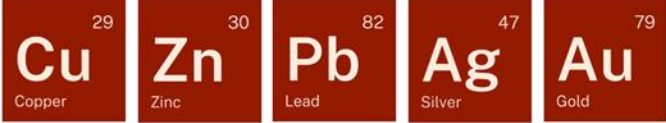
- Future baseload feed for Tritton mill
- March 2025 MRE represents a 24% increase in contained copper and 29% increase in contained gold on 2022 MRE
- Constellation deposit remains open down-plunge, with strong potential for further growth
- Project approved in December 2025. Production scheduled for end-2026.

JORC mineral resource (Mar 2025)

Tonnage	7.6	Mt
Copper	2.01	%
Gold	0.66	g/t
Silver	2.5	g/t
Copper metal	153,000	t
Gold metal	161,000	oz
Silver metal	608,000	oz



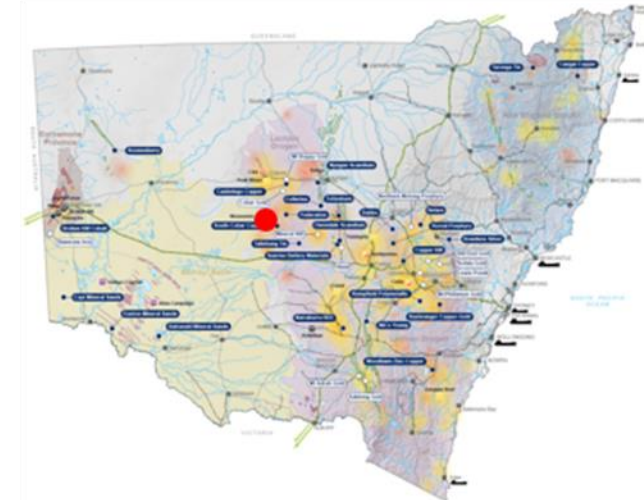
# South Cobar Copper Project

Company	Peel Mining Limited  (NewCo being formed following Peel being acquired by Aeris Resources in Feb 2026)
Commodities	
Project stage	Advanced exploration - resource growth and scoping
Mineral rights	Exploration licences
Contained metals	216 kt Cu, 22 Moz Ag, 322 kt Zn, 151 kt Pb, 204 koz Au
Acquisition details	<p>Aeris Resources to acquire 100% of Peel Mining shares and own the Mallee Bull and Wirlong deposits.</p> <p>Peel's Wagga Tank, May Day and Southern Nights deposits to be demerged into a new entity (NewCo).</p> <p>Scheme to be closed by July 2026.</p>
More information	<a href="http://peelmining.com.au">peelmining.com.au</a>


- Located in the world-class Cobar region, one of Australia's prominent polymetallic regions
- Defined resources for all the project's 4 deposits, with expanding copper-rich resources
- High-grade copper project
- Excellent infrastructure: road, rail, power and communications

JORC mineral resource (Jan 2023)

Tonnage	19,75	Mt
Copper	1.09	%
Silver	35	g/t
Zinc	1.63	%
Lead	0.76	%
Gold	0.32	g/t



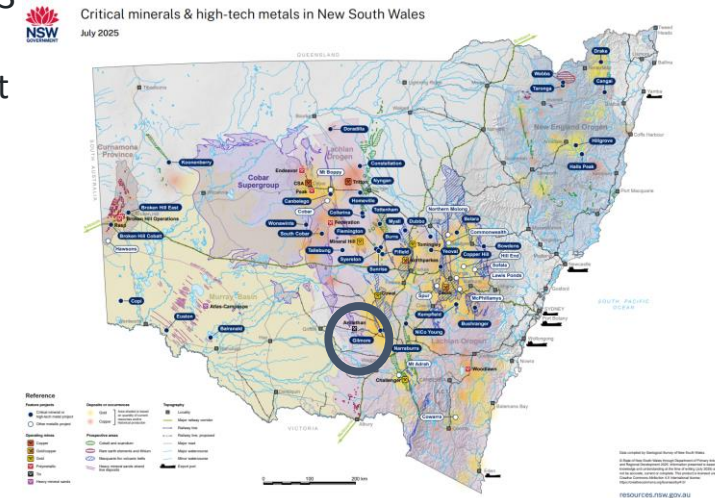
# Gilmore Copper-Gold Project

Company	LinQ Minerals Limited (ASX:LNQ)
Commodities	
Project stage	Resource definition / feasibility
Mineral rights	Exploration licences Mining lease
Current resources	Global MRE: 516Mt containing ~3.7Moz Au and ~1.2Mt Cu (6 deposits)
More information	<a href="http://linqminerals.com">linqminerals.com</a>

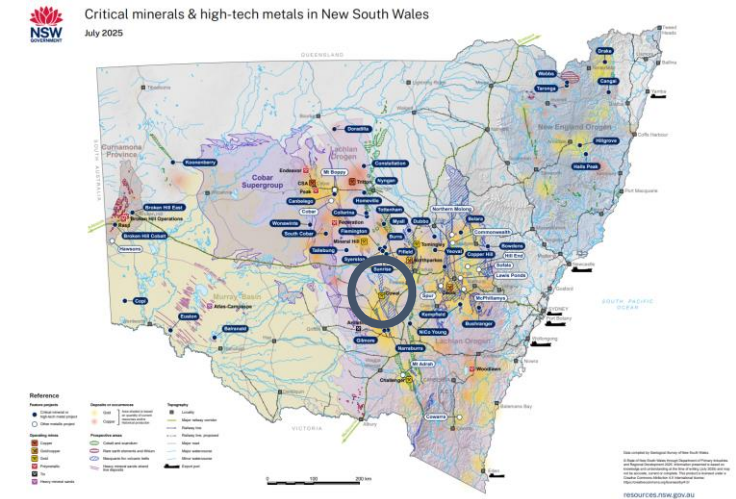
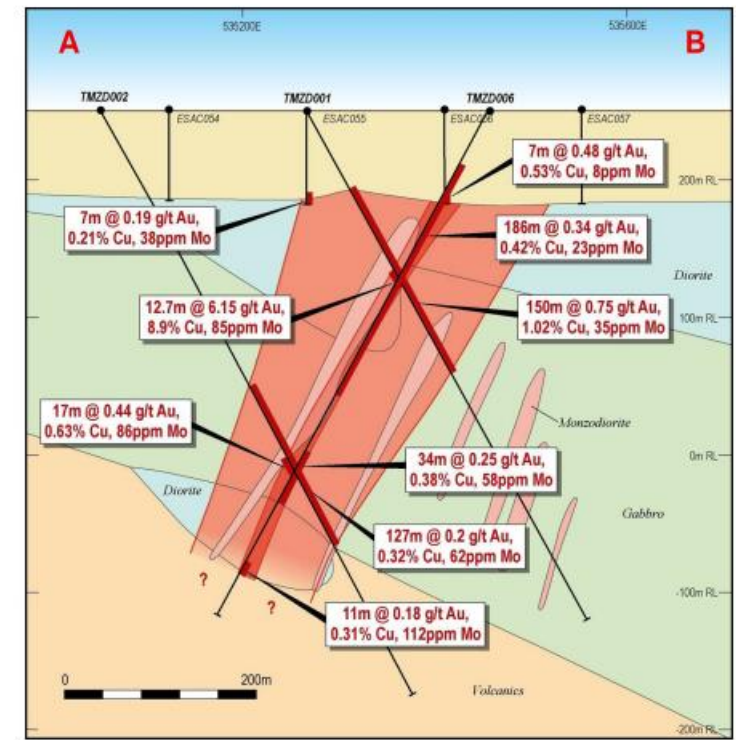
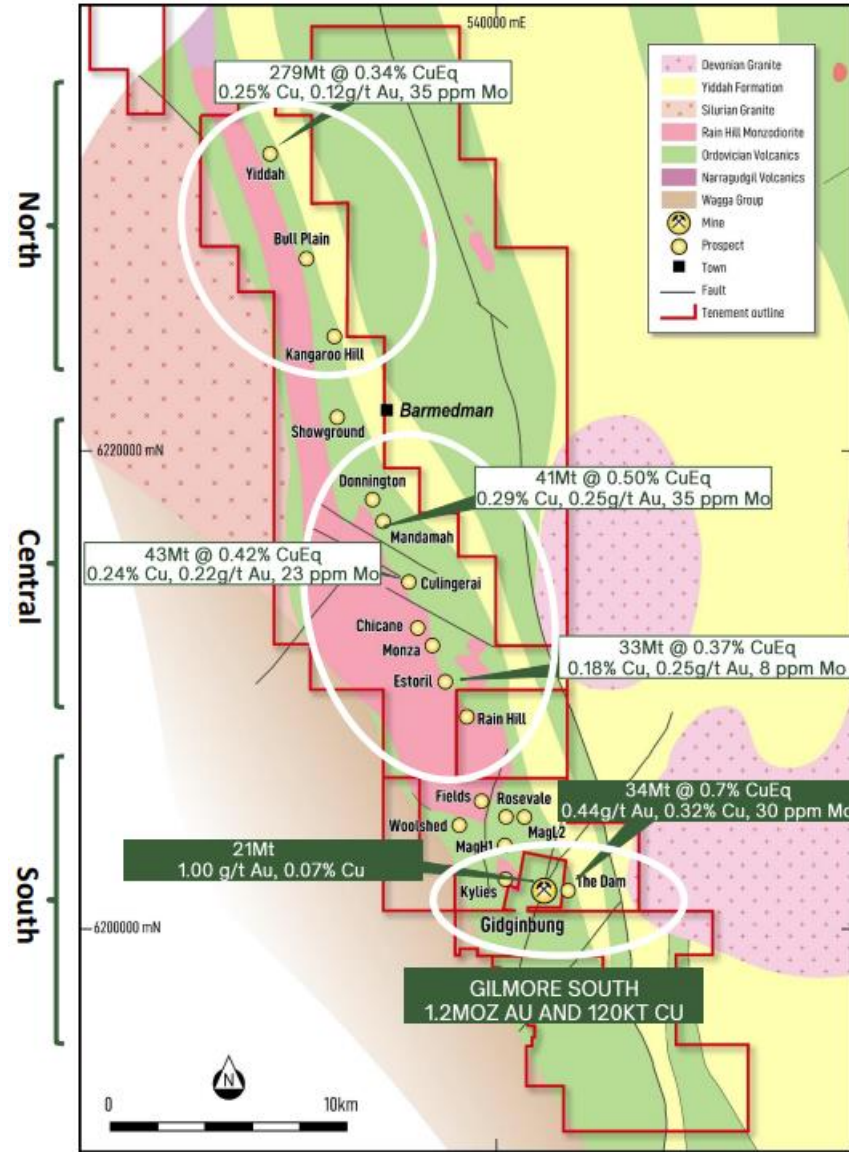
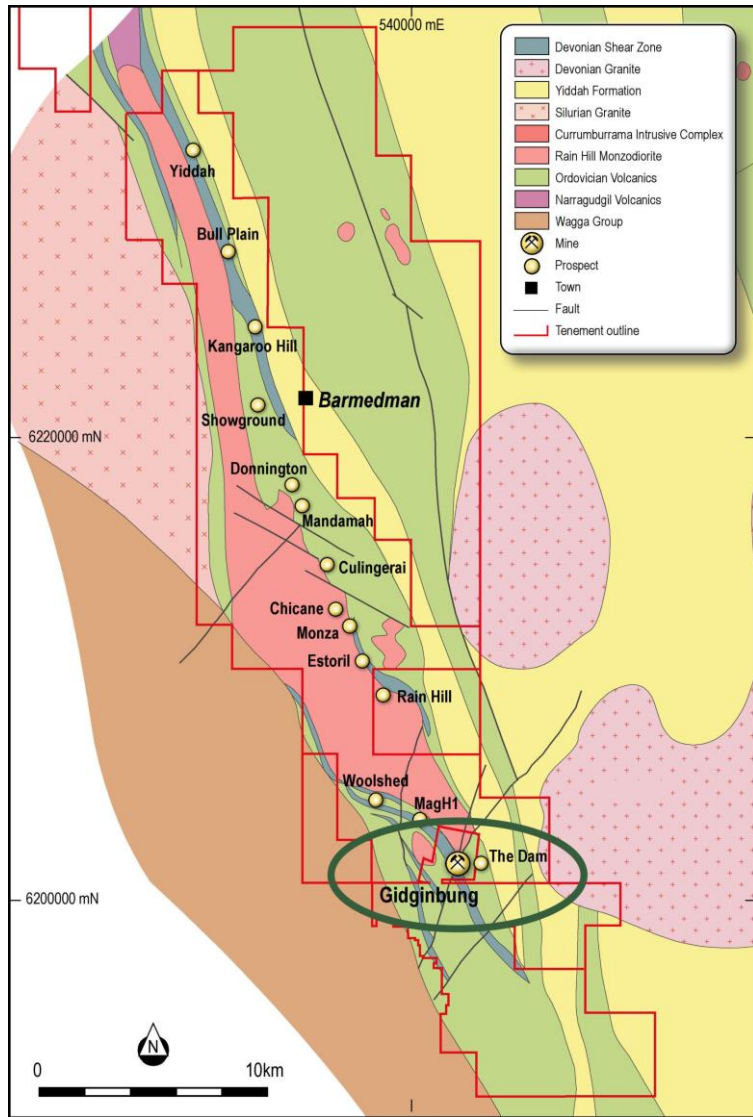
- A large-scale copper-gold project located in the well-endowed Macquarie Arc - host to numerous Tier 1 gold and copper projects.
- Available infrastructure – power, road, rail, water and skilled workforce.
- Strike length of ~40 kms containing 3 zones of identified porphyry and epithermal mineralised systems that remain open and scalable.

## JORC mineral resource – Global MRE (2024)

Total resource	515.7	Mt
Copper Eq	1,780	kt
Copper	1,180	kt
Gold	3,660	koz

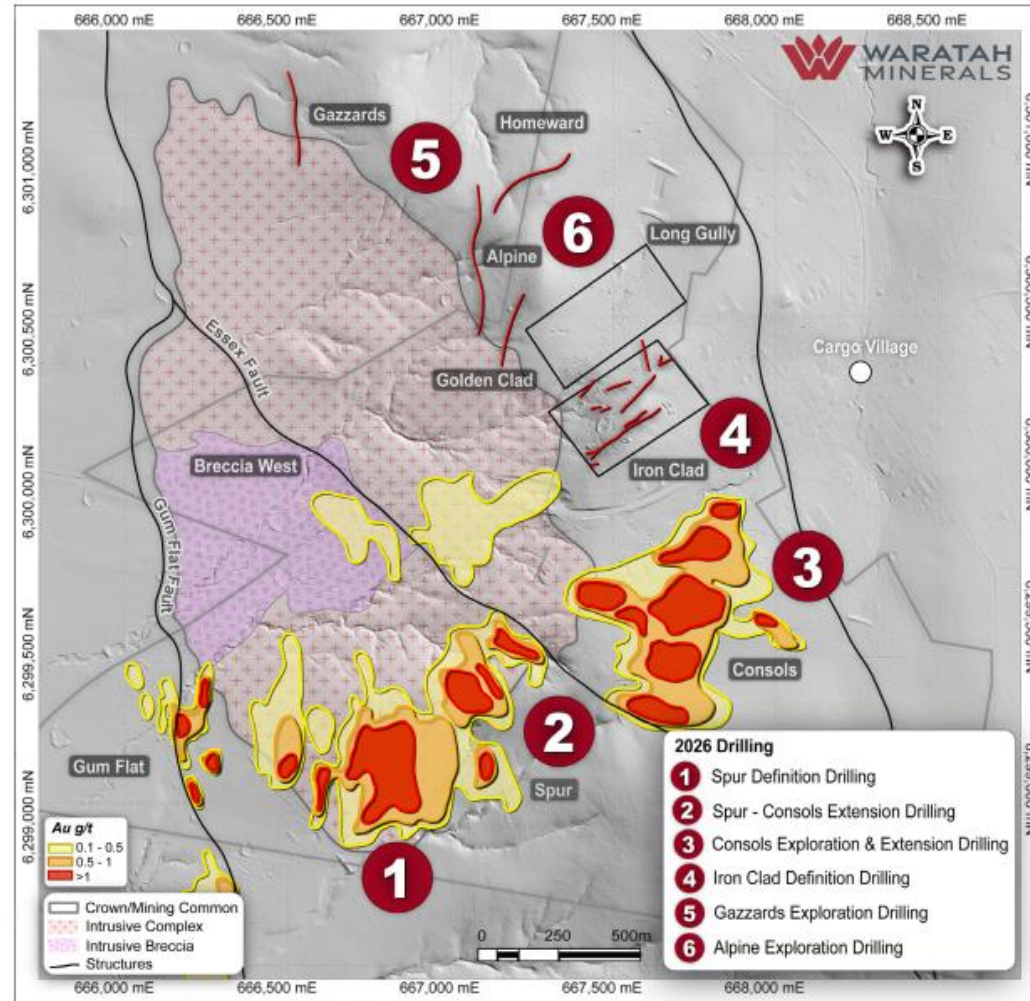
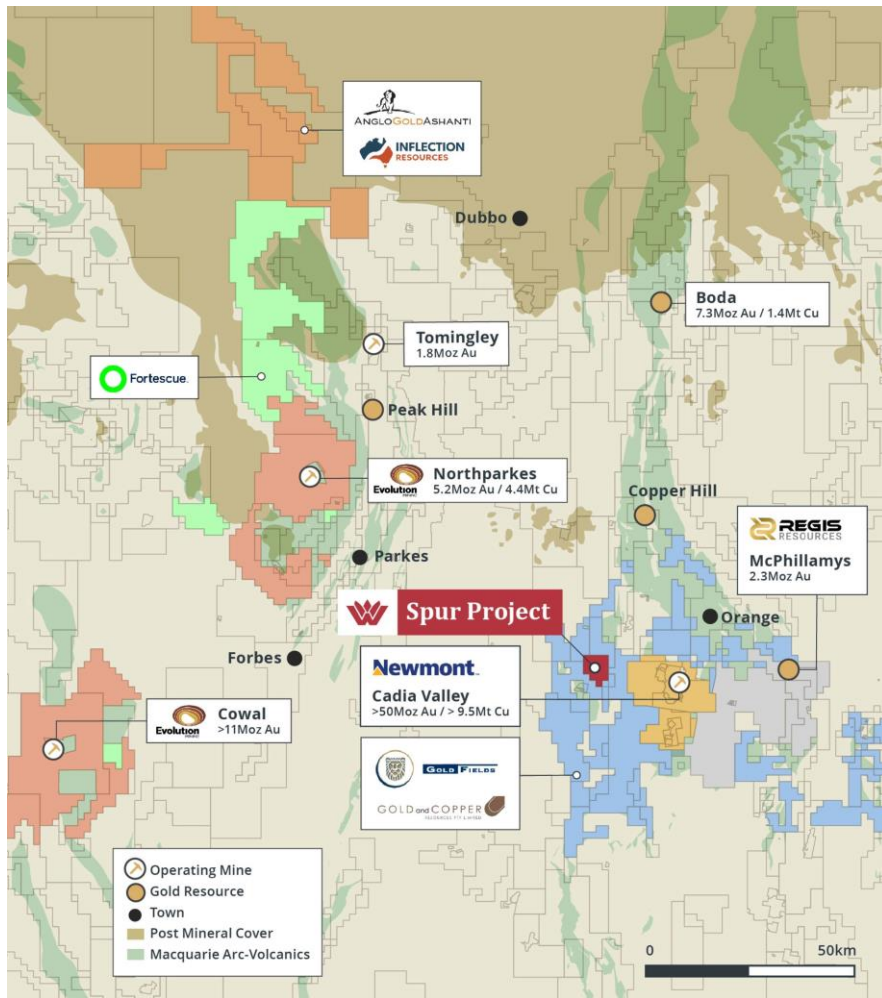


# Gilmore Copper-Gold Project



# Spur Discovery. Waratah Minerals

# Core shack #3119A



**SPD020:**  
1.55m @ 14.79g/t  
from 243m

**SPD020:**  
1m @ 4.9g/t  
from 263m

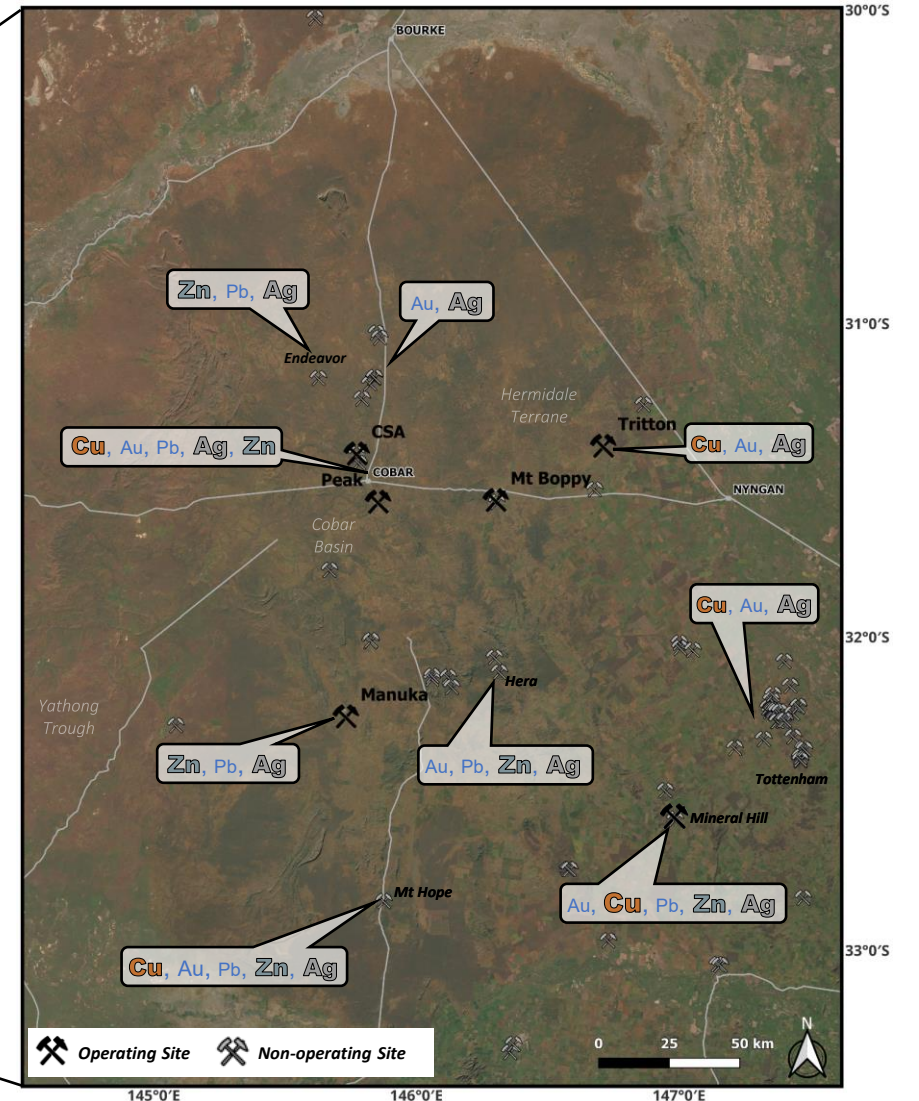


# Cobar Basin



**Cu, Ag** and **Zn** are a focus of NSW Government's new "Critical Minerals and High-Tech Metals Strategy"

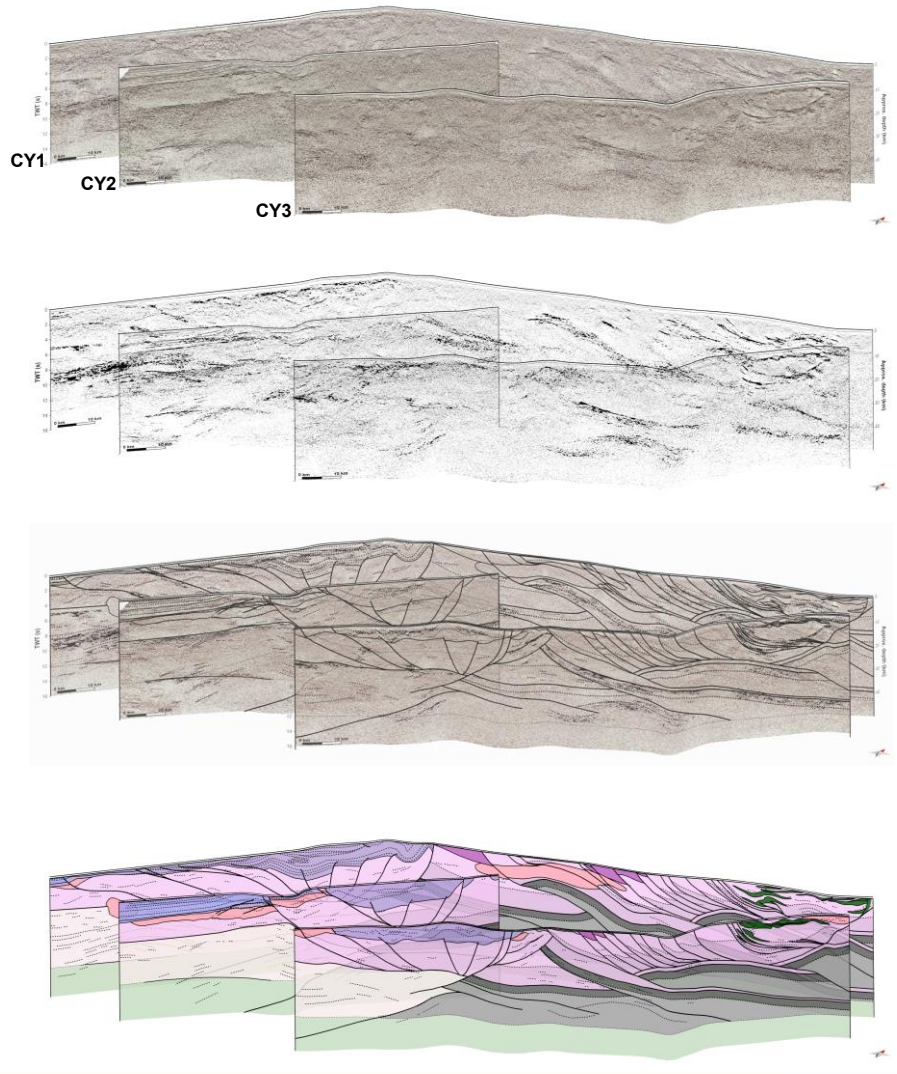
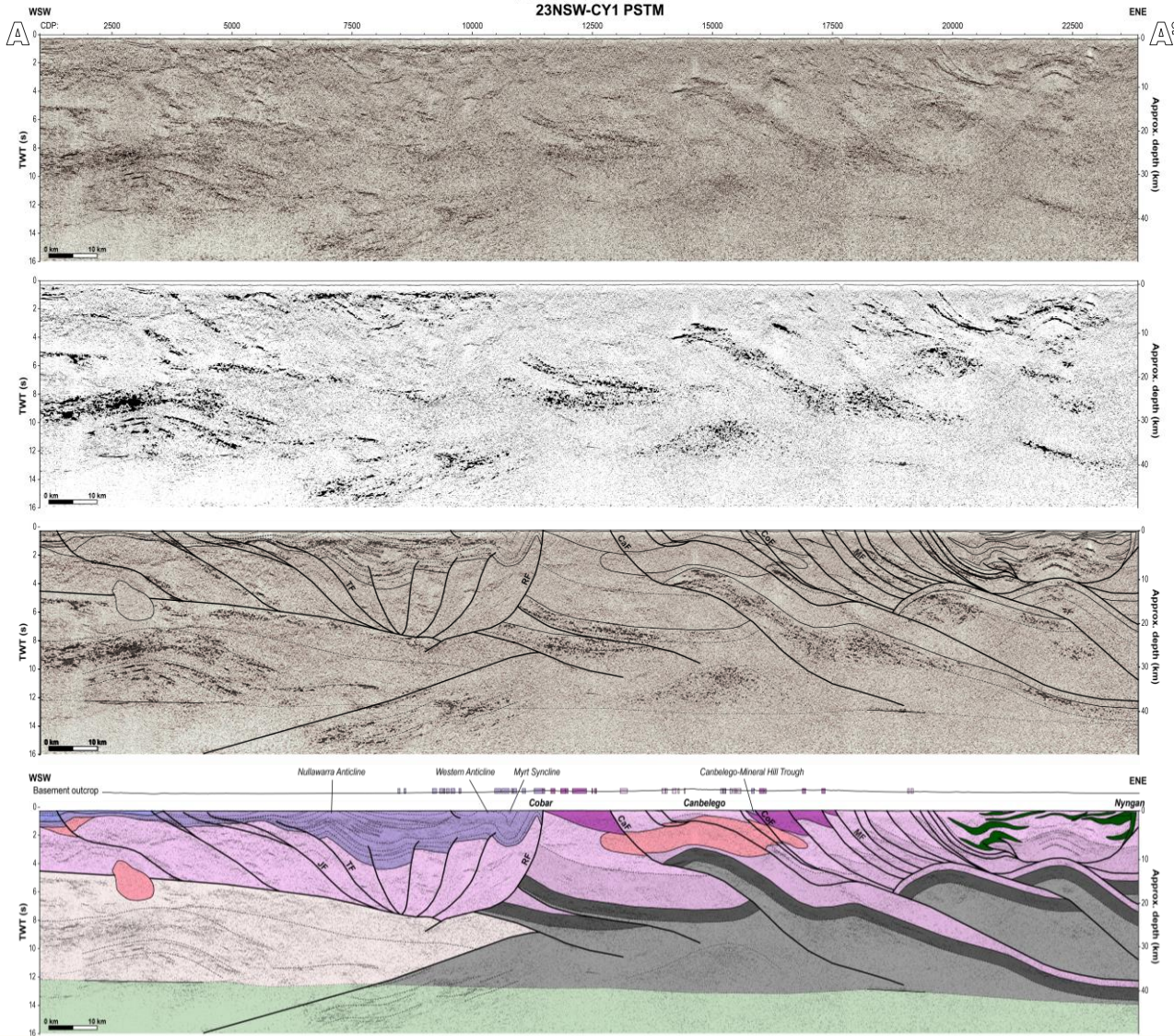
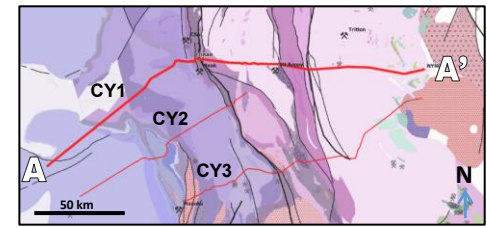
(DPIRD, 2024)



*Distribution of metals in mined deposits*

# Seismic interpretation

## Interpretation of the 2023 Cobar–Yathong Seismic Survey



### Structure

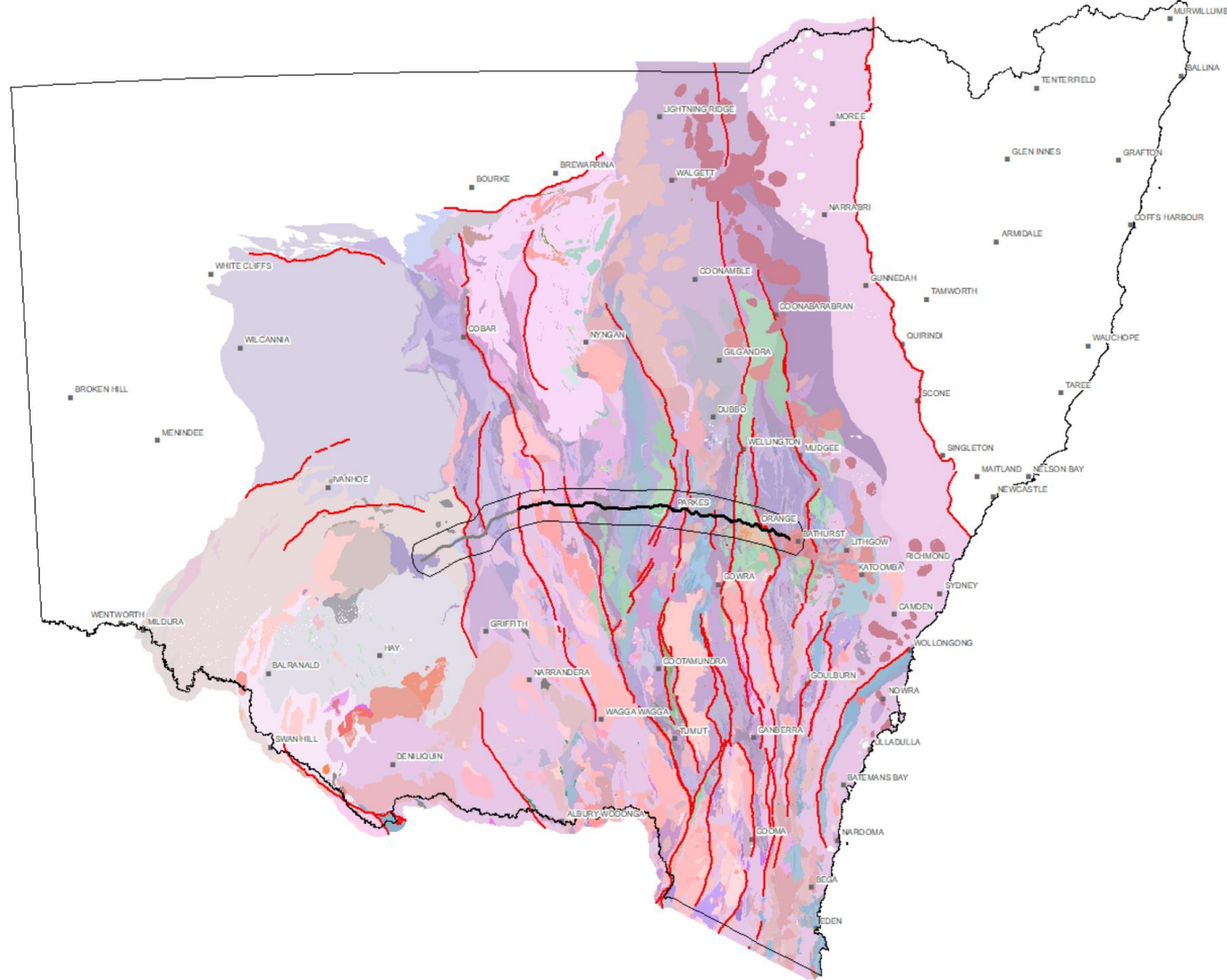
- RF Rookery Fault
- CaF Canbelego Fault
- CoF Coonara Fault
- MF Muriel Fault
- TF Thule Fault
- DTF Dusty Tank Fault
- BMF Blue Mountain Fault
- JF Jackermaroo Fault

### Stratigraphy

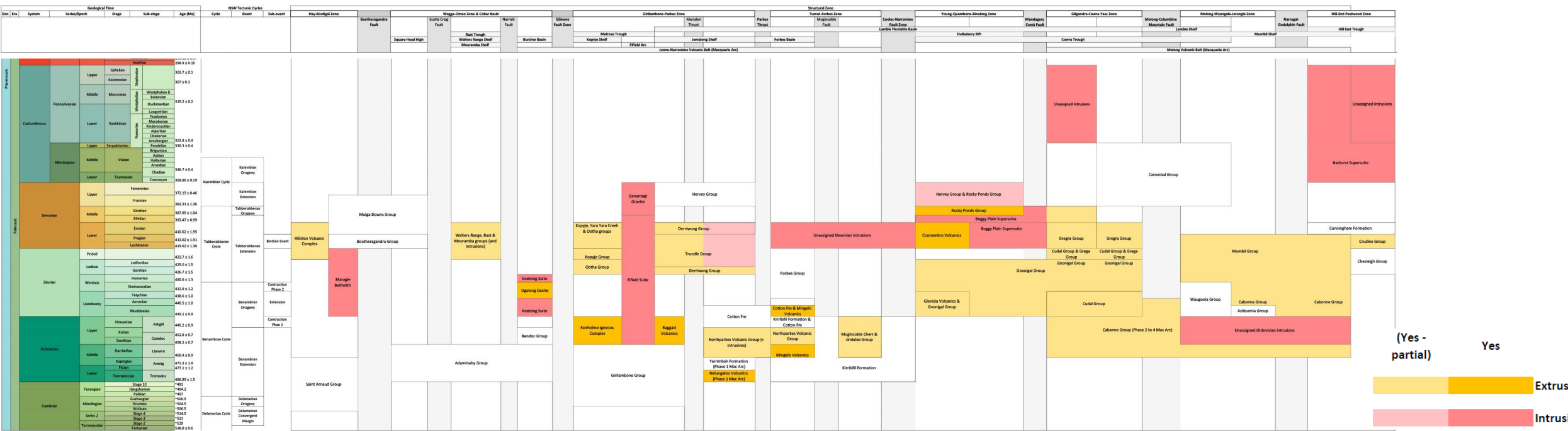
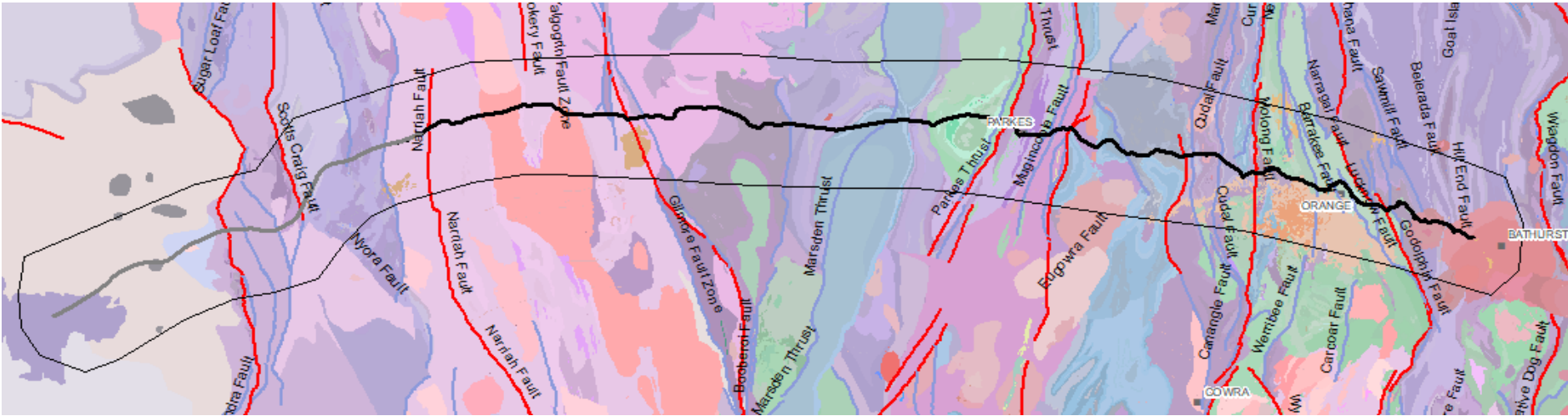
- Mulga Downs Group (undiff.)
- Cobar Supergroup (undiff.)
- Granite (undiff.)
- Major igneous bodies incl. Fifield Suite
- Ballast Formation - Girilambone Group
- Girilambone/Adaminaby groups (undiff.)
- Girilambone Group (Cambrian)
- Continental and/or transitional crust (?)
- Uppermost oceanic crust (?)
- Sub-uppermost oceanic crust (?)
- Mantle

Looking towards NNW

# Seismic acquisition is driving a new geological understanding



# NSW Seamless Geology – igneous attribution



AUSTRALIA  MINERALS

REALISE THE OPPORTUNITY

# The Macquarie Arc and beyond— copper and gold opportunities in NSW

Dr Phillip Blevin  
Chief Geoscientist & Head  
Geological Survey of New South Wales



# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## Australia's predicted endowment of critical mineral byproducts

Anthony Schofield  
Director, Mineral Potential of Australia  
Geoscience Australia



**Australian Government**  
**Geoscience Australia**

1 <b>H</b> hydrogen P	
3 <b>Li</b> lithium P	4 <b>Be</b> beryllium P
11 <b>Na</b> sodium P	12 <b>Mg</b> magnesium P
19 <b>K</b> potassium-potash P	20 <b>Ca</b> calcium P
37 <b>Rb</b> rubidium B	38 <b>Sr</b> strontium B
55 <b>Cs</b> cesium B	56 <b>Ba</b> barium P, C
87 <b>Fr</b> francium	88 <b>Ra</b> radium B

atomic # → 23  
 atomic symbol → V  
 element name - qualification → vanadium  
 P, C, B ← extracted as primary (P), co (C) - and/or by (B) - product

### Frequency on eight critical/strategic mineral/raw material lists



21 <b>Sc</b> scandium C, B	22 <b>Ti</b> titanium P, C	23 <b>V</b> vanadium P, C, B	24 <b>Cr</b> chromium P	25 <b>Mn</b> manganese P	26 <b>Fe</b> iron P	27 <b>Co</b> cobalt P, C, B	28 <b>Ni</b> nickel P, C	29 <b>Cu</b> copper P, C	30 <b>Zn</b> zinc P, C
39 <b>Y</b> yttrium C, B	40 <b>Zr</b> zirconium P, C	41 <b>Nb</b> niobium C, B	42 <b>Mo</b> molybdenum P, C, B	43 <b>Tc</b> technetium	44 <b>Ru</b> ruthenium B	45 <b>Rh</b> rhodium B	46 <b>Pd</b> palladium P, C, B	47 <b>Ag</b> silver P, C, B	48 <b>Cd</b> cadmium B
71 <b>Lu</b> lutetium B	72 <b>Hf</b> hafnium C, B	73 <b>Ta</b> tantalum P, C, B	74 <b>W</b> tungsten P, C	75 <b>Re</b> rhenium B	76 <b>Os</b> osmium B	77 <b>Ir</b> iridium B	78 <b>Pt</b> platinum P, C, B	79 <b>Au</b> gold P, C, B	80 <b>Hg</b> mercury B
103 <b>Lr</b> lawrencium	104 <b>Rf</b> rutherfordium	105 <b>Db</b> dubnium	106 <b>Sg</b> seaborgium	107 <b>Bh</b> bohrium	108 <b>Hs</b> hassium	109 <b>Mt</b> meitnerium	110 <b>Ds</b> darmstadtium	111 <b>Rg</b> roentgenium	112 <b>Cn</b> copernicium

5 <b>B</b> boron P	6 <b>C</b> carbon-graphite P	7 <b>N</b> nitrogen	8 <b>O</b> oxygen	9 <b>F</b> fluorine P, C	10 <b>Ne</b> neon B
13 <b>Al</b> aluminum P	14 <b>Si</b> silicon P	15 <b>P</b> phosphorus P, C	16 <b>S</b> sulfur C, B	17 <b>Cl</b> chlorine P	18 <b>Ar</b> argon
31 <b>Ga</b> gallium B	32 <b>Ge</b> germanium B	33 <b>As</b> arsenic B	34 <b>Se</b> selenium B	35 <b>Br</b> bromine B	36 <b>Kr</b> krypton
49 <b>In</b> indium B	50 <b>Sn</b> tin P, C, B	51 <b>Sb</b> antimony P, C, B	52 <b>Te</b> tellurium B	53 <b>I</b> iodine B	54 <b>Xe</b> xenon
81 <b>Tl</b> thallium B	82 <b>Pb</b> lead P, C	83 <b>Bi</b> bismuth B	84 <b>Po</b> polonium	85 <b>At</b> astatine	86 <b>Rn</b> radon B
113 <b>Nh</b> nihonium	114 <b>Fl</b> flerovium	115 <b>Mc</b> moscovium	116 <b>Lv</b> livermorium	117 <b>Ts</b> tennessine	118 <b>Og</b> oganeson

lanthanides  
(rare earth metals)

actinides

57 <b>La</b> lanthanum P	58 <b>Ce</b> cerium P	59 <b>Pr</b> praseodymium P, C	60 <b>Nd</b> neodymium P, C	61 <b>Pm</b> promethium	62 <b>Sm</b> samarium C, B	63 <b>Eu</b> europium C, B	64 <b>Gd</b> gadolinium C, B	65 <b>Tb</b> terbium C, B	66 <b>Dy</b> dysprosium C, B	67 <b>Ho</b> holmium C, B	68 <b>Er</b> erbium C, B	69 <b>Tm</b> thulium B	70 <b>Yb</b> ytterbium B
89 <b>Ac</b> actinium	90 <b>Th</b> thorium C, B	91 <b>Pa</b> protactinium B	92 <b>U</b> uranium P, C	93 <b>Np</b> neptunium	94 <b>Pu</b> plutonium	95 <b>Am</b> americium	96 <b>Cm</b> curium	97 <b>Bk</b> berkelium	98 <b>Cf</b> californium	99 <b>Es</b> einsteinium	100 <b>Fm</b> fermium	101 <b>Md</b> mendelevium	102 <b>No</b> nobelium

Text coloured by  
source of element

Dark blue - sourced from water  
 Light blue - sourced from air  
 Black & white - mined  
 Grey - synthetically produced

From Britt and Czarnota. A review of critical mineral resources in Australia (2024)

1 <b>H</b> hydrogen P	
3 <b>Li</b> lithium P	4 <b>Be</b> beryllium P
11 <b>Na</b> sodium P	12 <b>Mg</b> magnesium P
19 <b>K</b> potassium-potash P	20 <b>Ca</b> calcium P
37 <b>Rb</b> rubidium B	38 <b>Sr</b> strontium B
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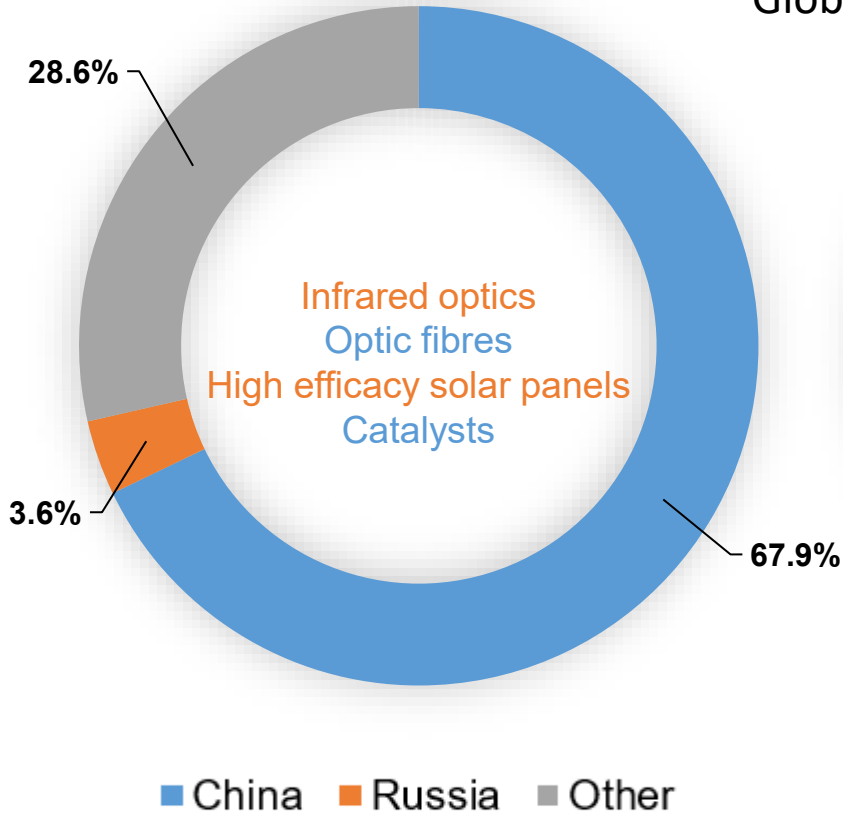
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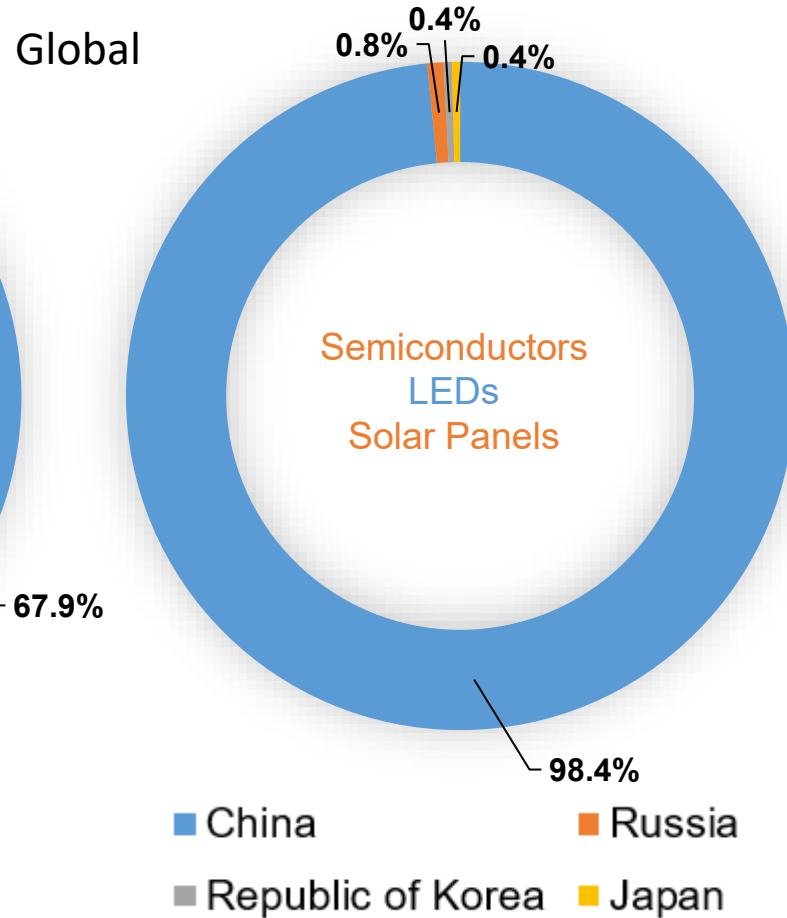
From Britt and Czarnota (2024). A review of critical mineral resources in Australia

# Why gallium, germanium and indium?

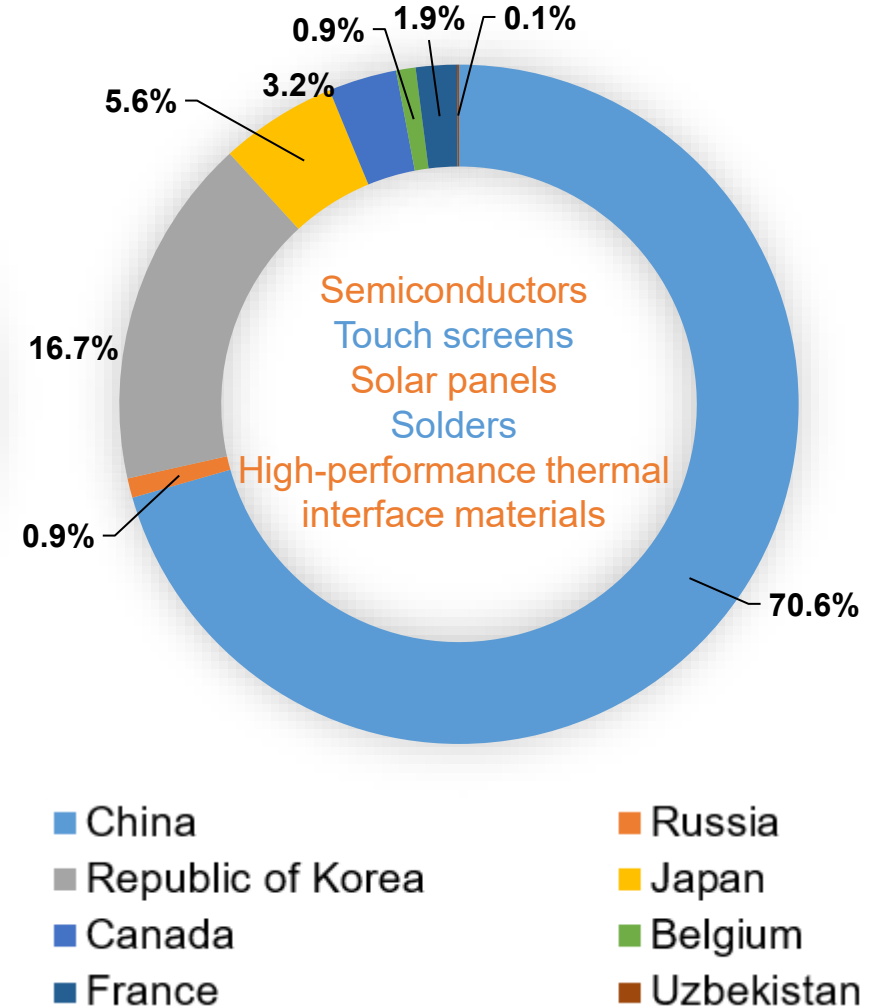
Global germanium production (2020)



Global gallium production (2024)



Global indium production (2024)

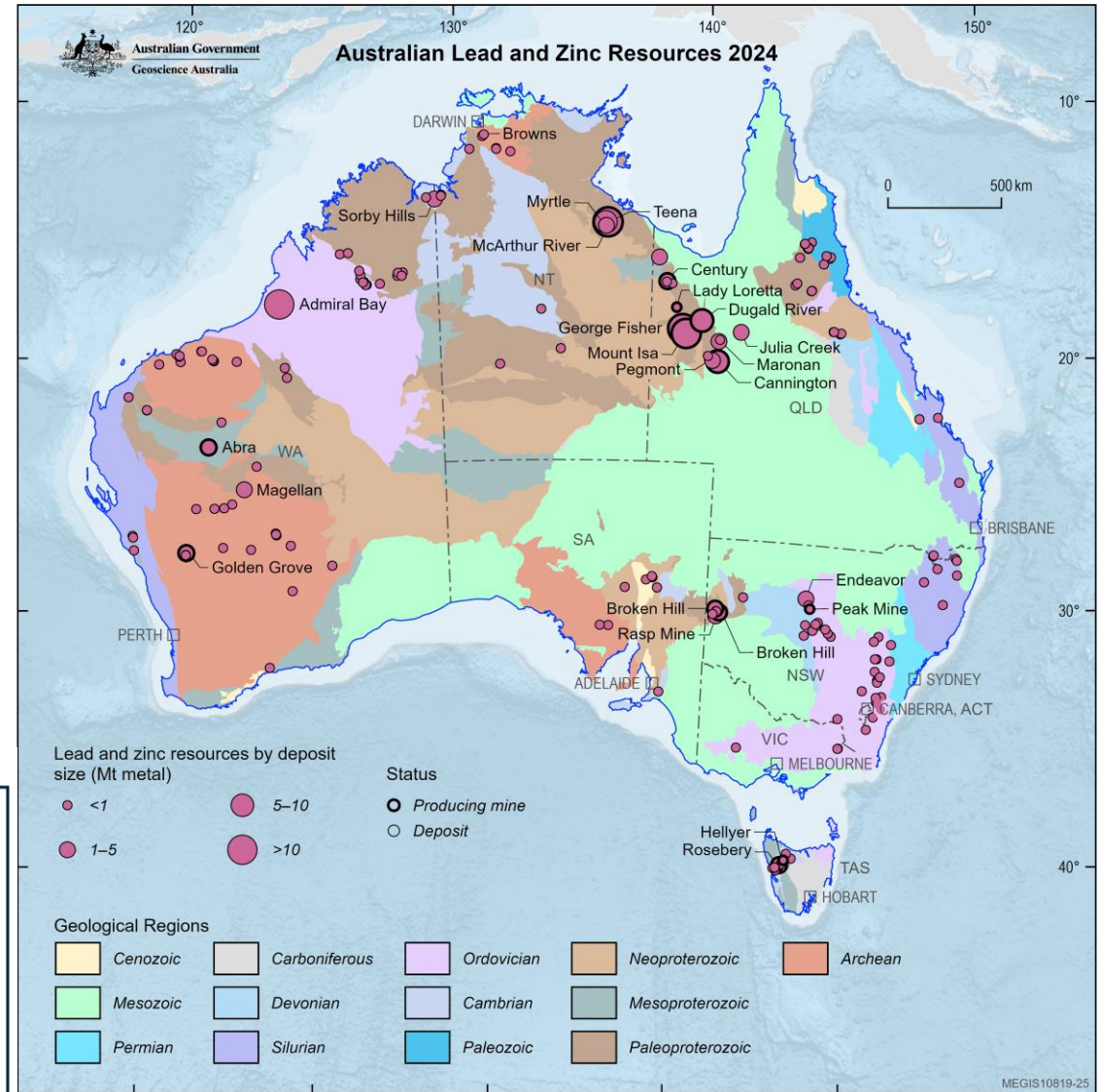


# Australia's missing byproduct potential

- No Economic Demonstrated Resources for Ga, Ge or In
- Ge, Ga and In sourced from zinc ores
- Australia ranked 1 in the world for Zn Resources (27%) and 3 for production (9%)
- Domestic Zn processing capability

What is Australia's endowment?

Which deposits are the best opportunities to provide feedstock for Ga, Ge and In?



# Using geoscience to predict endowment

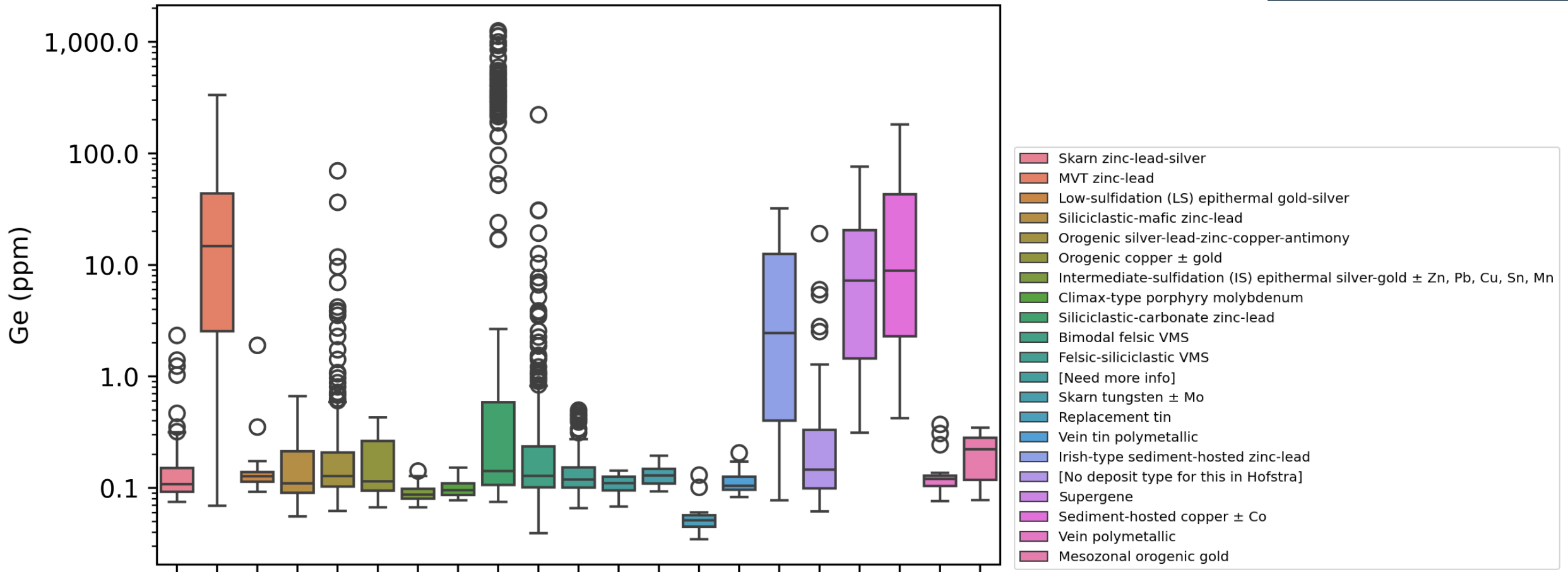
- Comprehensive sampling of Australian Zn deposits
  - 56 deposits sampled
  - 131 whole rock geochemical analyses
  - 2314 sphalerite analyses
- All data freely and publicly available
- New data augmented using the global Critical Minerals in Ores database



Final project delivery in  
March 2026



# Germanium in sphalerite



# Take away messages

- Australia has the deposits to provide critical mineral byproducts
- We have the science to figure out which specific orebodies provide the best opportunity to provide feedstock for processing
- Workflow will be applied to other unreported critical minerals as part of Geoscience Australia's Resourcing Australia's Prosperity initiative

Find out more



Australian critical minerals  
Research and Development Hub



Byproducts project



Critical Minerals in Ores database

# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## Laying the foundations for the next generation of discoveries

The Resourcing Australia's Prosperity initiative

Anthony Schofield  
Director, Mineral Potential of Australia  
Geoscience Australia



**Australian Government**  
**Geoscience Australia**

# What is the Resourcing Australia's Prosperity initiative?

\$3.4 billion, 35 year investment in precompetitive geoscience by the Australian government.



Key objectives:

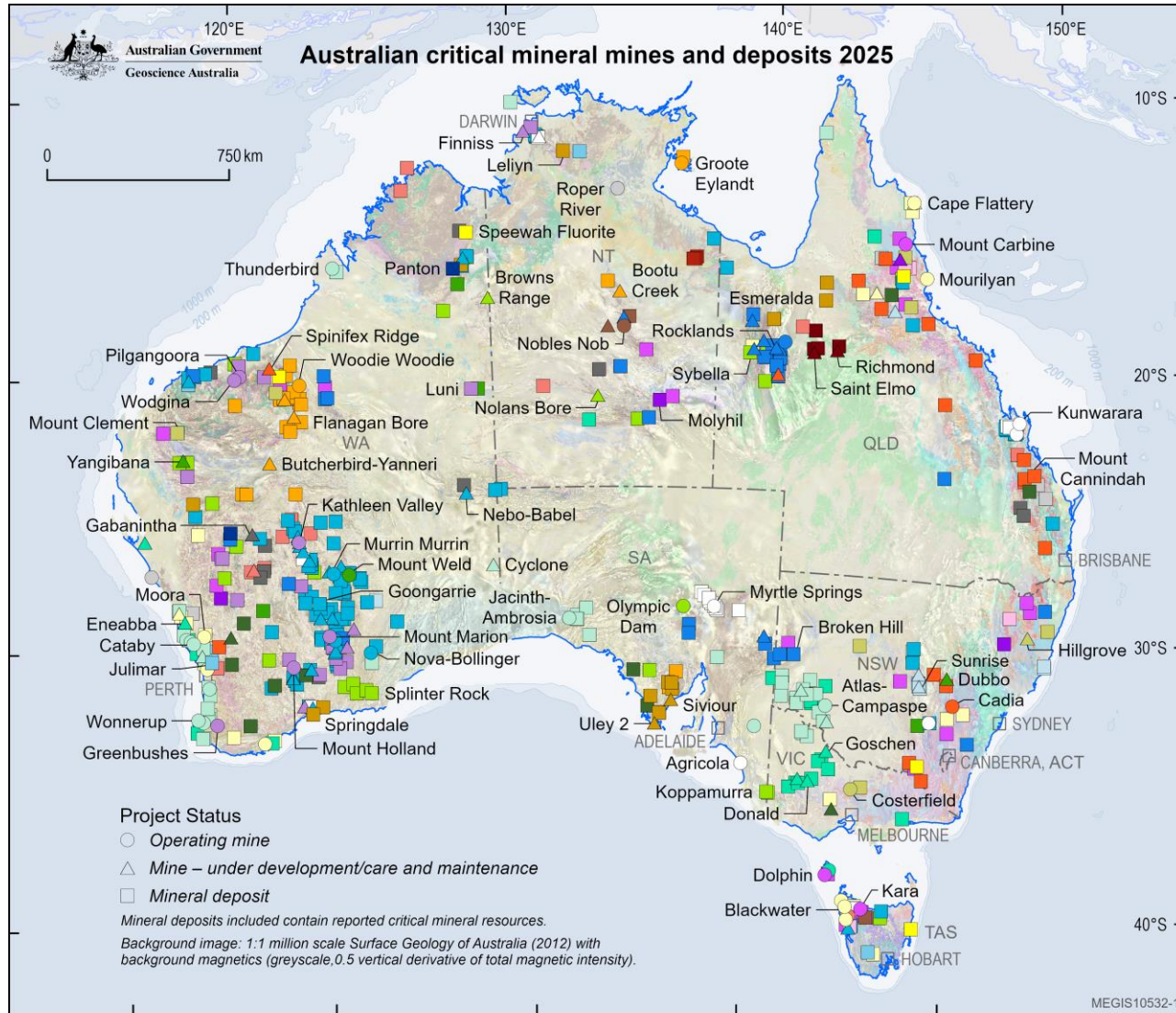
1. Assess national resource potential, mapping all of Australia's critical minerals and strategic materials, and other resources needed to support the energy transition
2. Assess all of Australia's groundwater systems
3. Investigate 12 deep dive regions onshore, with unrealised resource potential
4. 'Complete' Australia-wide geoscience datasets

**Resourcing  
Australia's  
Prosperity**

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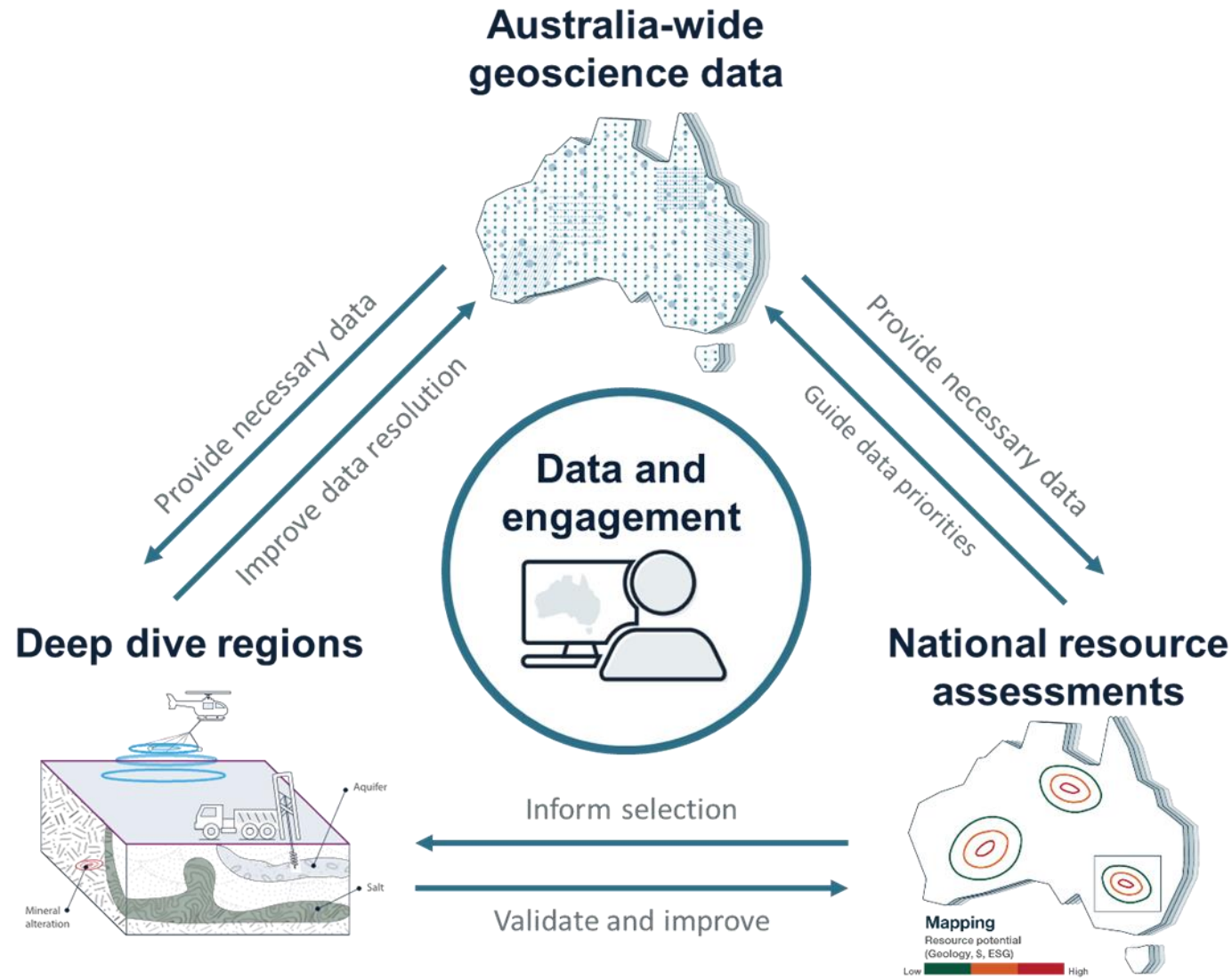
# Why do we need precompetitive geoscience?



## World rankings

- Australia** is now ranked **Number 1** for ilmenite resources with a **51%** share of global resources
- Australia** remained **Number 1** for gold, iron ore, lead, rutile, uranium, zinc, zircon and vanadium resources
- Australia** remained **Number 1** for iron ore, lithium and rutile production

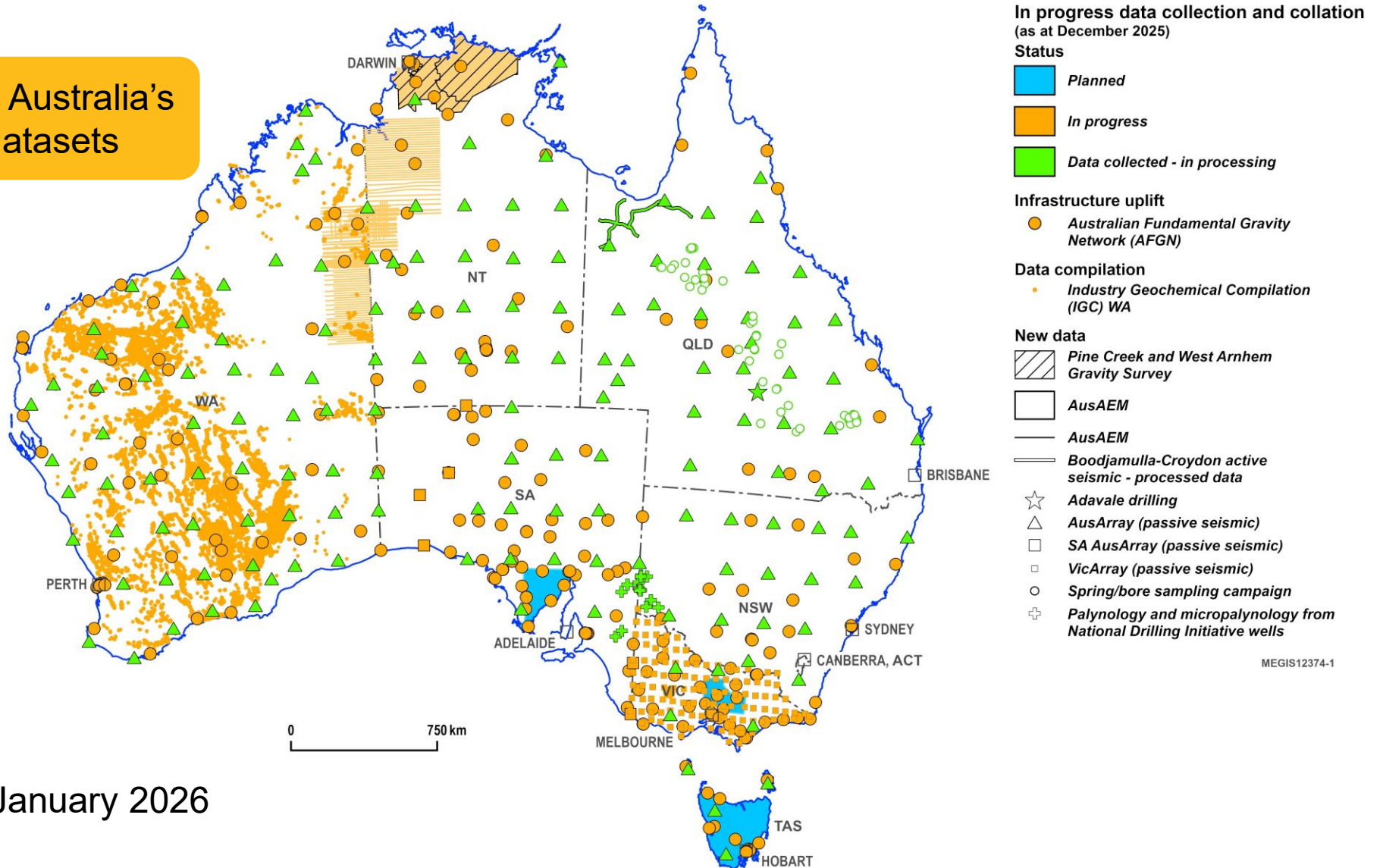
# What will Resourcing Australia's Prosperity do?



Download the 10 year Roadmap

# Geoscience data collection since July 2024

Rapidly expanding Australia's world-leading datasets



Map current January 2026

# New (and some old) geoscience datasets

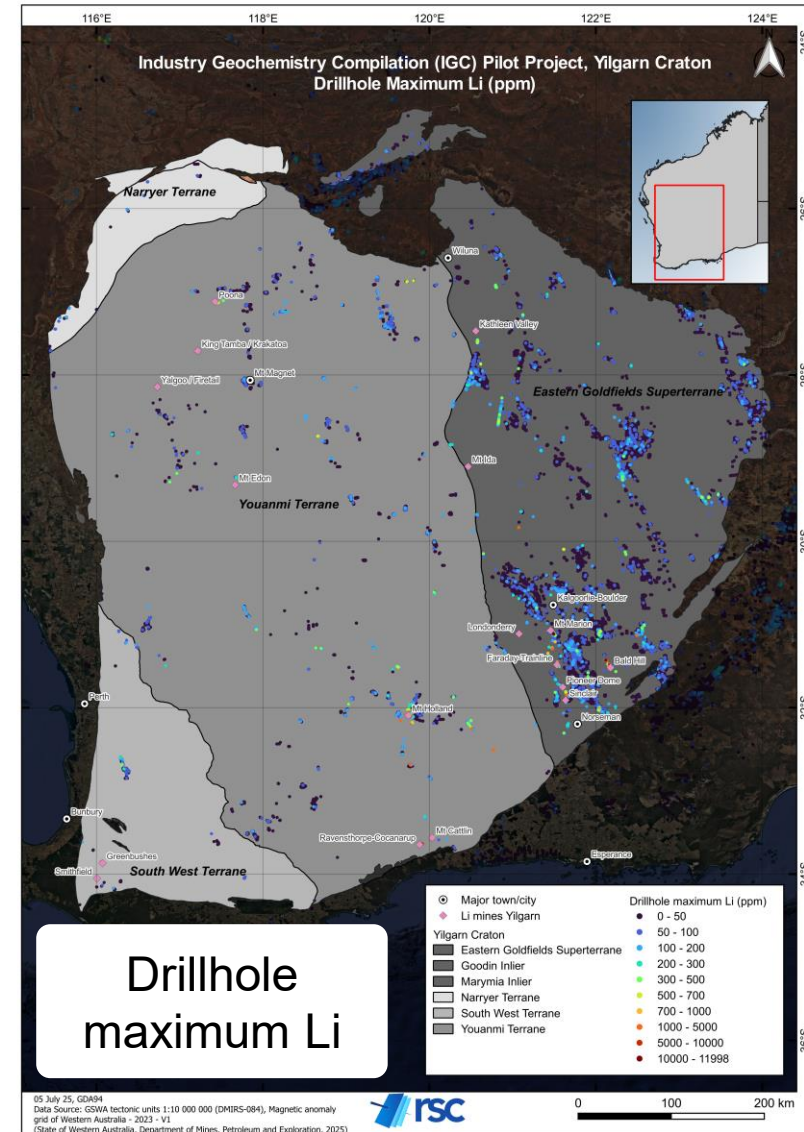
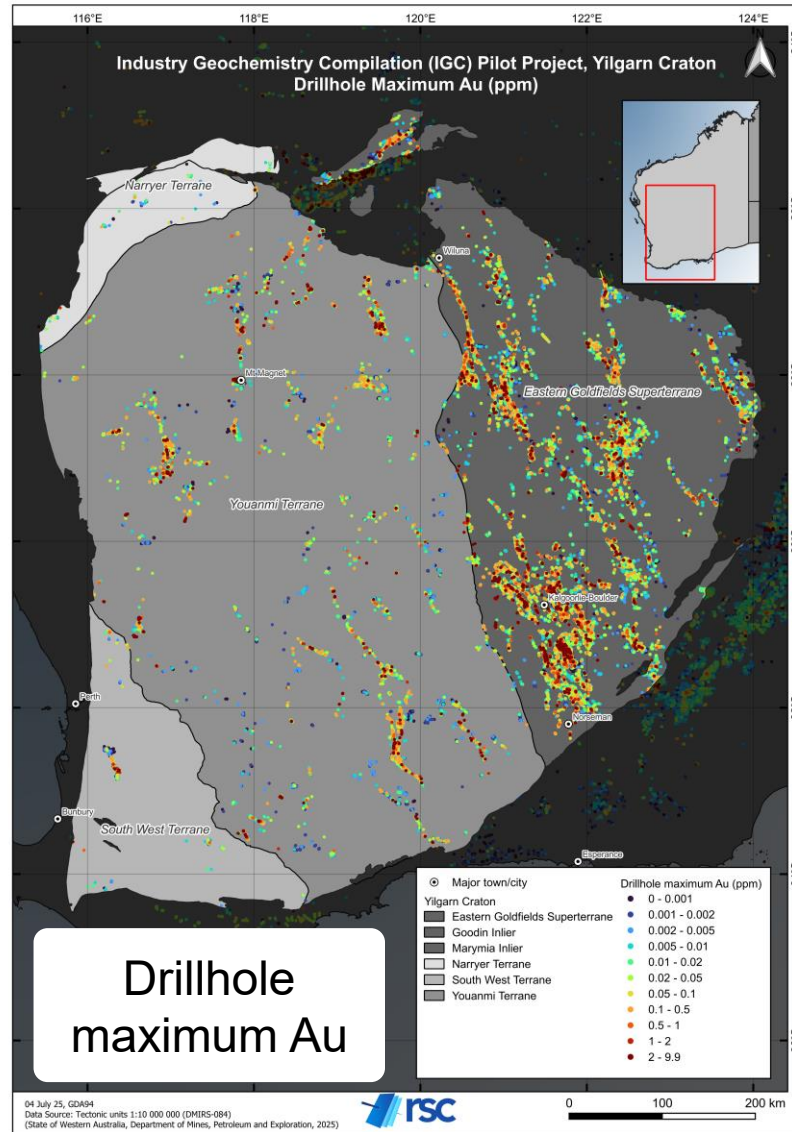
Compilation of high-quality mineral industry geochemical data

Pilot project completed for Western Australia (released January 2026)

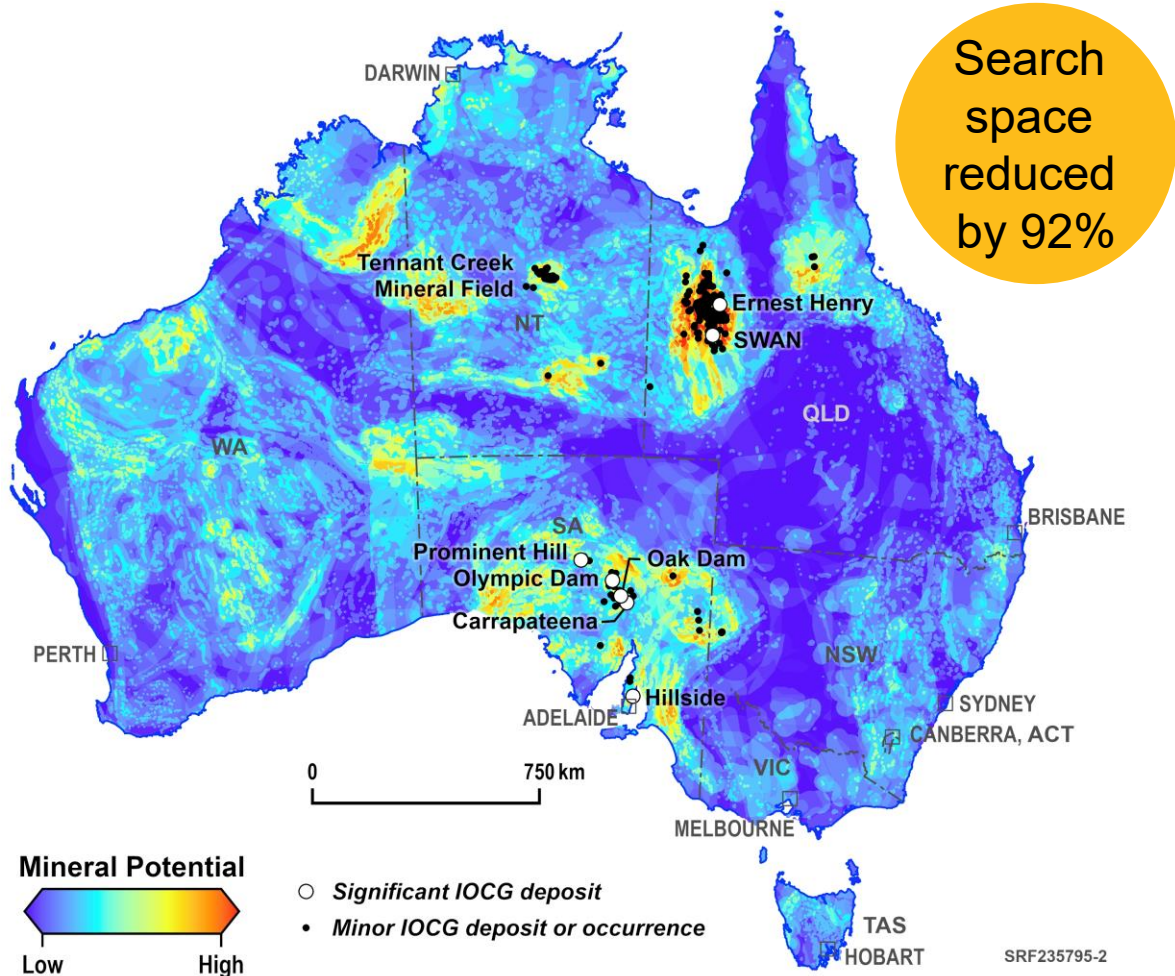
Delivery of national dataset due 2030



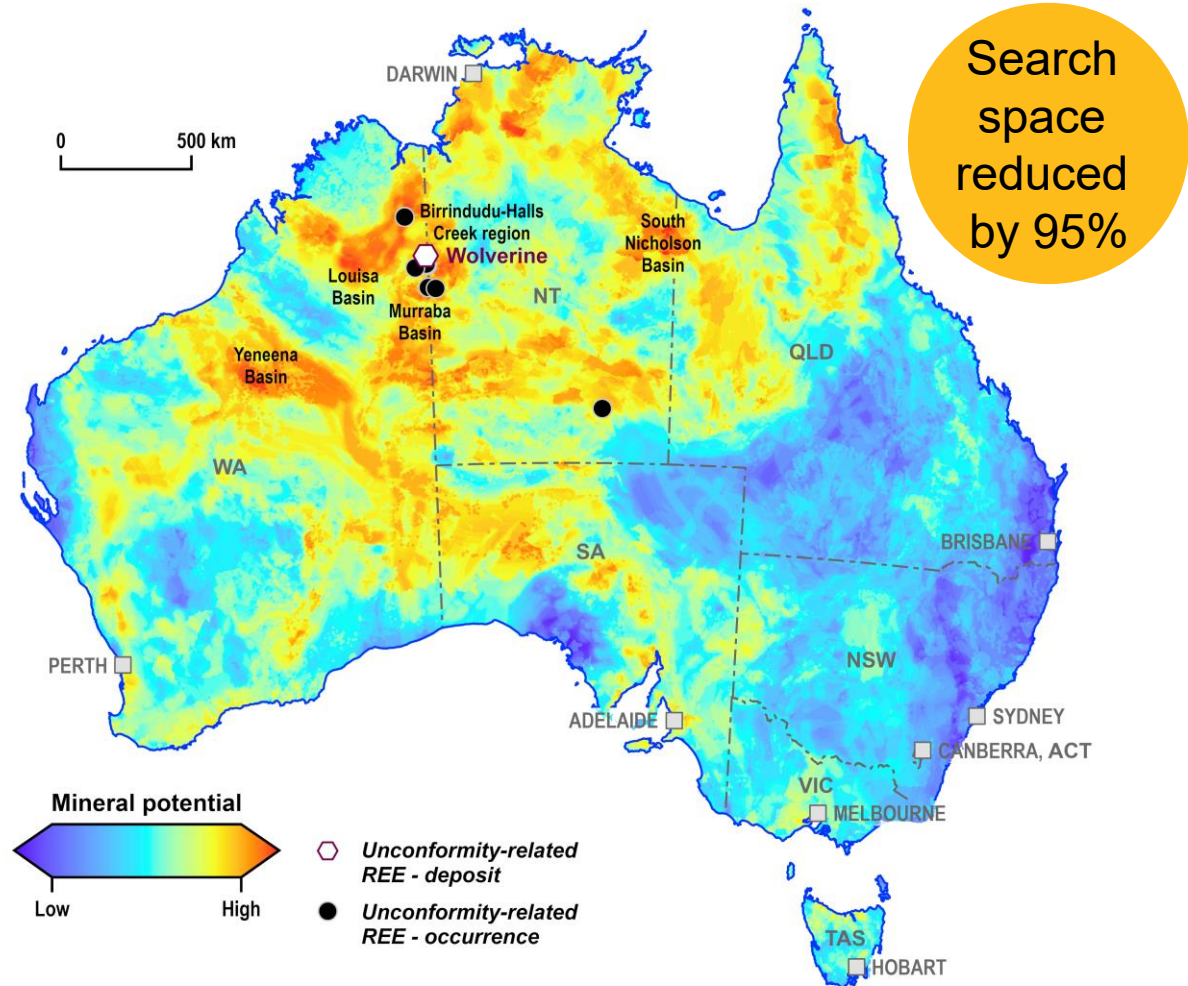
Industry geochemistry compilation pilot project



# National mineral potential assessments



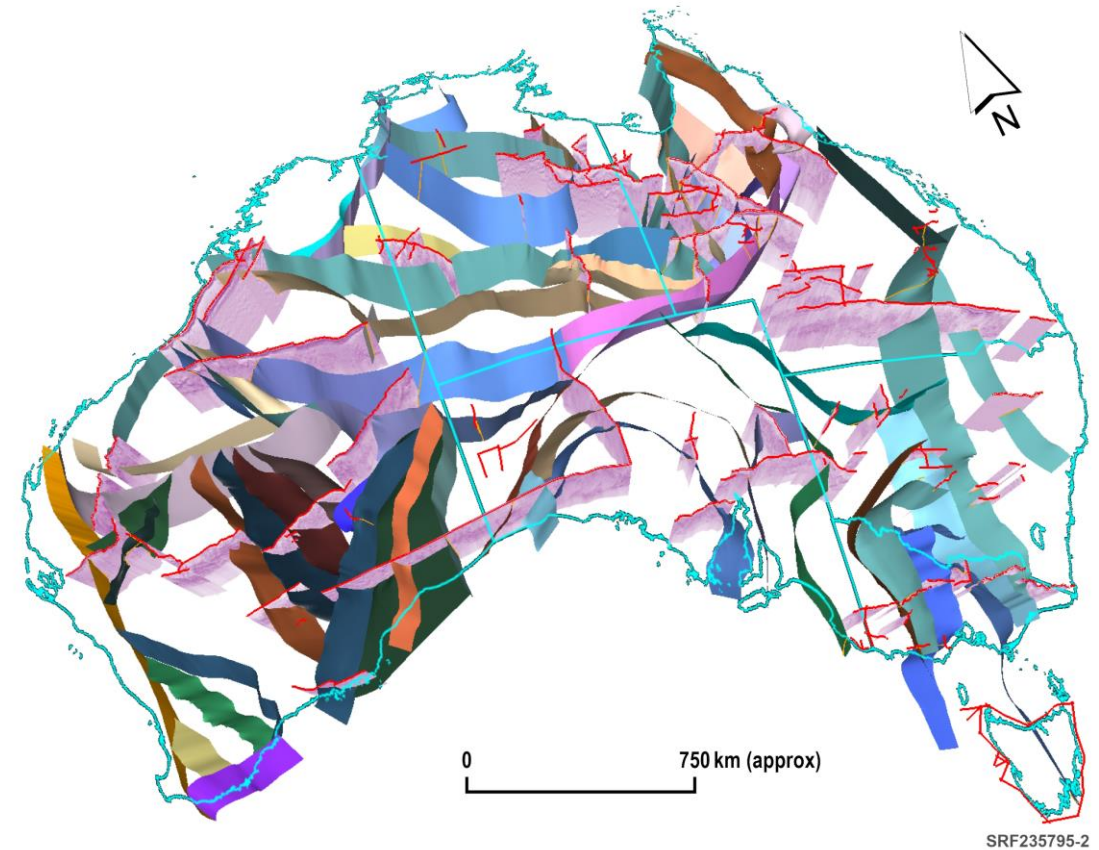
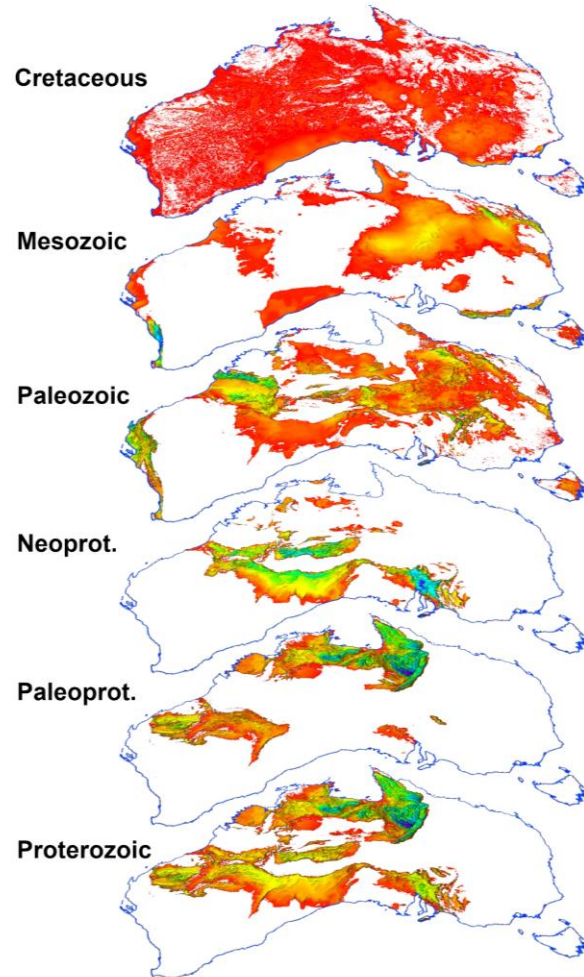
Iron oxide-copper-gold potential  
Cloutier et al., 2025)



Unconformity-related REE potential  
(Ford et al., 2026)

# Building a 3D map of Australia

## National 3D stratigraphic model

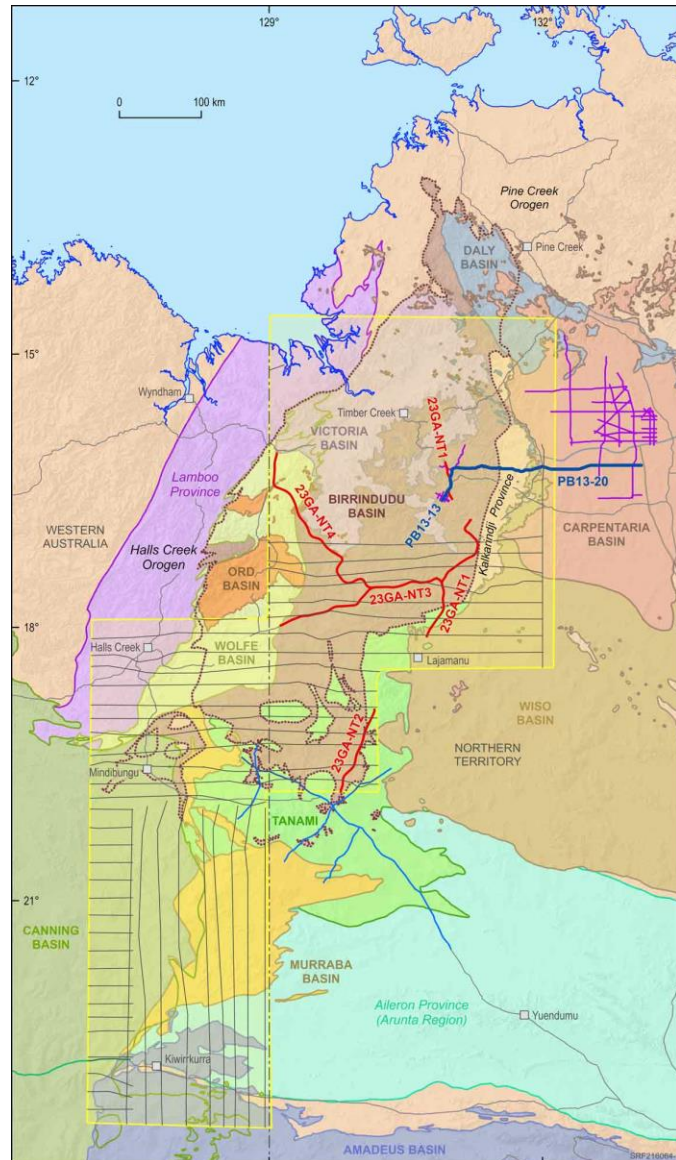


Vizy et al.  
(2025)



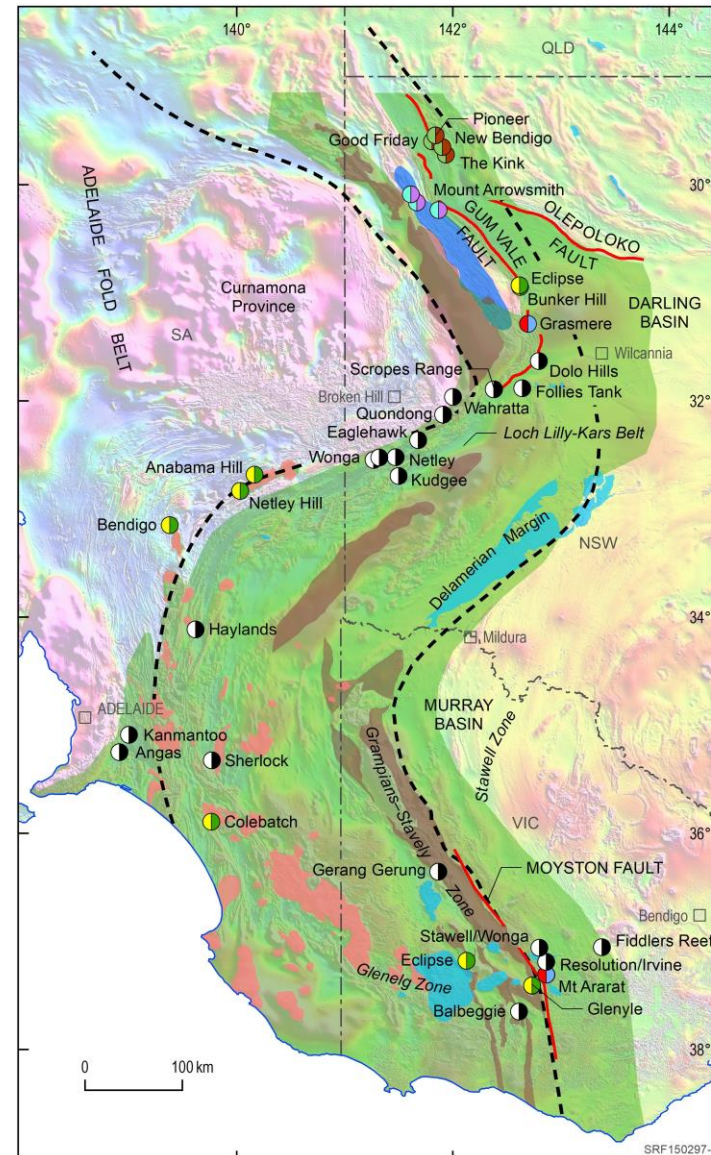
Doublier et al.  
(2024)

# Deep dive regional focus areas



- Provisional Birrindudu Basin
- Carpentaria Basin
- Daly Basin
- Wiso Basin
- Wolfe Basin
- Murraba Basin
- Ord Basin
- Victoria Basin
- Amadeus Basin
- Canning Basin
- Lamboo Province
- Aileron Province
- Tanami Region
- Planned AEM survey
- Existing AEM survey line
- L214 Northwest Northern Territory Seismic Survey
- L171 Tanami Seismic Survey (2005)
- L211 Kidson Sub-basin seismic survey
- Pangea Seismic Survey (part)
- Industry survey
- Major road
- Town/location

Birrindudu region



- 425–400 Ma magmatic rocks
  - 495–460 Ma magmatic rocks
  - 515–495 Ma interpreted arc rocks
  - 515–495 Ma convergent margin rocks
  - 590–580 Ma magmatic rocks
  - Delamerian Margin
  - Selected major fault
  - Orogenic Au prospects
  - Prospects of orthomagmatic Ni-Cu-PGE systems
  - Prospects of VHMS Cu-Zn systems
  - Prospects of porphyry-epithermal Cu-Au-Mo polymetallic systems
  - Prospects of unclassified mineral systems
  - Town/locality
- Magnetic intensity (nT)
- 16,852
- 3,837

Delamerian region

# Find out more



Data discovery portal  
[portal.ga.gov.au](http://portal.ga.gov.au)



Website  
[www.ga.gov.au/prosperity](http://www.ga.gov.au/prosperity)



Newsletter  
[www.ga.gov.au/subscribe](http://www.ga.gov.au/subscribe)



Contact  
[rapinitiative@ga.gov.au](mailto:rapinitiative@ga.gov.au)



# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

**Tasmania's critical, strategic and precious materials pipeline: copper–gold, antimony–silver, tin, tungsten, rare earth elements and fluorine**

**Positioned for growth**

Dr Rebecca Sproule  
Chief Government Geologist  
Minerals Resources Tasmania



# Lutruwita/Tasmania

## The “Island State”

- 0.9% of Australia’s landmass
- Due to its complex geological setting, Tasmania hosts an abundance of critical, strategic and precious materials
- Products of mining and mineral processing constitute >65% per cent of mercantile exports
- Supportive government with established approvals processes
- Robust infrastructure and skilled workforce
- Sustainable energy – net zero in emissions



# Tasmania's Critical Minerals Match Global Demand


Resources		Demonstrate Economic Potential		Occurrences	
Aluminium/Bauxite	● ● ● ●	Rare earth elements	● ● ● ●	Antimony	● ● ● ●
Bismuth	● ● ● ●	Silicon	● ● ● ●	Caesium	● ● ●
Cobalt	● ● ● ●	Tin	● ● ●	Chromium	● ● ● ●
Copper	● ● ● ●	Titanium	● ● ● ●	Gallium	● ● ● ●
Fluorspar	● ● ● ●	Tungsten	● ● ● ●	PGMs	● ● ● ●
Germanium	● ● ● ●	Vanadium	● ● ● ●	Rubidium	● ● ●
Indium	● ● ● ●	Zinc	● ● ●		
Lead	● ● ●	Zirconium	● ● ●		
Magnesium	● ● ● ●				
Nickel	● ● ● ●				

Critical Minerals as defined by: ● Australia ● USA ● EU ● Canada



# Current Production and Processing

Primary and by-product **production** and processing in a range of strategic, critical and precious minerals

 **Cu, Zn, Pb, Au, In, Ge, Sb**

 **Sn, W, F, Sb, Cu, As**

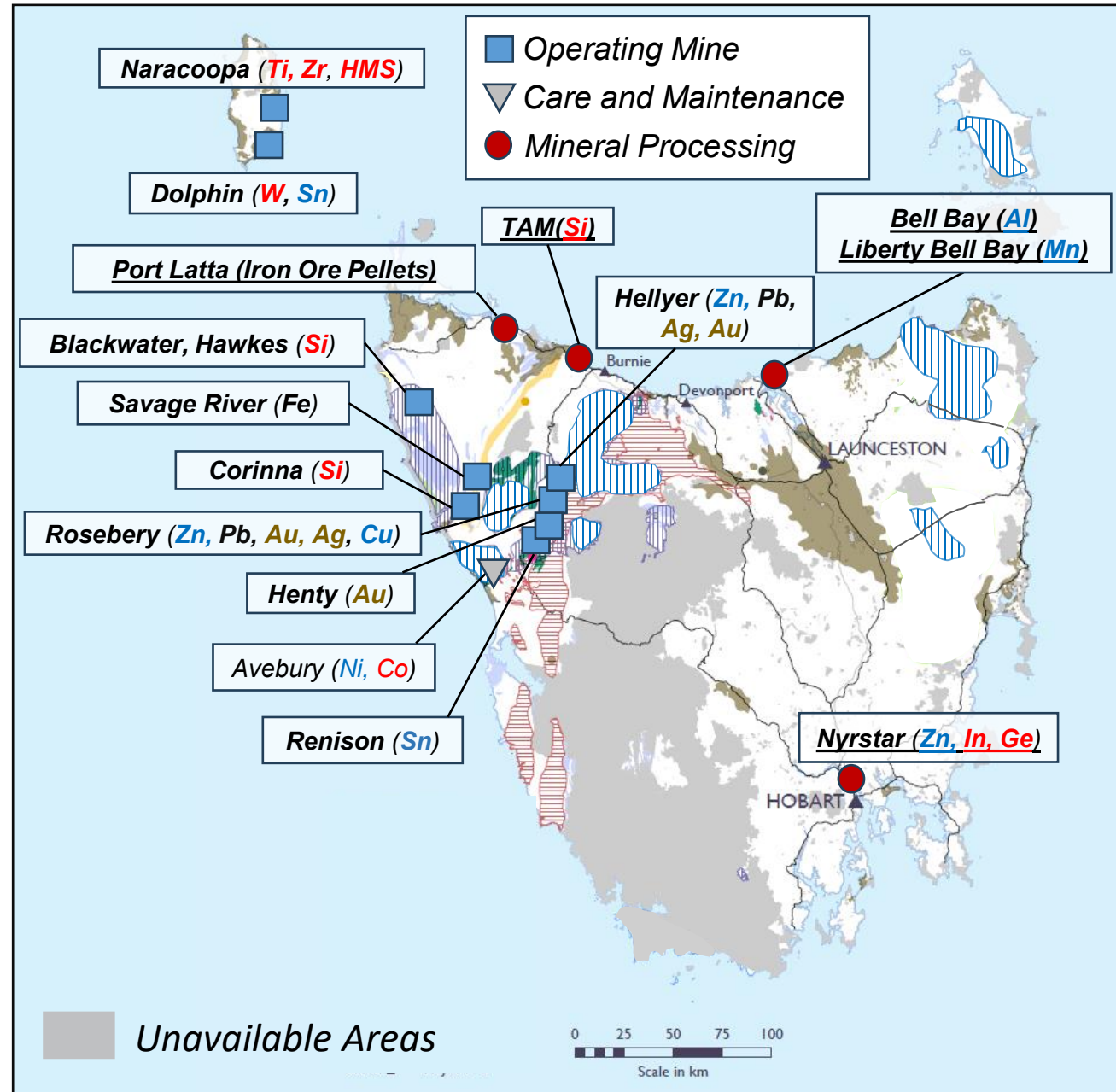
 **Fe (magnetite), REE, Cu, Au, Mg**

 **Ni, Co, Cu, PGE, Cr**

 **Si (silica flour)**

 **REE, Ti, Zr**

**Production in bold**  
Processing underlined  
**Strategic minerals in blue**  
**Critical minerals in red**  
**Precious metals in brown**



# Tasmanian Government Support



## Office of the Coordinator-General

First point of contact for business in Tasmania



## Downstream Processing

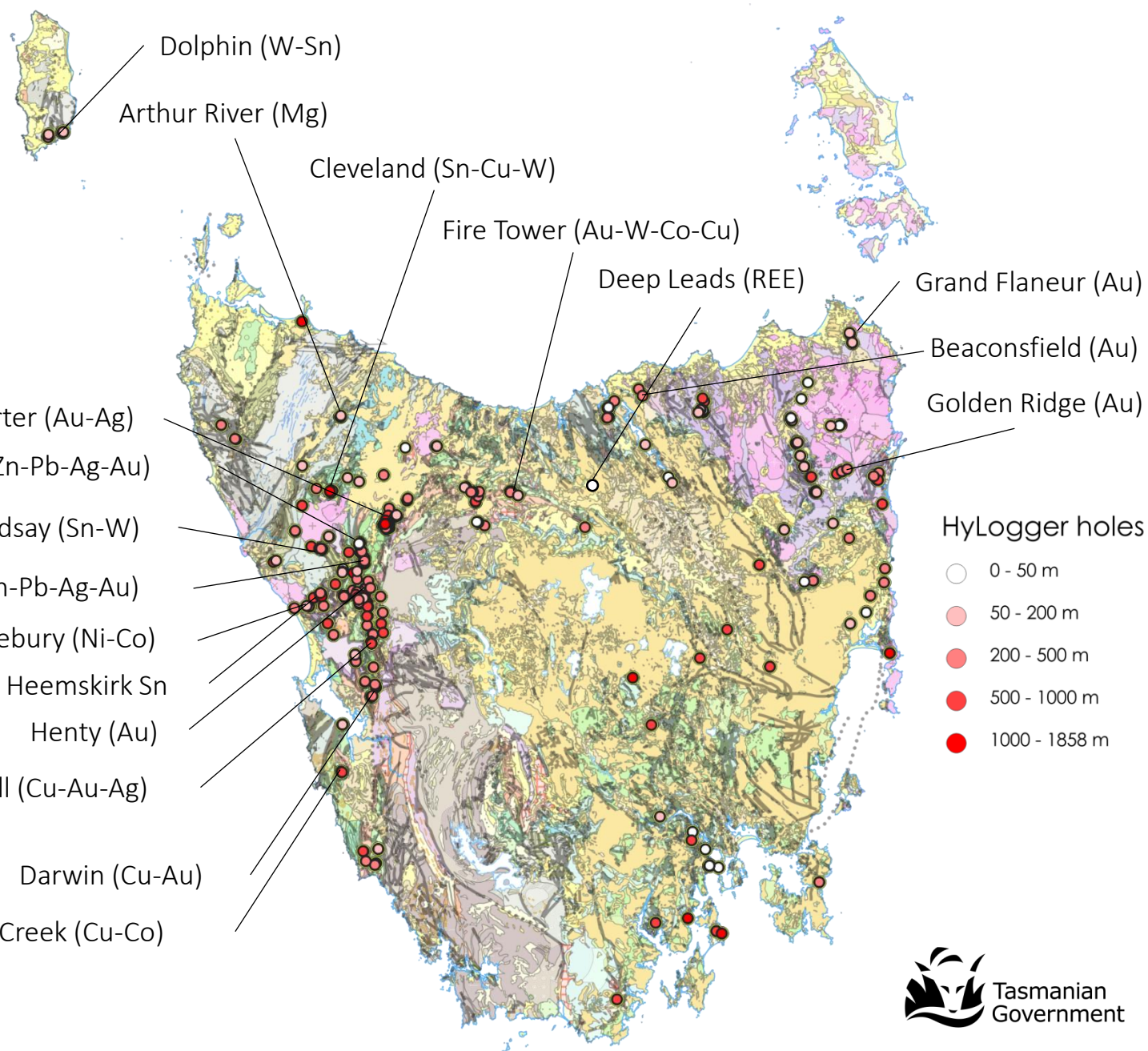
Ongoing Landmark Study - Common User Processing Facility (CUPF) for critical minerals

## Mineral Resources Tasmania

- Precompetitive Datasets
- Exploration Drilling Grant Initiative (\$5 million since 2018)
- Critical Minerals Initiative
  - \$3 million over 3 years
  - Prospectivity Maps
  - Critical Mineral Deposit Atlases
  - Increased 3D models
  - Sampling historic core
  - Critical mineral deposit research

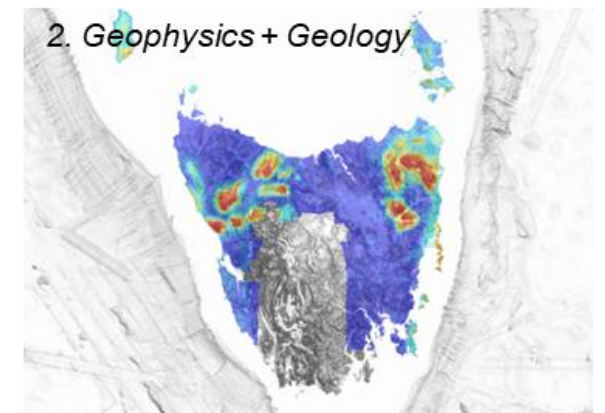
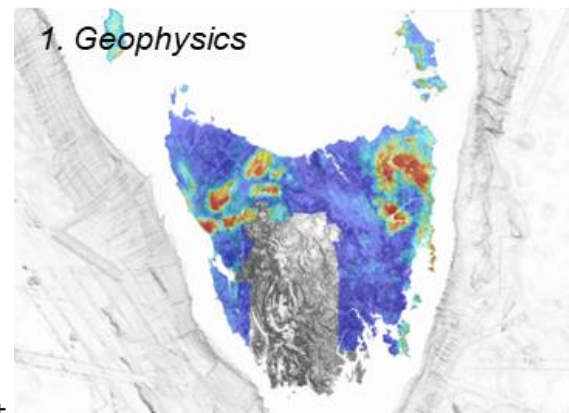
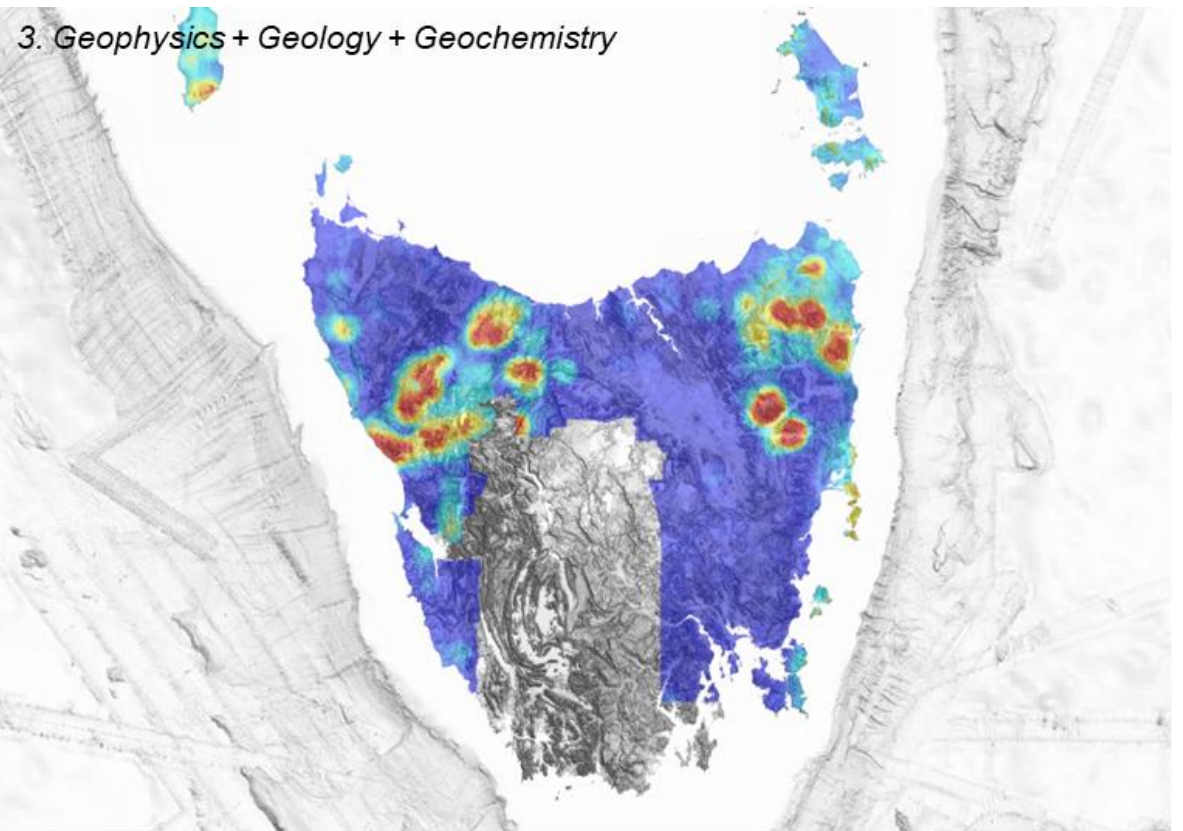
# Critical Mineral Deposit Atlases

- Leveraging our data to aid explorers
- **Data packages** with optimised Hylogger datasets from each deposit
- **Reports** summarising hyperspectral outputs and **interpretations** at the deposit scale
- **Integrated** with ancillary data: **geological logs, geochemistry, and petrophysics**




# Critical Minerals Prospectivity Maps

- Driver for the project is “Mining the core library”—resampling of >1,000 km of legacy core stored on site for multi-element ICP-MS
- Focussed initially on Sn-W-F
- Mineral System approach + random forest methodology
- All models predict 90% of the known tin/tungsten/fluorite deposits within 10% of the study area
- The random forest modelling has allowed us to reduce the number of drillholes that need to be reviewed for ongoing re-sampling
- Release of first prospectivity programs upcoming
- Next elements:
  - NE Tasmania for Au-Sb
  - Tasmania wide Ni-Co
  - Western Tasmania Sb
  - Western Tasmania Mt Lyell Cu-Au



# A pipeline of opportunities

- Exploration pipeline of developing projects in a range of commodities and further potential in prospective belts

 **Cu, Zn, Pb, Au, In, Ge, Sb**

 **Sn, W, F, Sb, Cu, As**

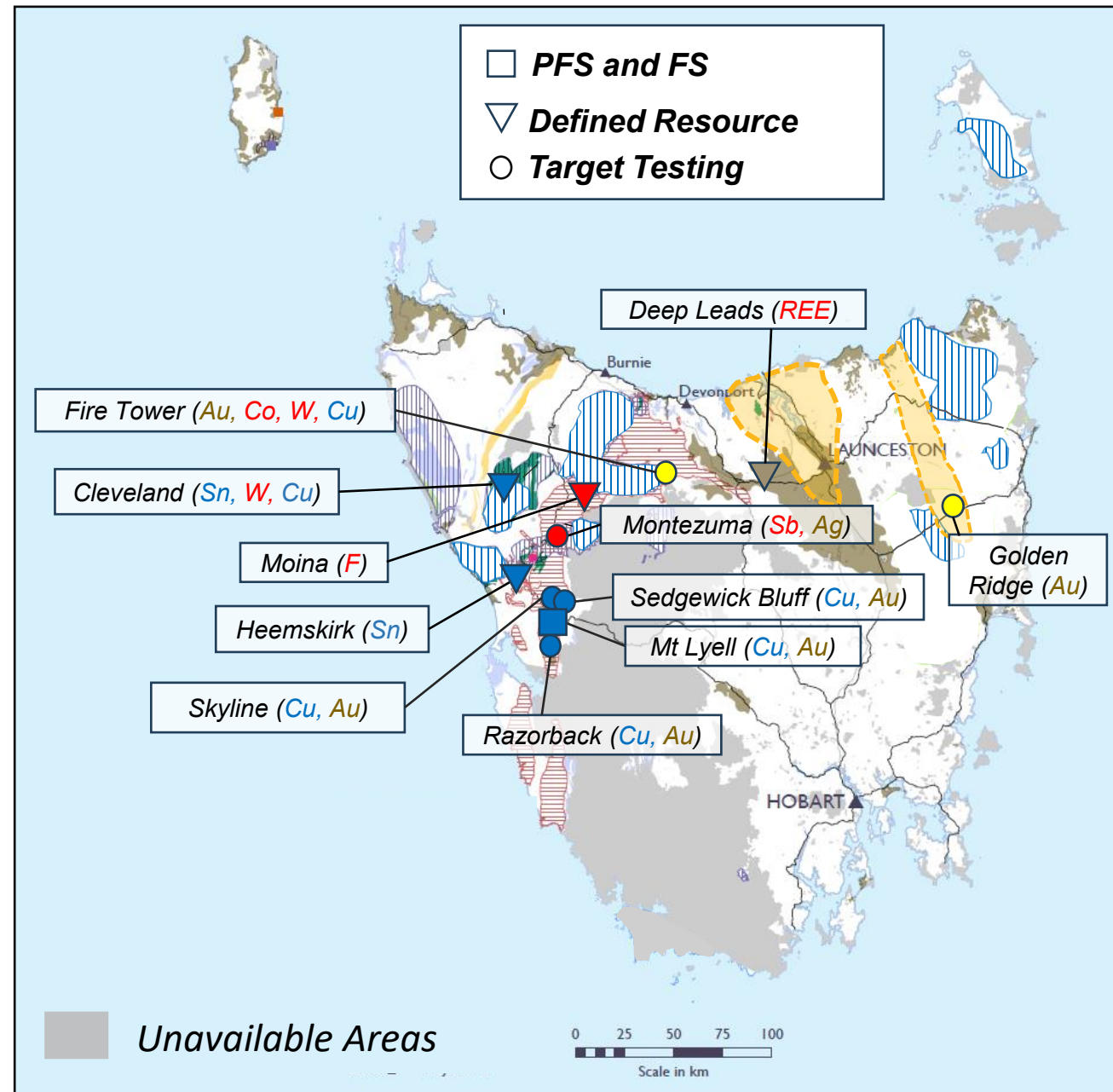
 **Au, Ag, Sb**

 **REE, Ti, Zr**

Strategic minerals in blue

Critical minerals in red

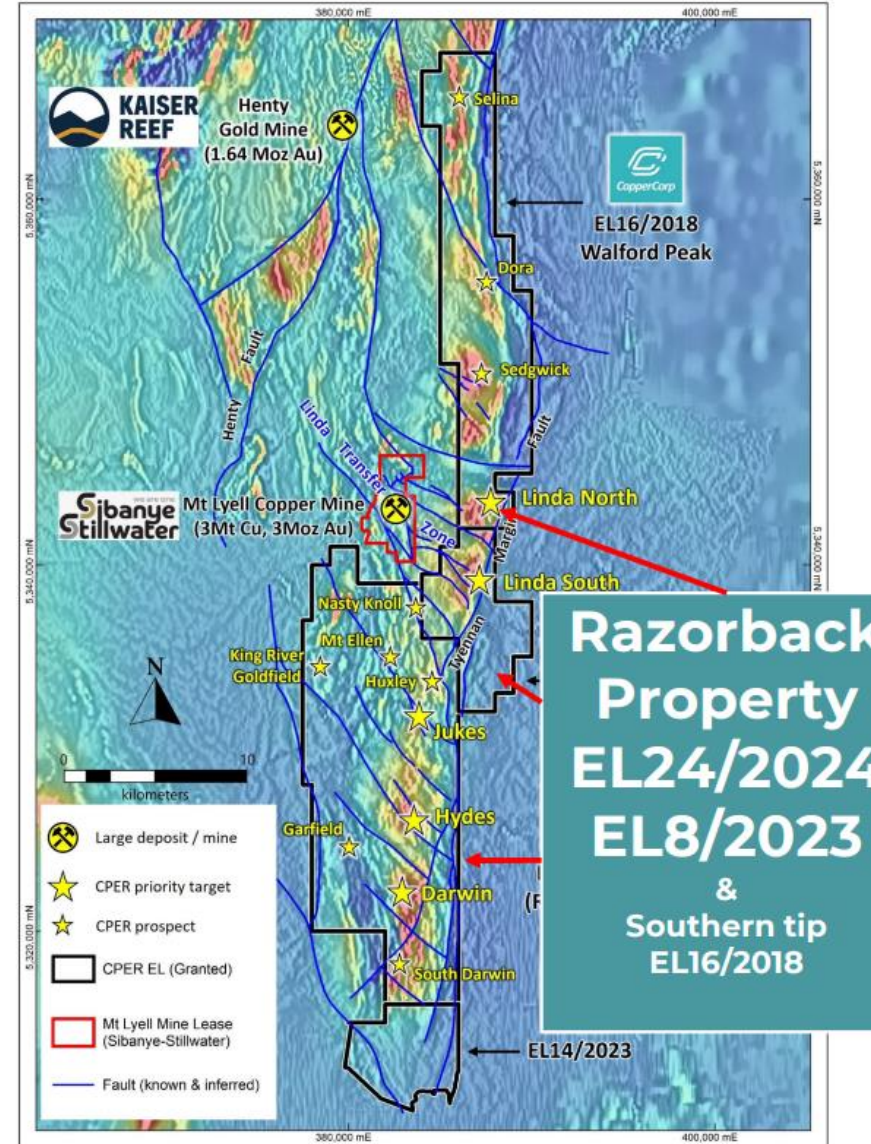
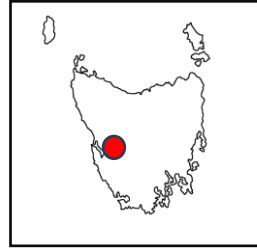
Precious metals in brown



# Project Pipeline – CopperCorp

## Copper, Gold and Silver

- Skyline and Razorback projects along trend of world class Mt Lyell Cu-Au deposits
- 23 km of strike length
- Early exploration stage
- Highest priority targets at Jukes and Hydes
  - Jukes drilling
    - 132m @ 0.35% Cu & 0.19g/t Au (JDD001)
    - 50m @ 0.66% Cu & 0.27g/t Au (JDD002W1)
    - 12.6m @ 0.78% Cu, 0.15g/t Au, 3.43g/t Ag (JDD004)
  - Hydes channel sampling
    - 24m @ 0.74% Cu & 0.36g/t Au, including 14m @ 0.97% Cu & 0.56g/t Au



**Razorback Property  
EL24/2024  
EL8/2023  
&  
Southern tip  
EL16/2018**

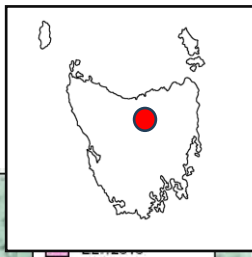


Jukes high grade



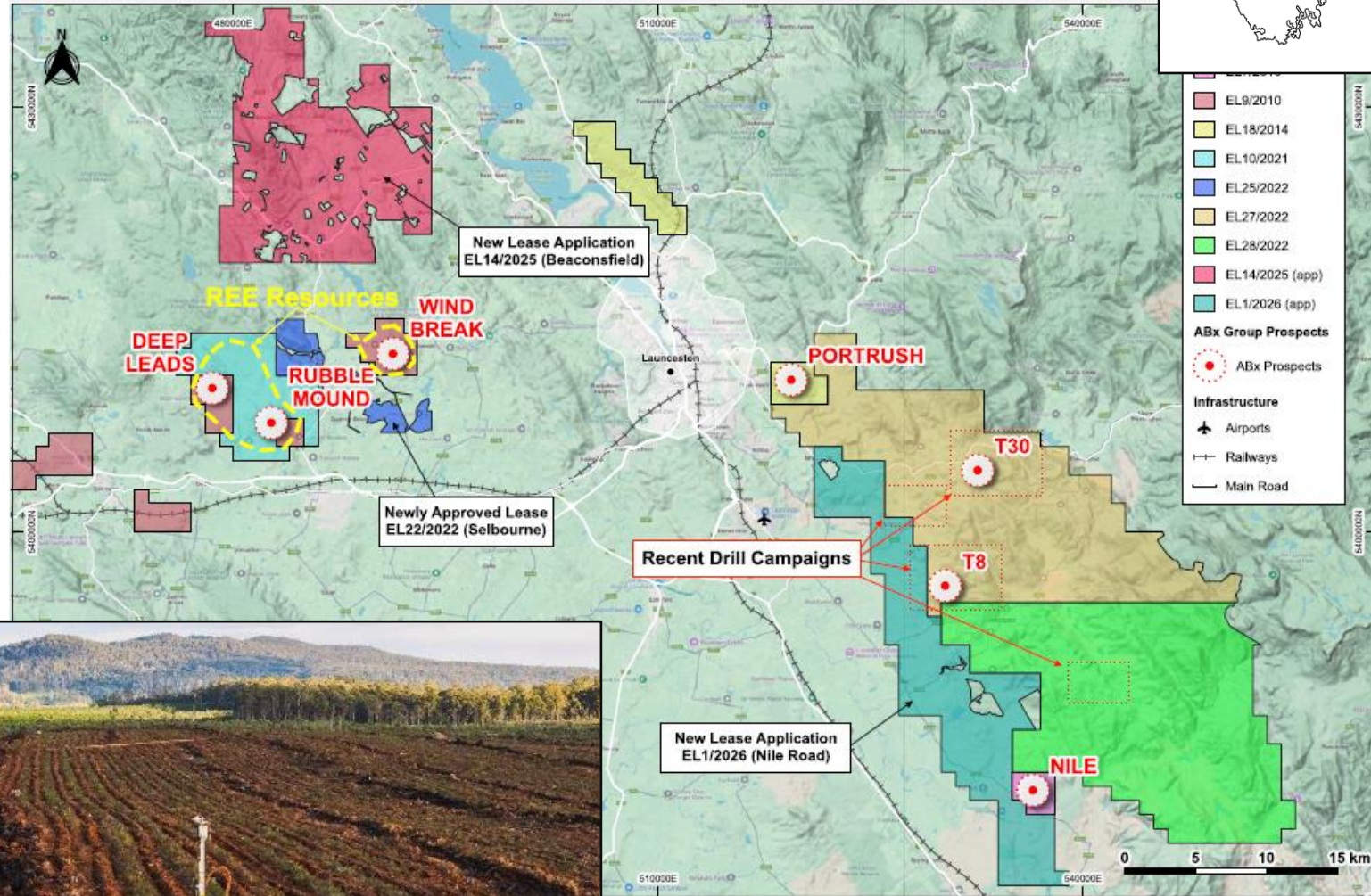


# Project Pipeline: ABx Group - Deep Leads



## Rare earth elements

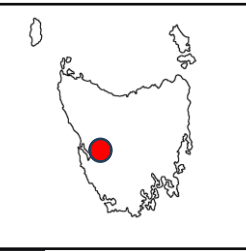
- 89 Mt at 844 ppm TREO
- Ionic adsorption clay (IAC) type with among the highest Dy and Tb proportions of any IAC worldwide
- Highly favourable test work with high rare earth extraction at pH4 or above in less than 30 minutes. No acid is required
  - Lower reagent costs, lower impurity removal cost and lower rare earth losses
- ABx Deep Leads MREC (mixed rare earth carbonate) has 2.8 to 4.7 times the proportion of Dy+Tb compared to peer MRECs
- New discovery (Temple Bar) 50km to east



ABx Group Feb 2026

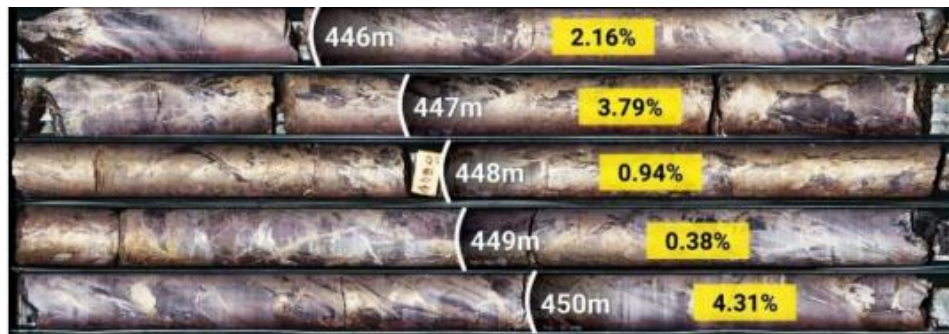


# Project Pipeline - Stellar Resources - Heemskirk



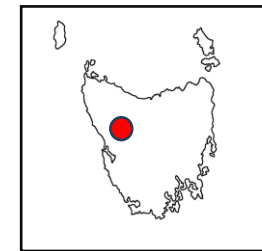
## Tin

- Total resource of 9.5 Mt @ 0.93% Sn (88,100 kt contained Sn)
- Resource open at depth with new intercepts
- Favourable metallurgy (97% cassiterite) with 69% recovery in 2019, anticipated to increase to 75%
- Pre-feasibility studies in progress
- Off-take unencumbered



# Project Pipeline: Elementos - Cleveland

# ELEMENTOS

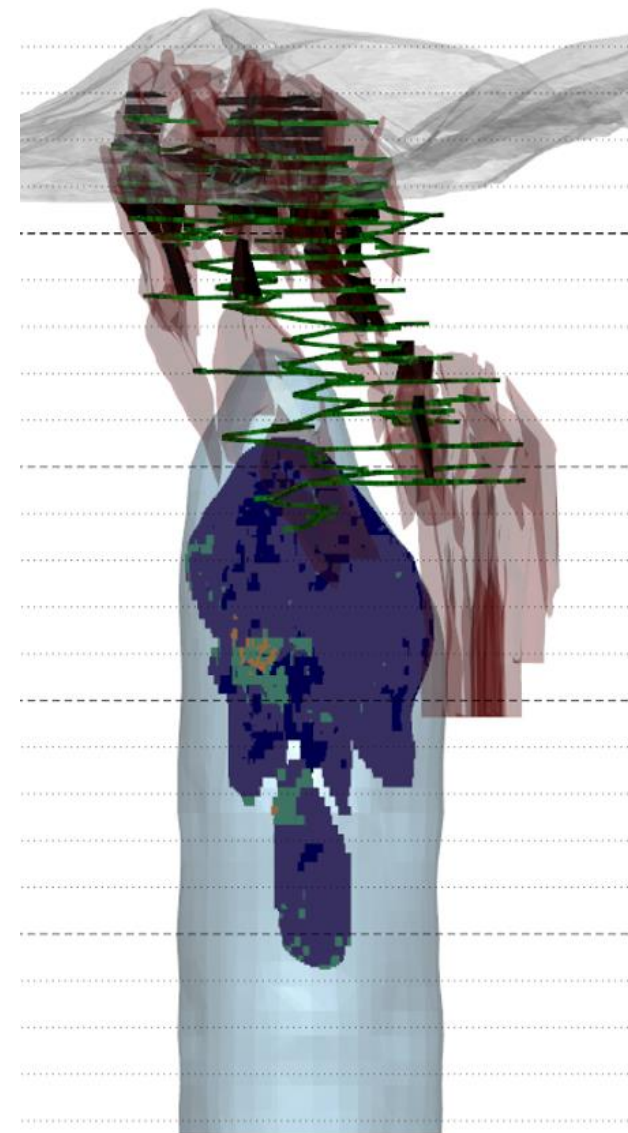


## Tin, Copper and Tungsten

- **Total UG JORC Resources:**
  - 7.47 Mt @ 0.75% Sn (and 0.30% Cu)
  - 8.49 Mt @ 0.24% WO<sub>3</sub>
- **Tailings JORC Ore Reserve (Historic Tailings)**
  - 3.70 Mt @ 0.29% Sn (and 0.13% Cu)
- **Exploration Target**
  - 32 Mt @ 0.24%WO<sub>3</sub> – 90 Mt 0.17%WO<sub>3</sub>
- Resource open at depth with new intercepts
- Critical Minerals co-mineralised in Tungsten
  - Rubidium (Rb), Fluorspar (F), Molybdenum (Mo)
- Ore Sorting (Tungsten ore) upgrades 411-680%



Tungsten (Wolframite) (ELT ASX release 03 October 2024)



**Legend**  
Datum: GDA94 MGA55

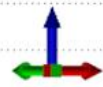
- Foley's Drillhole
- Cleveland Historic Decline
- Historic Mined Out Stope
- Topography
- Foley's 2026 Tungsten Exploration Target
- Foley's 2026 Tungsten Block Model
- Cleveland Tin/Copper Resource

**Lithology**

- Ultramafic/Basalt
- Shale/Siltstone
- Sandstone
- Chert
- Quartz vein >1m

0 100

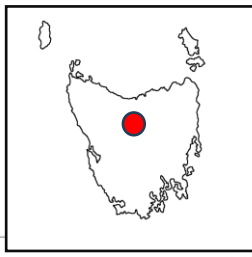
-500RL



-750RL

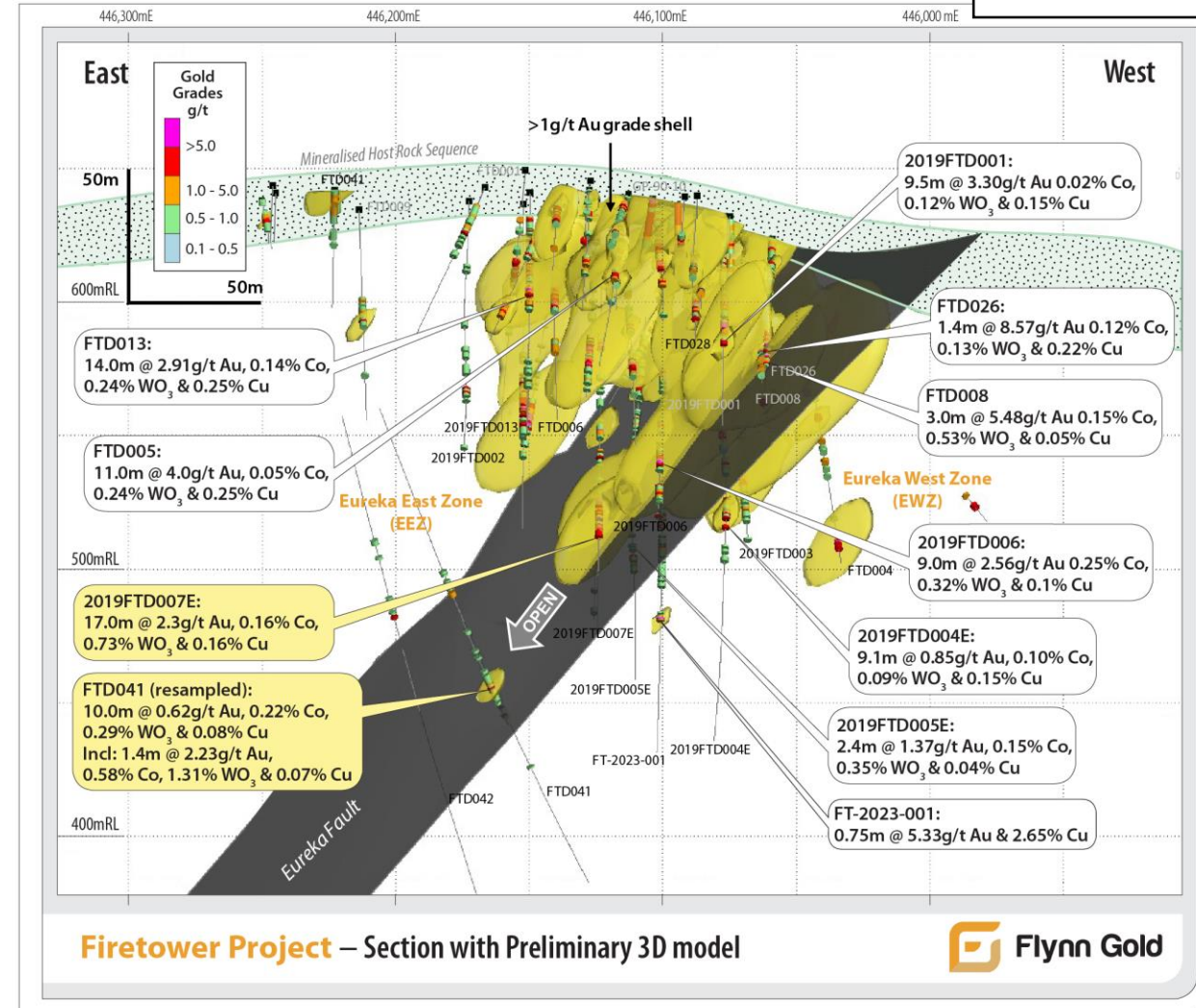
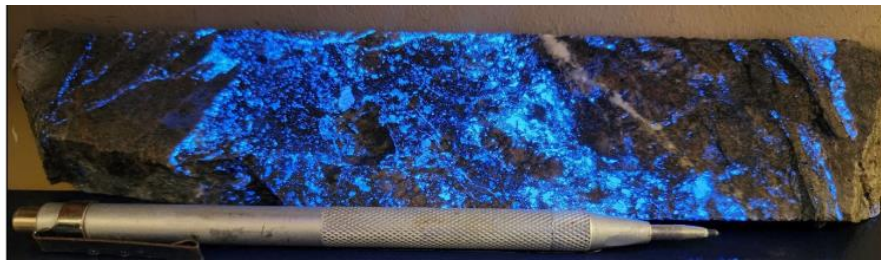


# Project Pipeline – Firetower Au-Co-W-Cu



## Gold, Cobalt, Tungsten and Copper

- High-grade gold, copper, cobalt, and tungsten from surface down to ~150m over a 350m strike
- Mineralisation remains open along strike and at depth within a 6 km long corridor that's largely untested
- 2025 re-sampling of historical drill core has already revealed standout results, including:  
**17m @ 2.3 g/t Au + 0.73% WO<sub>3</sub>** including **0.5m @ 6.6 g/t Au + 3.79% WO<sub>3</sub>**



Section with preliminary model



## **Tasmania's critical, strategic and precious materials pipeline - copper-gold, antimony-silver, tin, tungsten, rare earth elements and fluorine**

Dr Rebecca Sproule  
Chief Government Geologist  
Minerals Resources Tasmania



# AUSTRALIA MINERALS

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## **Tasmania's two-sided gold story:** Producing today, Discovering tomorrow

Dr Rebecca Sproule  
Chief Government Geologist  
Minerals Resources Tasmania

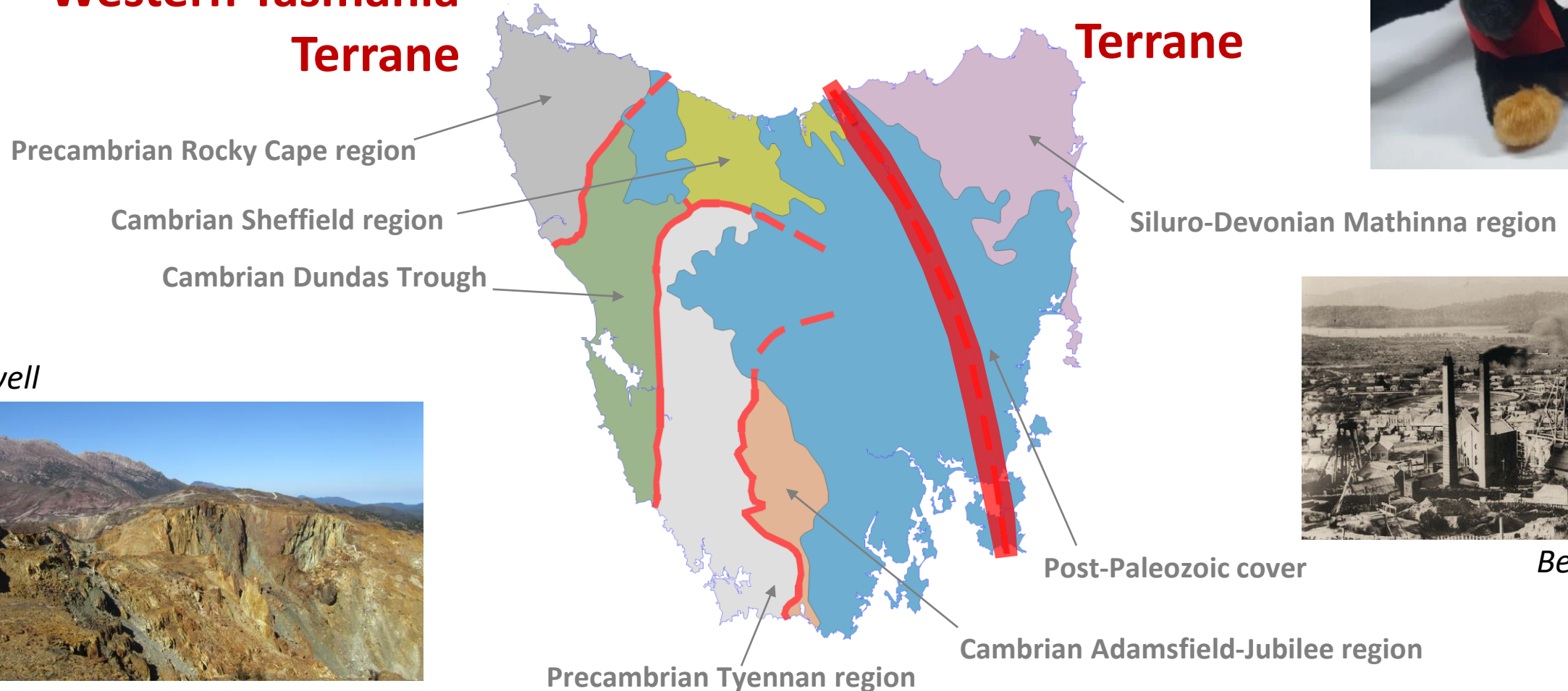


# Tasmania's Two Sides Gives Two Very Different Gold-Bearing Settings



## Western Tasmania Terrane

## Eastern Tasmania Terrane



*Mt Lyell*

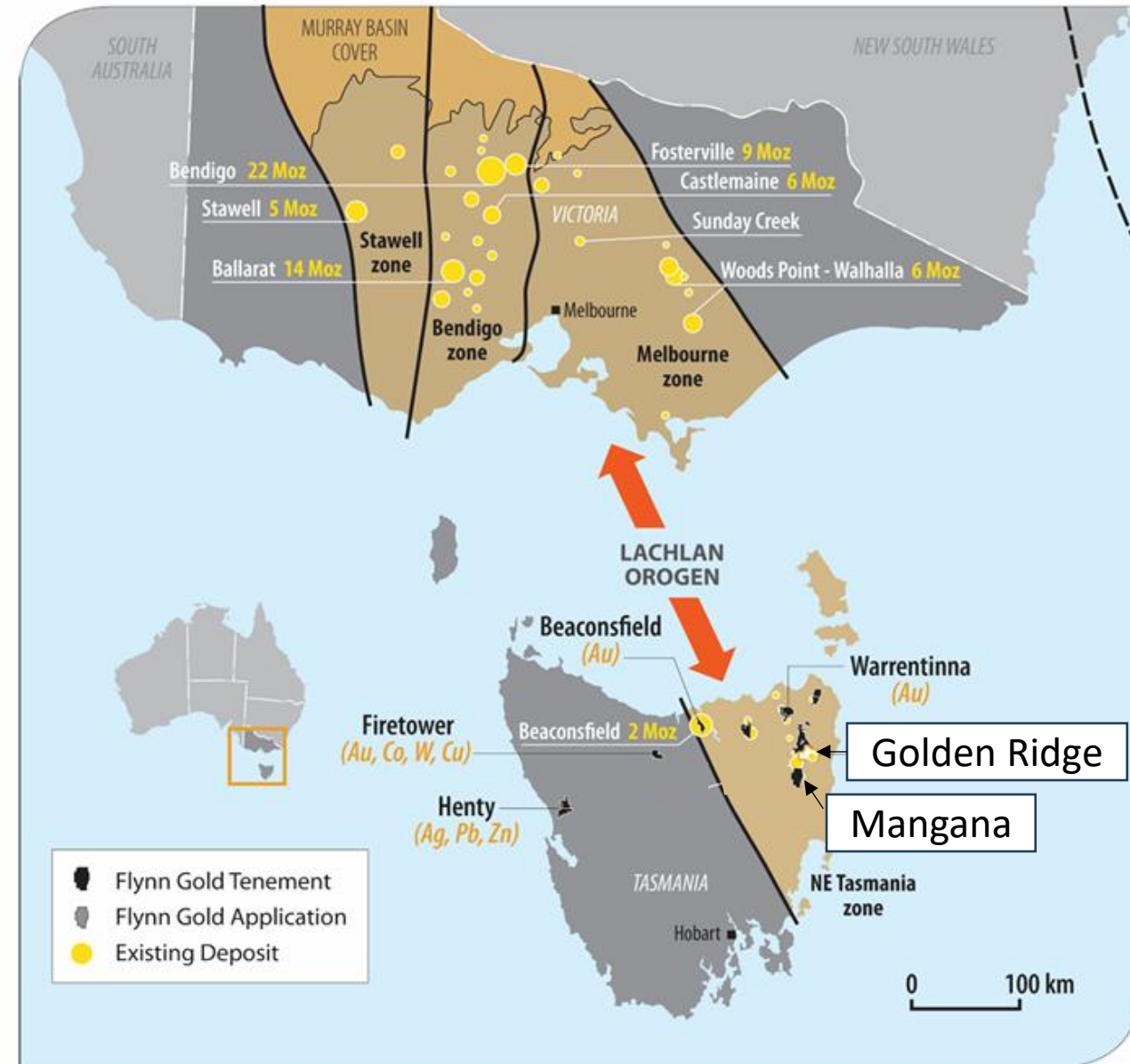


*Beaconsfield*

# Eastern Tasmania – Victoria's lost sibling.....

## Orogenic + Intrusion-related gold

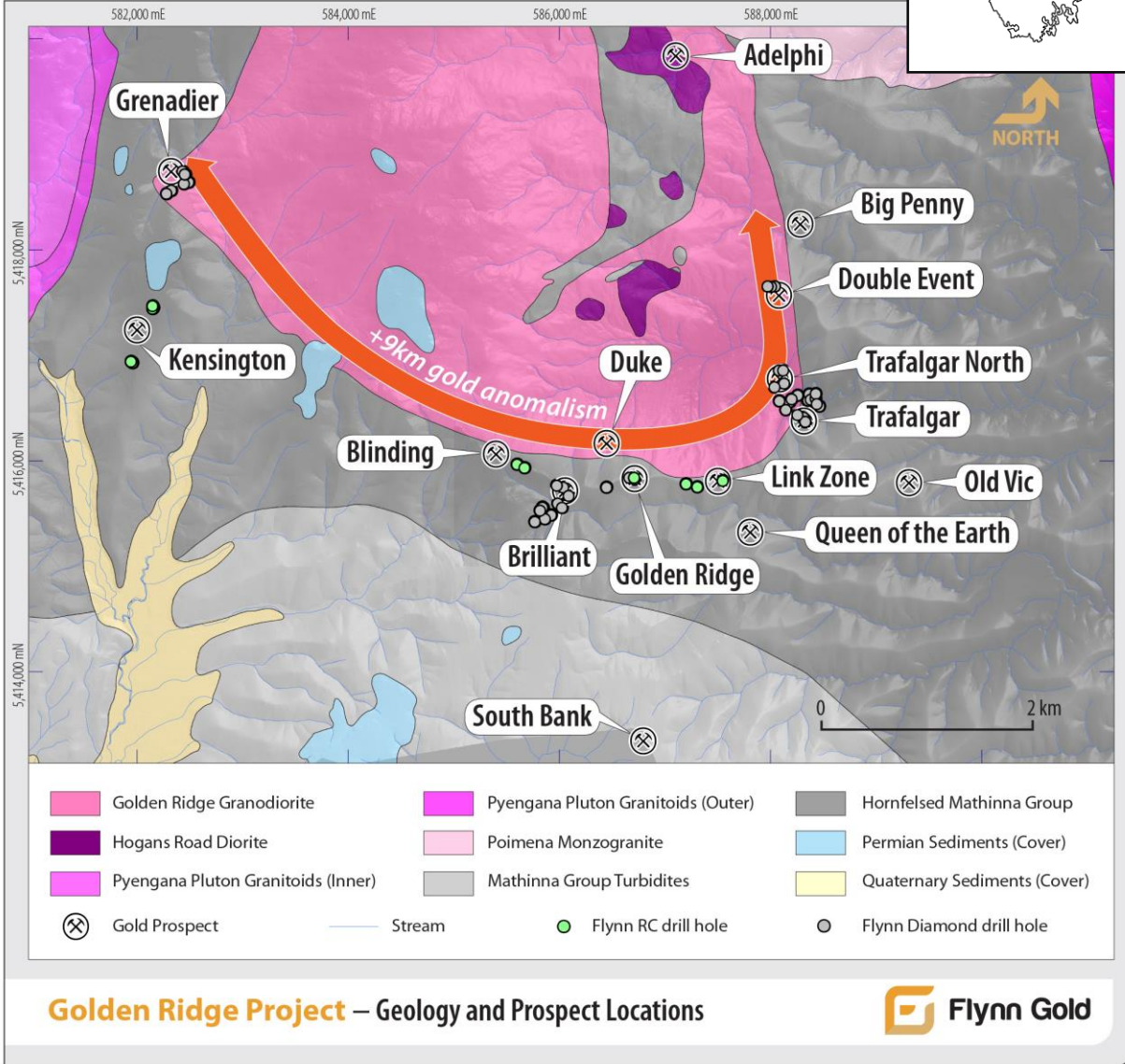
- Considerable historic gold production from Tasmania
  - Beaconsfield: 1.775 Moz at 14.5 g/t
  - Golden Gate: 0.254 Moz at 26 g/t Au
- Compare this to historical production ~80 Moz from Victoria (Resources Victoria)
- Exploration in NE Tasmania has been relatively limited over the last century
- Using deposit densities and comparisons with Victoria (from our data scientist)
  - Estimated 1-2 major Au deposits (containing >1 MOz Au) remaining undiscovered in NE Tasmania
- Planned prospectivity mapping for Au + Sb



# Project Pipeline – Flynn Gold - Golden Ridge

## Gold

- Intrusion related gold system
- Historical gold workings and soil anomalies along a 9km+ granodiorite and metasediment contact – open all directions
  - Main prospects at **Trafalgar, Brilliant and Link Zone**
  - Maiden Exploration Target of 3.5-5.4Mt at 3.0g/t Au to 4.0g/t Au for 449,000oz to 520,000oz of contained gold
  - Currently exploring 3.0km zone between the Brilliant and Trafalgar prospects



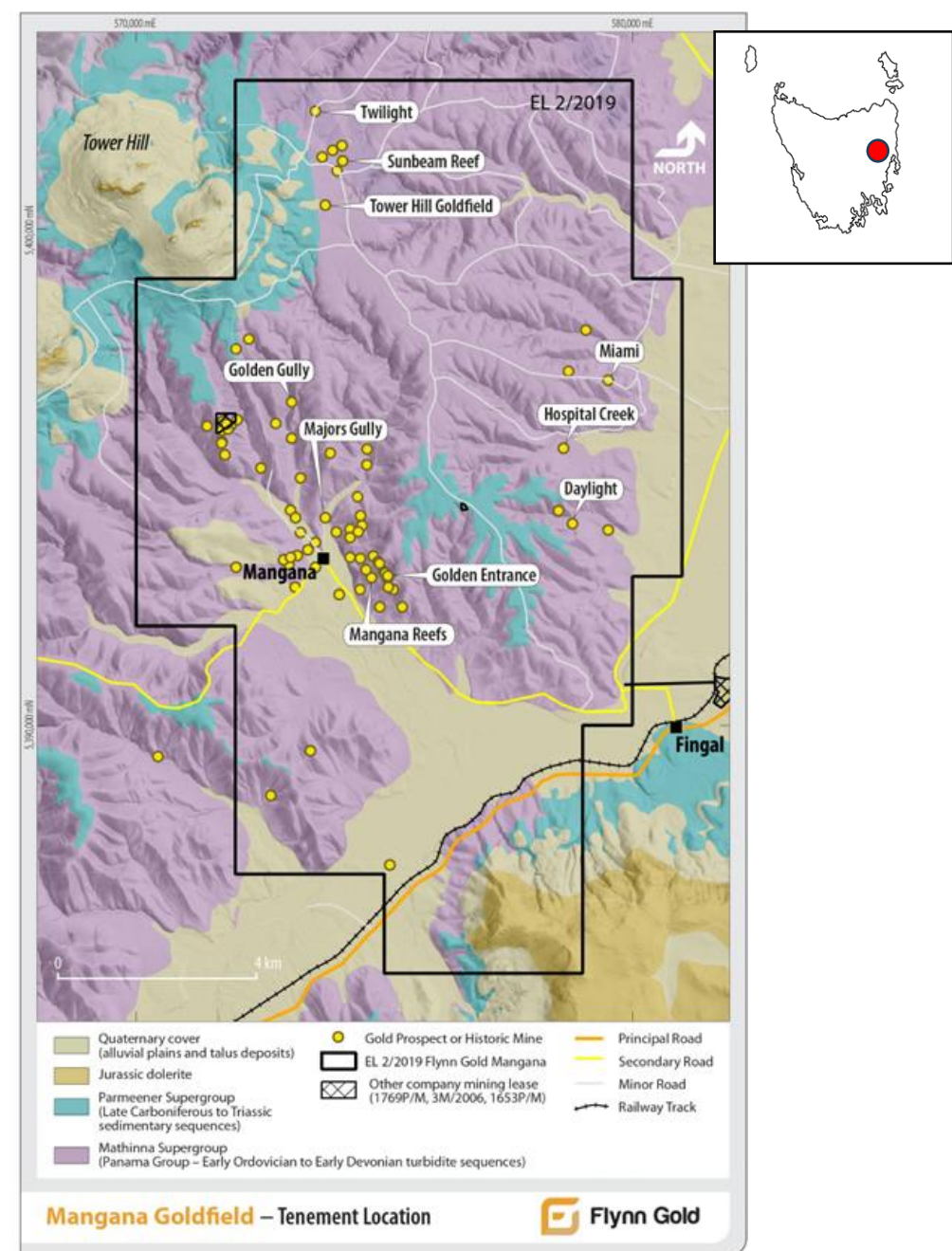
# Project Pipeline – Flynn Gold – Mangana

## Gold

- Orogenic lode-style auriferous quartz veins – similar to Victorian Goldfields
- Located 30km from Golden Ridge
- Mangana “Golden Corridor” in NE Tasmania with numerous historic mines including Golden Entrance (1900-1907 production: 2,939 Oz @ av. grade 127 g/t Au)
- Drilling Completed – Two EDGI co-funded diamond drill holes for high-grade gold mineralisation beneath historical gold mine - Assays Pending



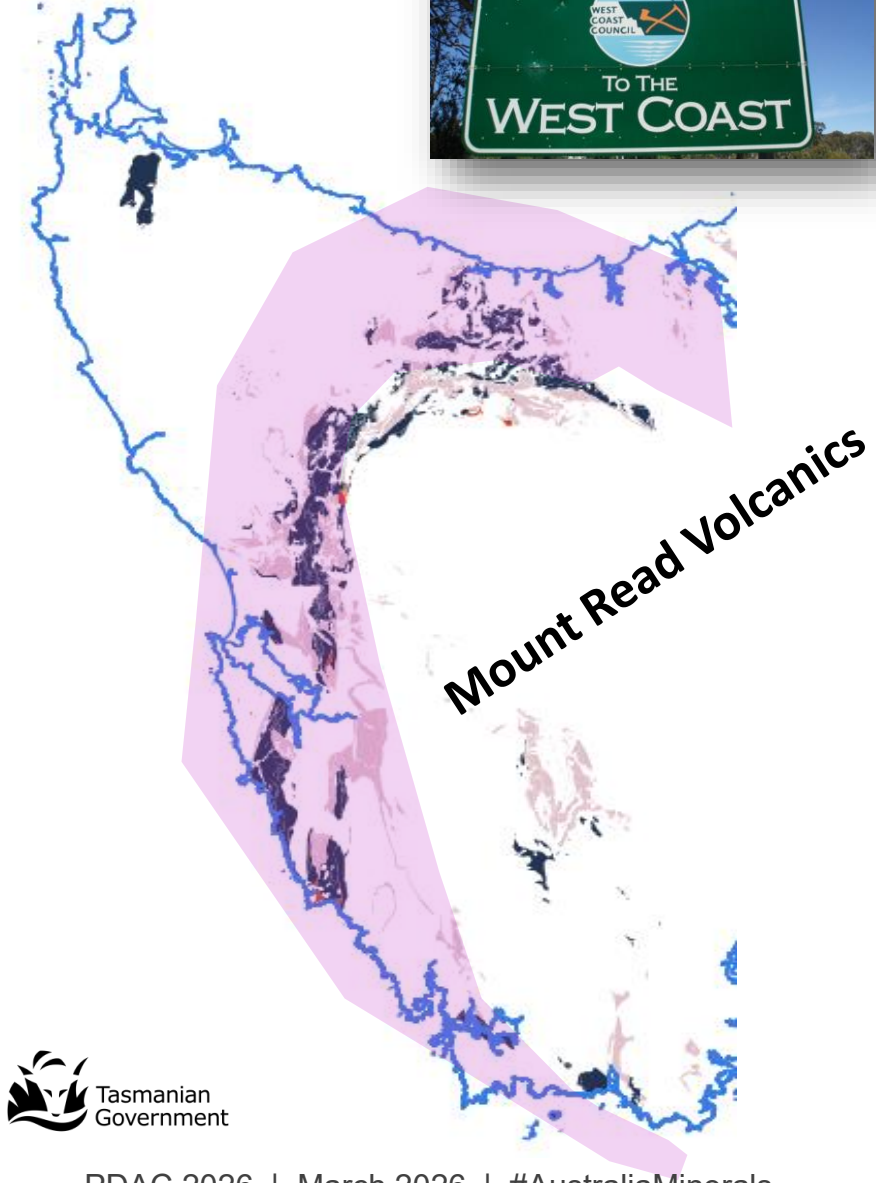
*Golden Entrance mine with historic production 2.9 k Oz at 127 g/t Au*



# Western Tasmania – completely different!

- Major Palaeozoic orogenic events associated with mineralisation
  - ~510 Ma Late Cambrian Post-collisional volcanism (Mt Read Volcanics)
    - Cu-Au (Mt Lyell) – “Hybrid” VHMS-Porphyry - HS epithermal system – (IOCG?)
    - Polymetallic Cu-Pb-Zn-Ag-Au VMS (Rosebery, Hercules, Que River, Hellyer)
    - Au-rich VMS (Henty)
  - ~390Ma Middle Devonian granitoids (Tabberabberan Orogeny)
    - Sn, W, Ni, F, Sb, Ag

Mt Lyell

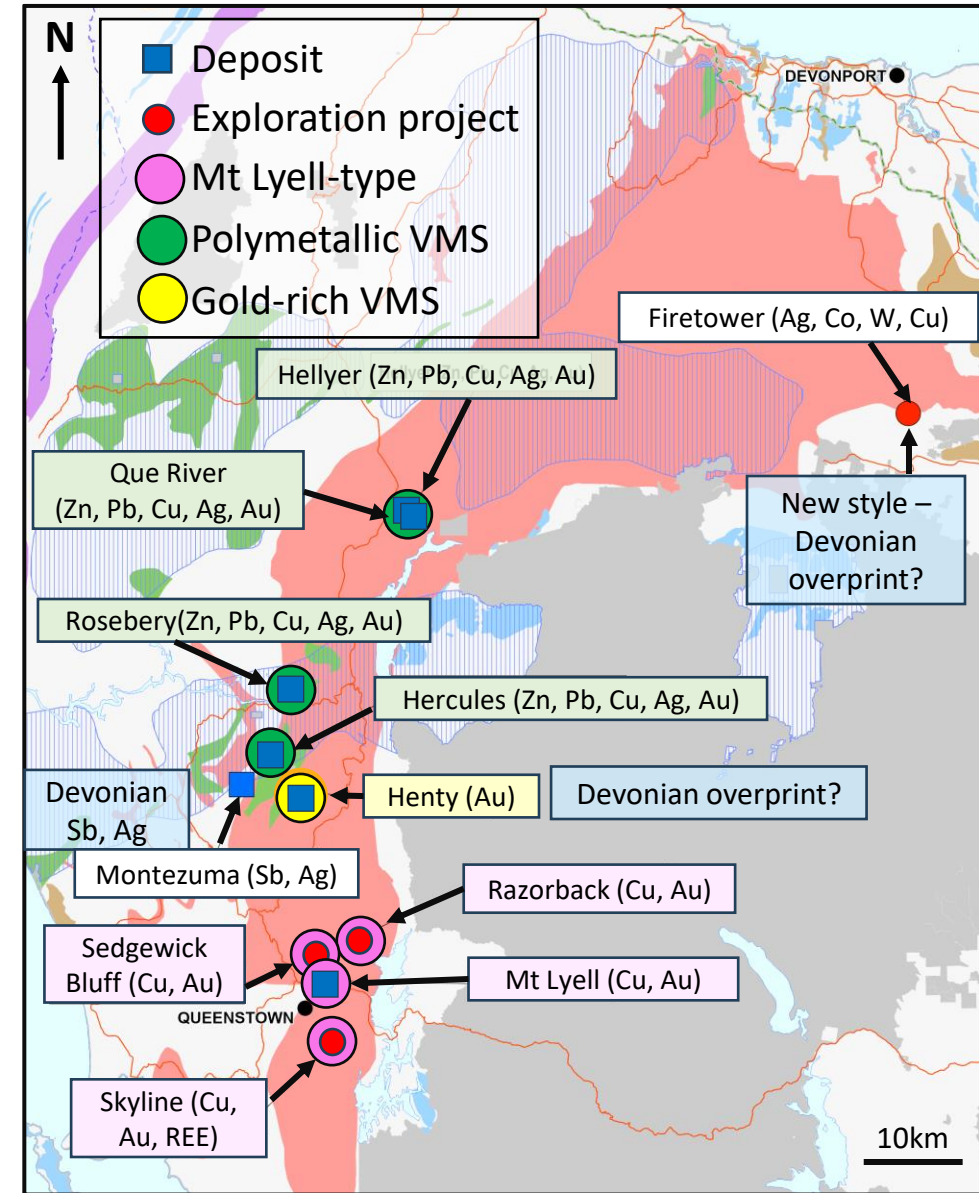


# Western Tasmania Cambrian Gold-Bearing Deposits



Type	Deposit	Holder	Total Inventory (Mt)*	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)
Mt Lyell	Mt Lyell**	Copper Mines of Tasmania Pty Ltd	311†			1.0		0.3
Poly-metallic VMS	Hellyer	Hellyer Gold Mines Pty Ltd	17	14	7	0.4	169	2.6
	Que River	Greenwing Resources Ltd	3.3	13	7.4	0.7	195	3.3
	Rosebery	MMG Australia Limited	70†	6.5	2.0	0.5	90	1.1
	Hercules		3.3	17	5.5	0.4	171	2.8
Gold-rich VMS	Henty	Kaiser Reef Pty Ltd	5.5					4.8

\*Pre-mining (mined + remaining resources) † Estimated  
 \*\*Sibanye-Stillwater Feasibility Study completed, awaiting FID  
 (Total MRE of 93.1 Mt@ 0.93% Cu and 0.24 g/t Au)

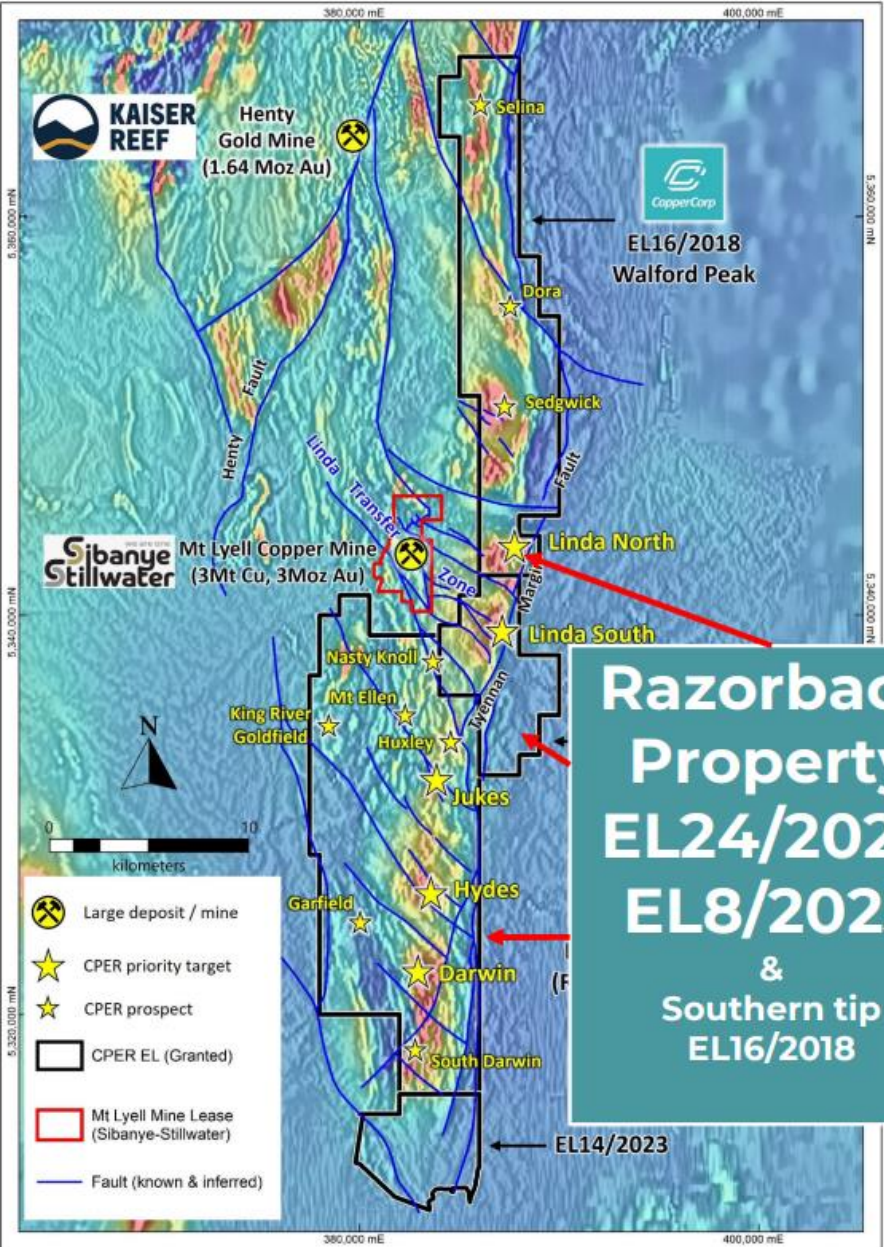


# Project Pipeline – CopperCorp

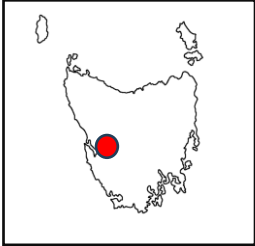
## Copper, Gold and Silver

*Mt Lyell Type*

- Skyline and Razorback projects along trend of world class Mt Lyell Cu-Au deposits
- 23 km of strike length
- Early exploration stage
- Highest priority targets at Jukes and Hydes
  - Jukes drilling
    - 132m @ 0.35% Cu & 0.19g/t Au (JDD001)
    - 50m @ 0.66% Cu & 0.27g/t Au (JDD002W1)
    - 12.6m @ 0.78% Cu, 0.15g/t Au, 3.43g/t Ag (JDD004)
  - Hydes channel sampling
    - 24m @ 0.74% Cu & 0.36g/t Au, with 14m @ 0.97% Cu & 0.56g/t Au



**Razorback Property**  
**EL24/2024**  
**EL8/2023**  
 &  
**Southern tip**  
**EL16/2018**

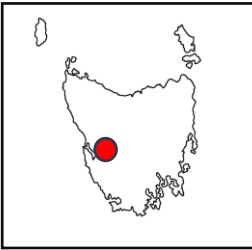


Jukes high grade



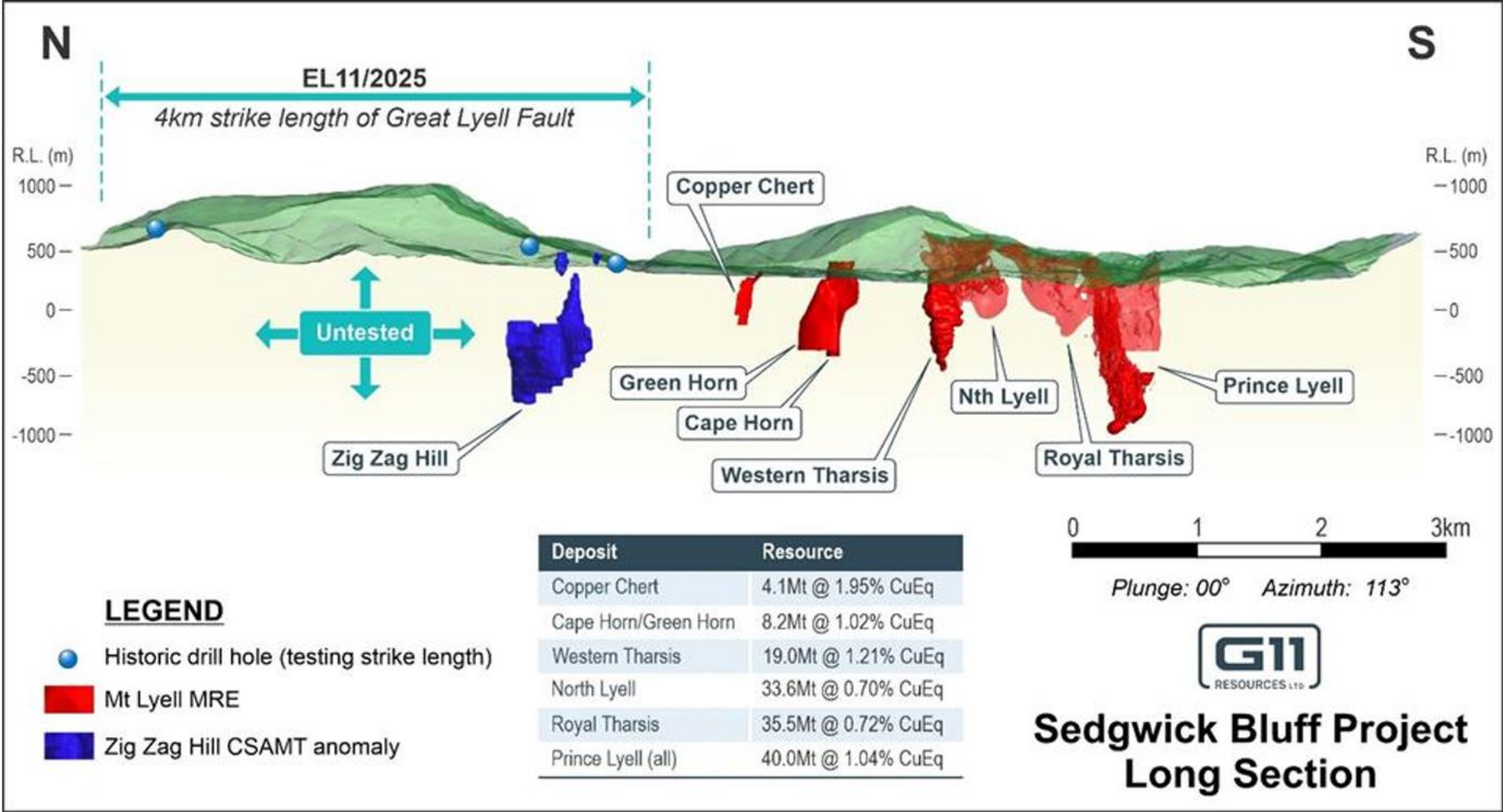
# Project Pipeline – G11 Resources – Sedgewick Bluff

*Mt Lyell Type*



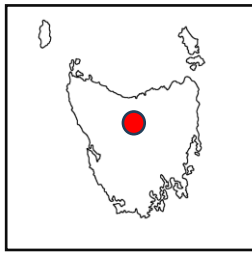
## Copper-Gold

- ASX-listed junior
- 4km of un-explored strike length of the Great Lyell Fault (same structure and stratigraphic sequence as the Mt Lyell ore bodies)
- Drilling commenced at untested CSMAT anomaly at Zig Zag (Jan 2026)



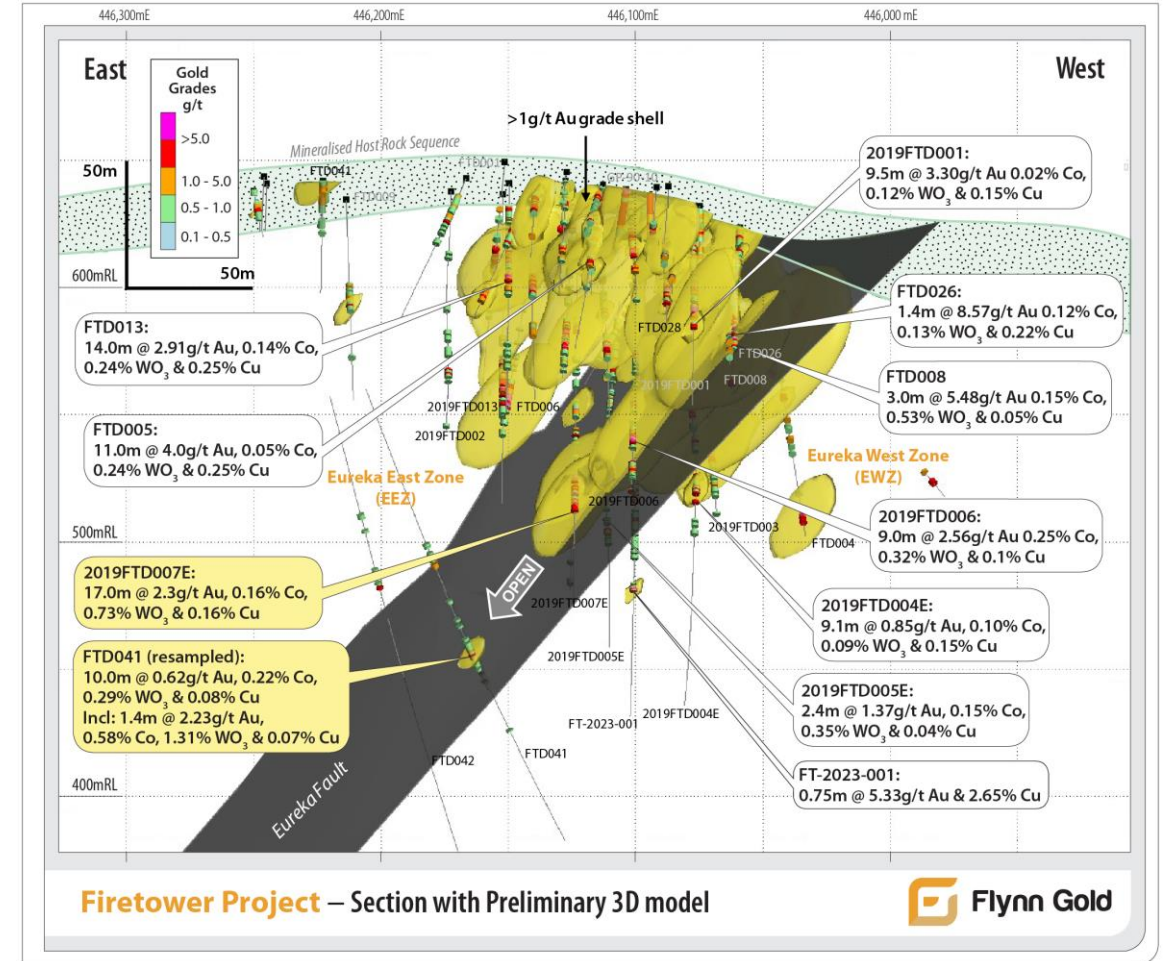
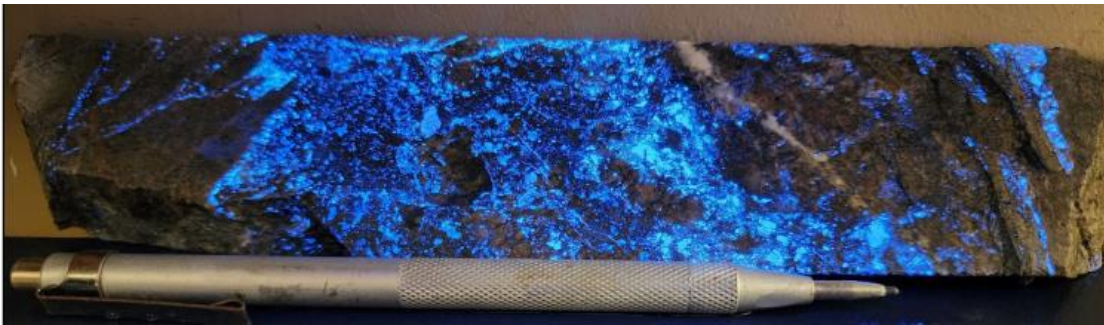
# Project Pipeline – Firetower Au-Co-W-Cu

Cambrian with a Devonian Overprint?



## Gold, Cobalt, Tungsten and Copper

- High-grade gold, copper, cobalt, and tungsten from surface down to ~150m over a 3 50m strike
- Mineralisation remains open along strike and at depth within a 6 km long corridor that's largely untested
- 2025 re-sampling of historical drill core has already revealed standout results, including:  
**17m @ 2.3 g/t Au + 0.73% WO<sub>3</sub> including 0.5m @ 6.6 g/t Au + 3.79% WO<sub>3</sub>**



Section with preliminary model



# Tasmania's two-sided gold story

Dr Rebecca Sproule  
Chief Government Geologist  
Minerals Resources Tasmania



# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## Victoria Australia's Gold-Antimony Destination

Louise Goldie Divko  
Director, Geological Survey of Victoria  
Resources Victoria

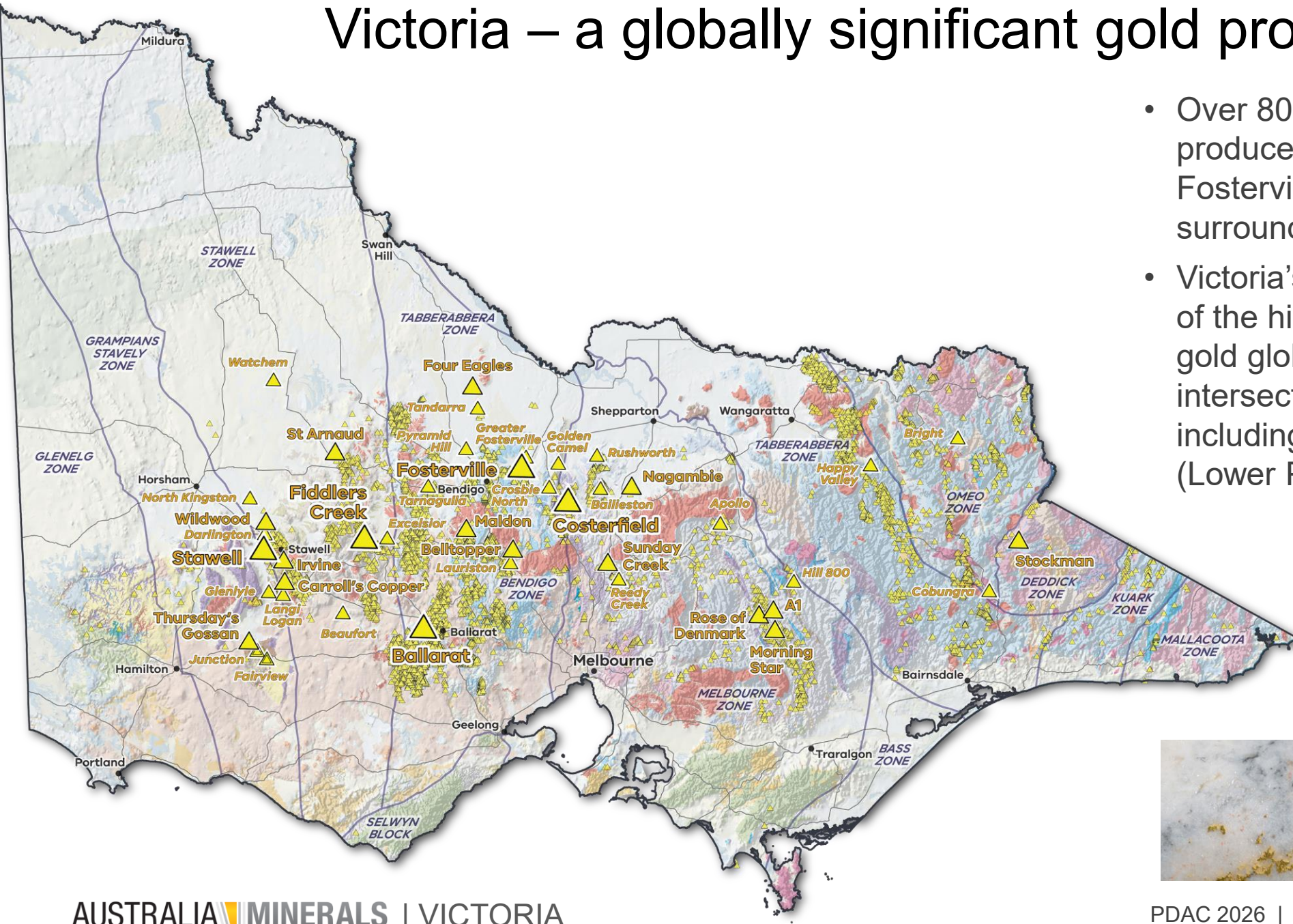


# Victoria, Australia: where in the world?

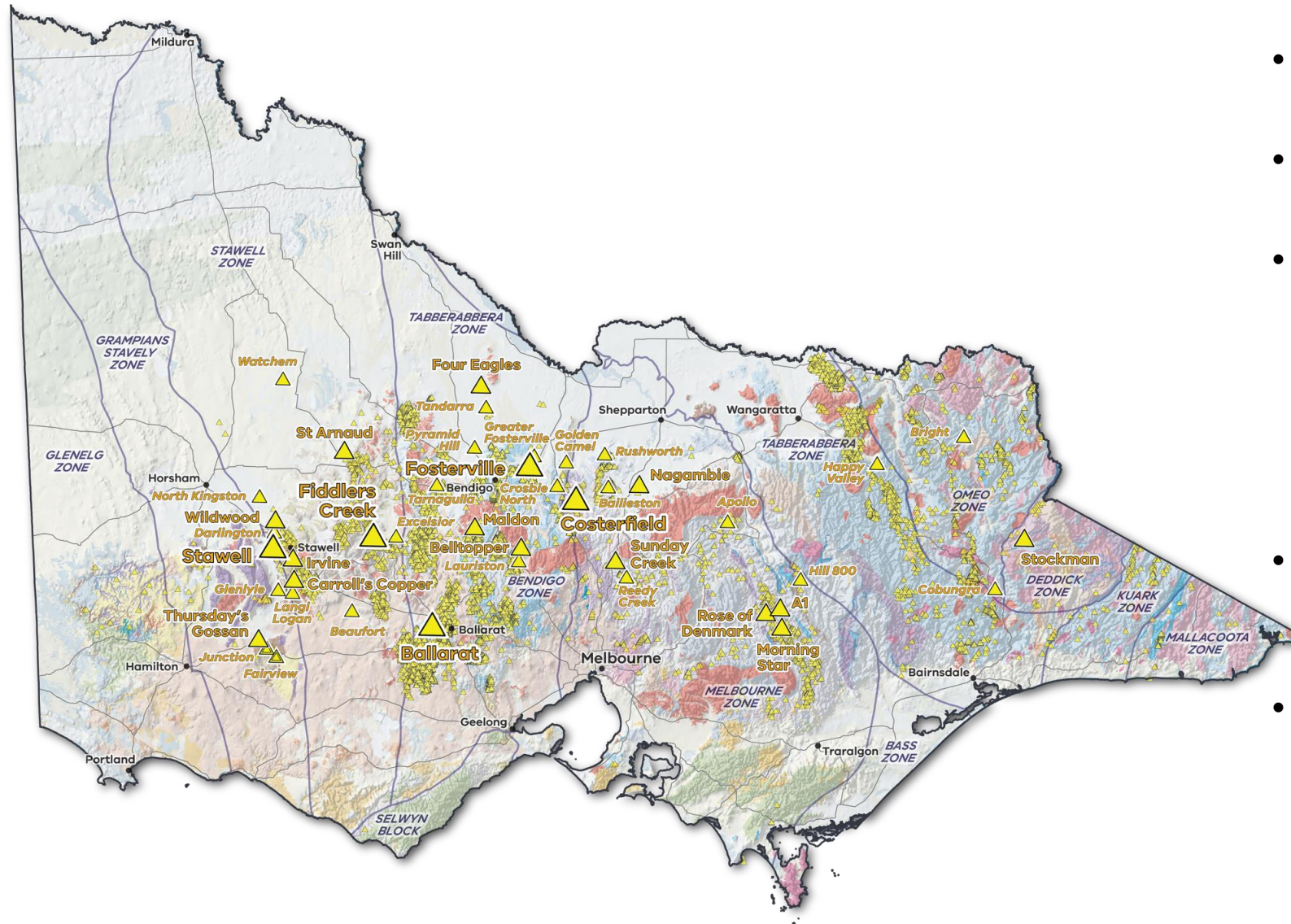


# Victoria – a globally significant gold province

- Over 80 million ounces of gold produced historically from Fosterville, Bendigo, Ballarat and surrounding fields.
- Victoria's geology has yielded some of the highest-grade underground gold globally in recent times - intersections of 5.7m @ 72.8 g/t Au, including 0.28m @ 1,383.2 g/t Au (Lower Phoenix ore zone).



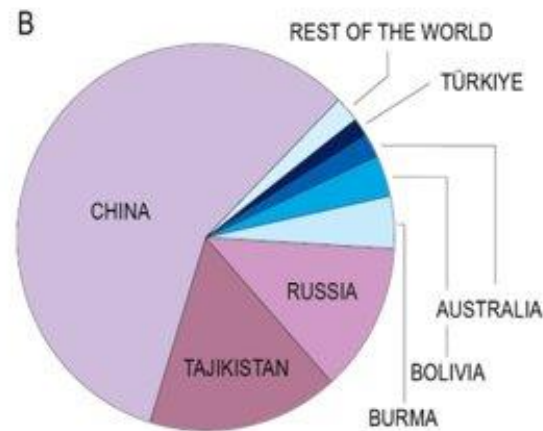
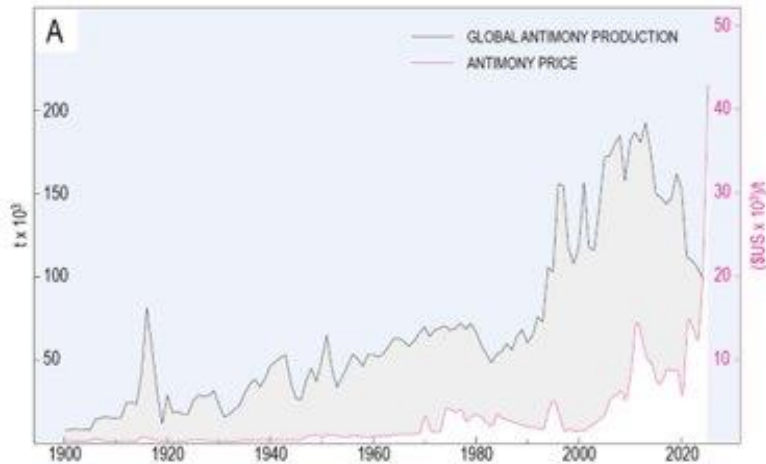
# Victoria – a modern, high-grade exploration destination



- Predicted 75 million ounces yet to be found in the northern part of the state alone
- Active junior exploration industry - 92 explorers across 288 licences
- \$103.7M on mineral exploration including \$72M on gold in 2024-2025FY and trending upwards in 2025-2026FY; Gold trending up 21.1% in 25-26FY to date
- Falcon Metals Blue Moon 2.75m @ 41.9g/t Au from 605.3m; including 0.5m @ 222g/t Au from 607.55m
- Southern Cross 559m mineralised corridor averaging 2.5 g/t AuEq (including six >20 g/t AuEq intervals and three assays >100 g/t Au); an ultra high-grade intercept of 1.3m @ 670 g/t AuEq from 869m depth.

# Antimony

- A critical mineral with global impact
- Stibnite - accessory mineral in gold bearing quartz veins
- 5% of world production at peak in recent years from Costerfield



Source: USGS, 2024



Stibnite, Sunday Creek. Courtesy Southern Cross Gold

# The emerging Antimony story

**Discovery:** 1851

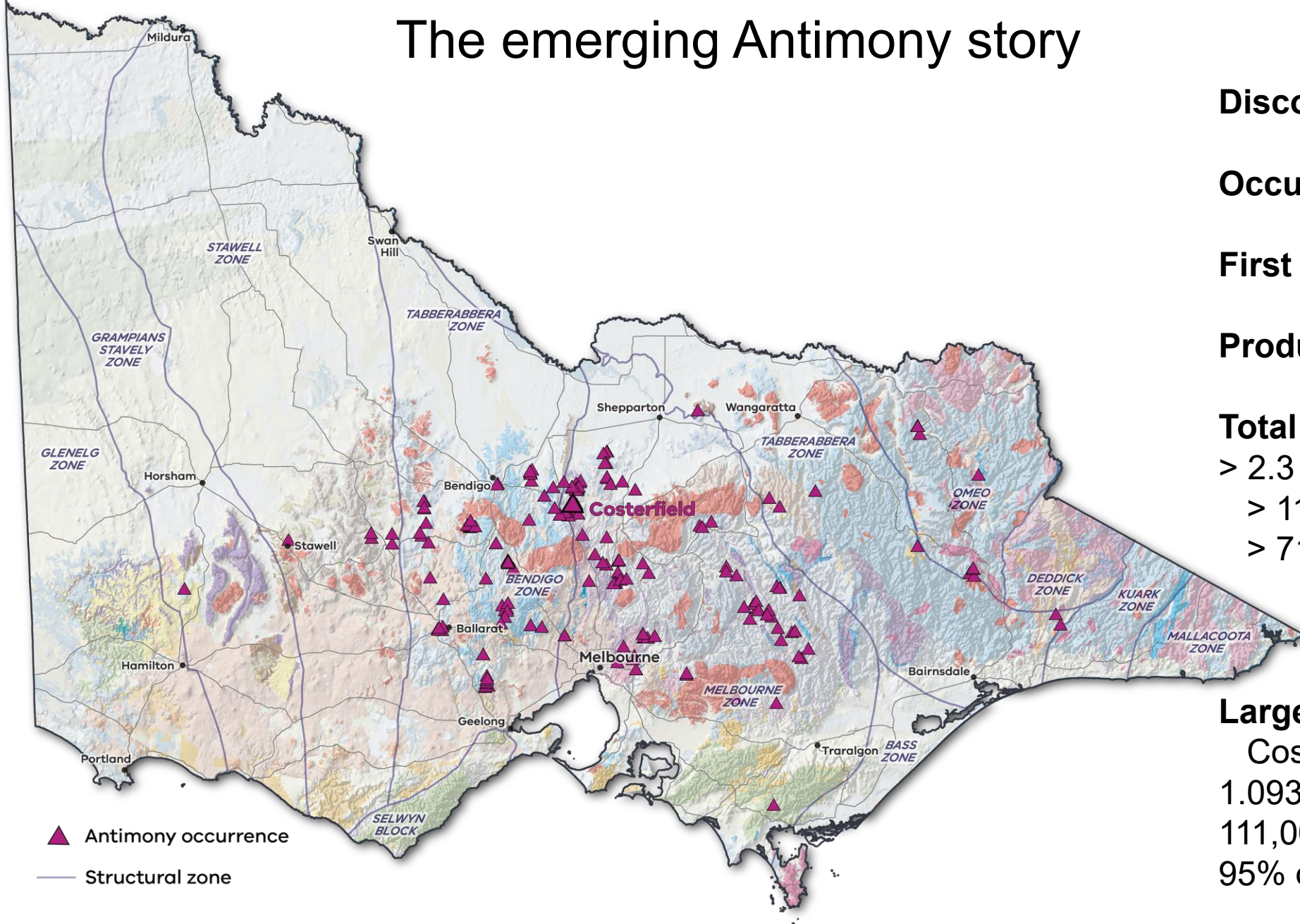
**Occurrences:** 283

**First ore:** 1862(?)

**Production centres:** 113

**Total recorded production:**  
> 2.3 Mt antimony ore, including  
> 111 kt antimony conc. and  
> 71 kt antimony metal

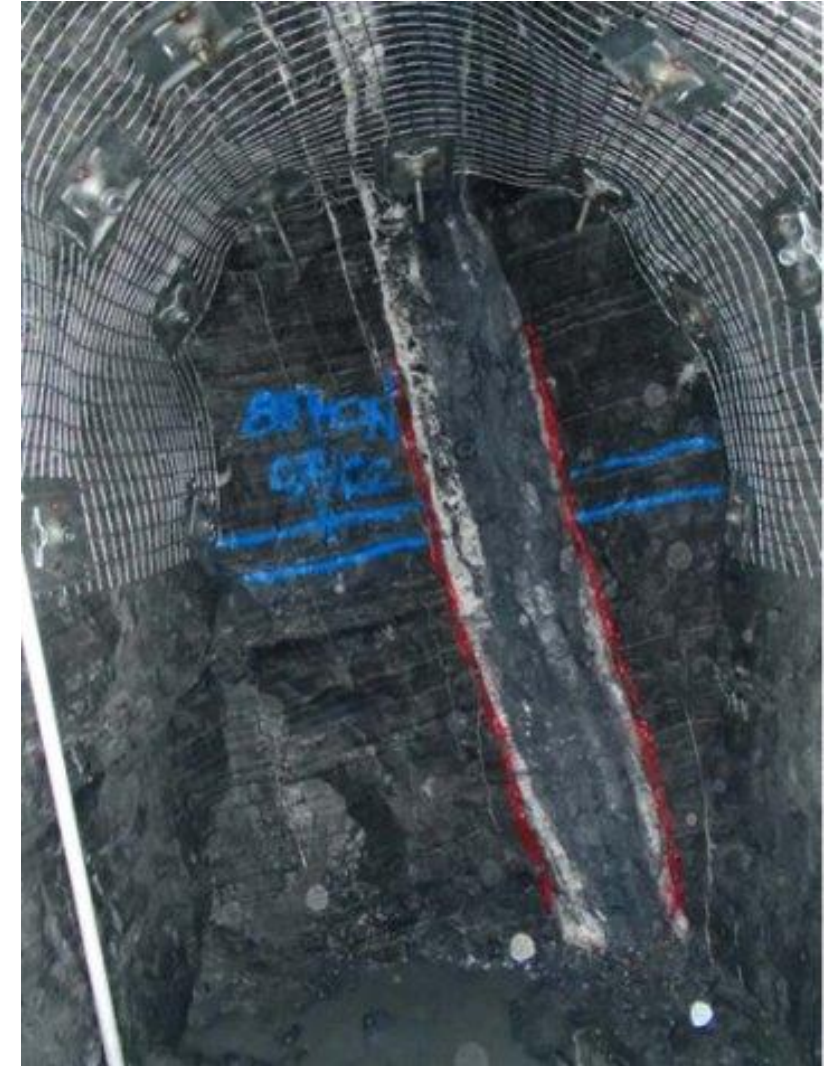
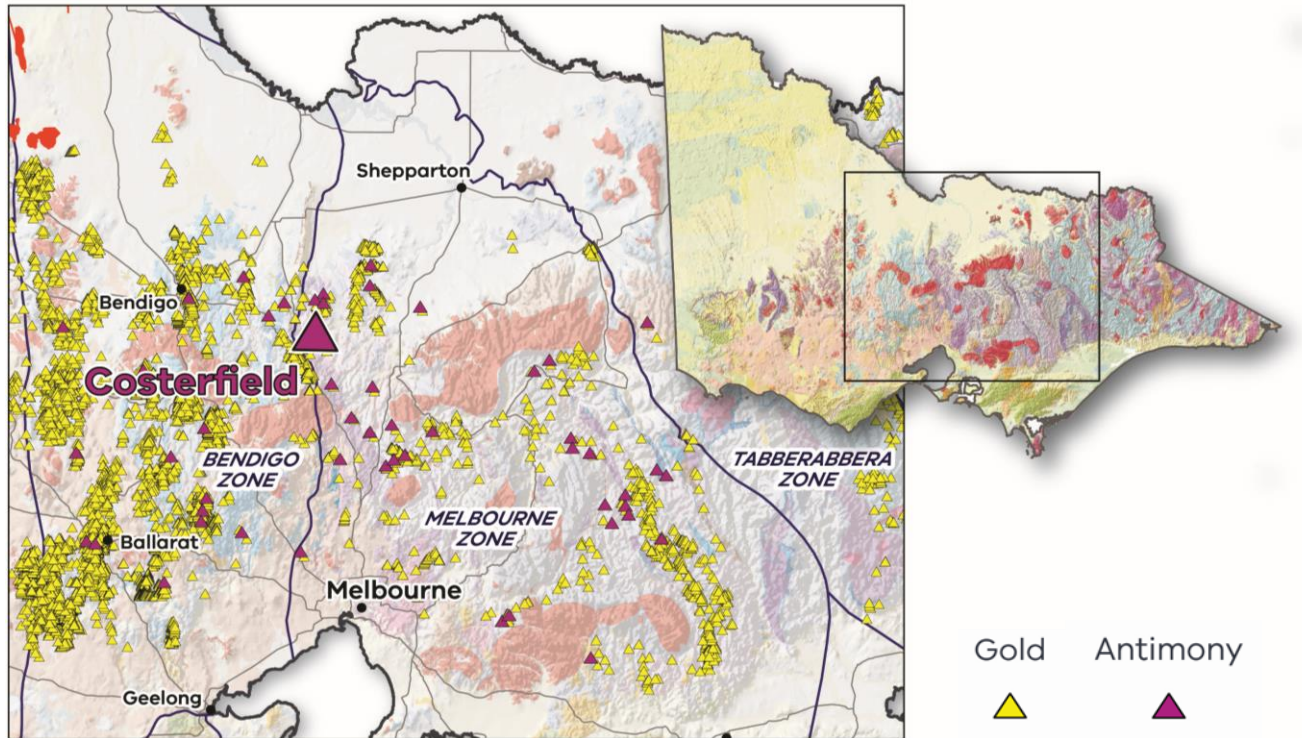
**Largest deposit:**  
Costerfield (c.2Moz AuEq)  
1.093 Moz Au  
111,000t Sb  
95% of its ore tonnes since 2009



# Costerfield - Australia's only producing antimony mine

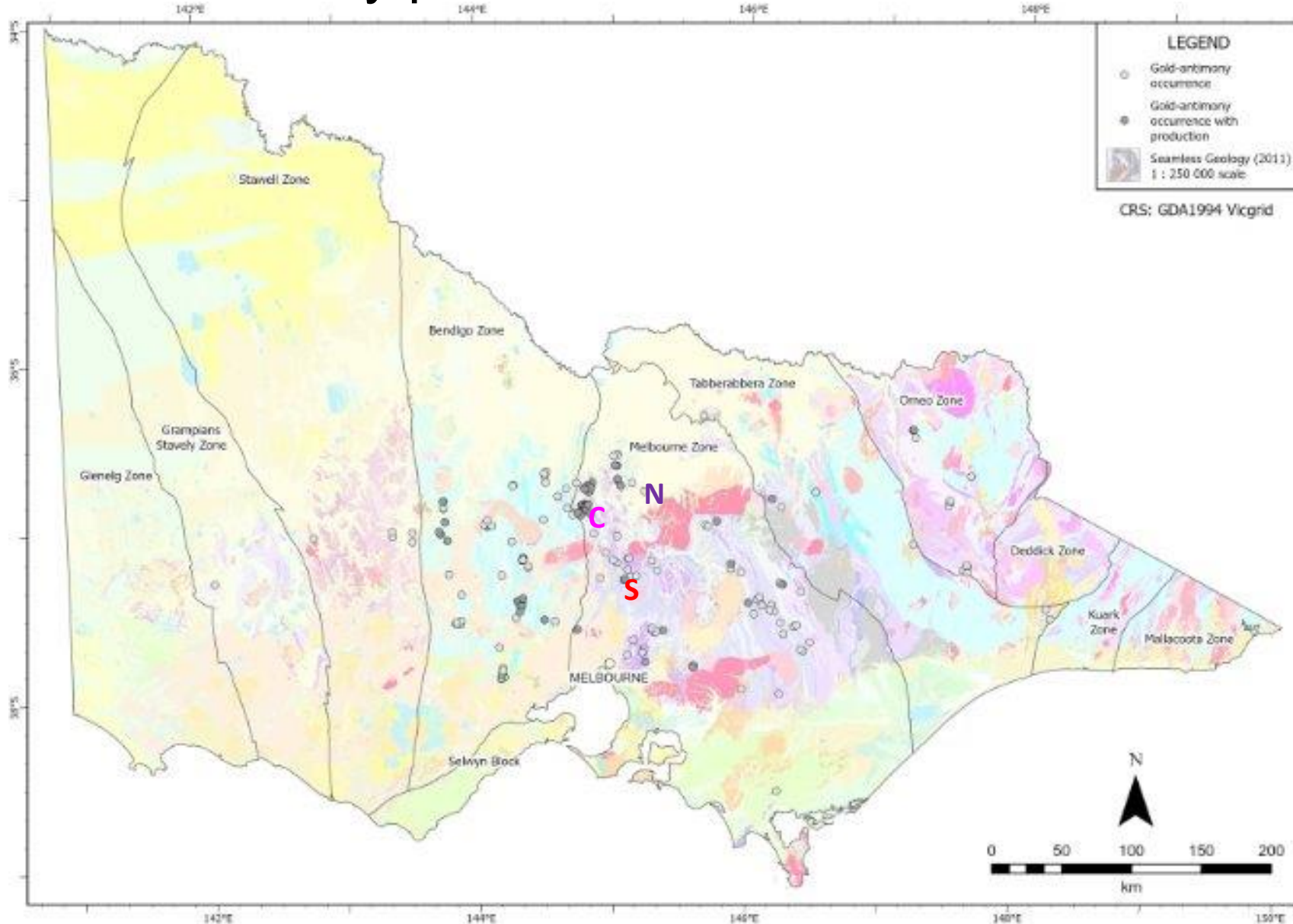
2024 gold production	Gold Grade	2024 antimony production	Antimony Grade
43,346 ounces	11.05 g/t Au	1,282 tonnes	1.83% Sb

2026 production guidance	
Gold	Antimony
37-41 k oz.	750-850 t



Steep dipping massive stibnite-quartz vein cross cutting bedding, Cuffley lode, Costerfield ([Fenwick, 2019](#)).

# Gold-Antimony production



## Sunday Creek

41kOz Au

27t ore for 3t Sb metal over 4 discontinuous years (1876-1883)

## Mineral exploration target

8.1 – 9.6Mt: 6.4-8.3g/t Au, 0.8-0.9% Sb for 2.6Moz Au and 88.2kt Sb

## Nagambie

148kOz Au

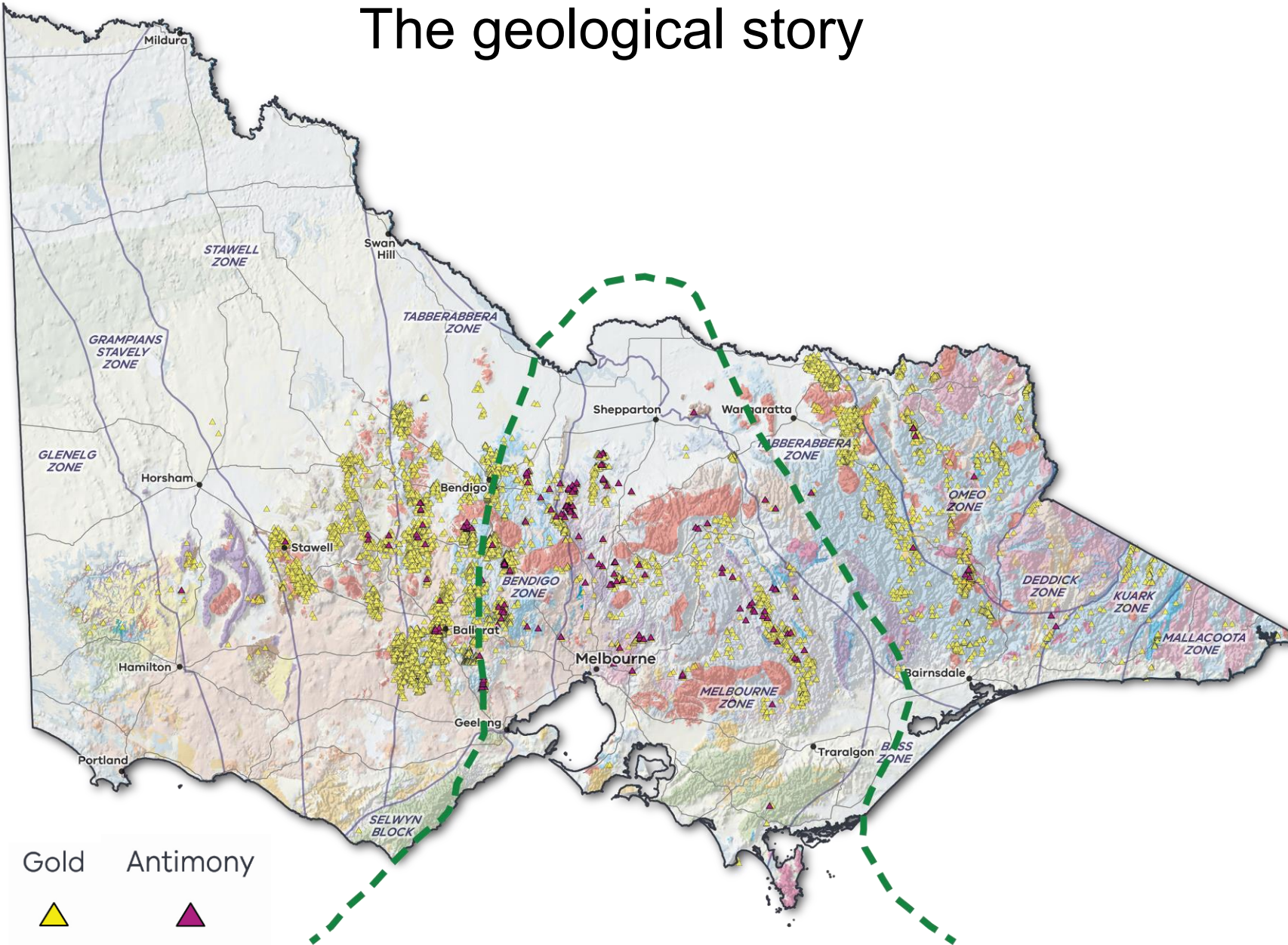
No antimony production.  
2006 drill hole beneath West Pit:  
7.2g/t Au and Sb 12.3%

## Inferred mineral resource

539,000t: 3.3g/t Au, 3.9% Sb for 58koz Au and 20.8kt Sb

+ 20 antimony explorers across 44 licences

# The geological story



- Antimony coincident with gold
- 12 structural zones across the state
  - Antimony mainly in the Melbourne Zone and the eastern part of the Bendigo Zone
- Orogenic event in the Devonian
  - linked with the collision of a NeoProterozoic microcontinent collider, known as the Selwyn block (green line) and
  - magmatism

# Victorian Critical Minerals Roadmap

Resources for Net Zero

**VICTORIA**  
State  
Government



Theme 1  
Mapping the opportunities



Theme 2  
A modernised regulatory regime



Theme 3  
Critical minerals production and processing in Victoria



Theme 4  
Sharing the benefits of Victoria's minerals

# Strong regulatory support driving exploration and development



Fosterville gold mine – approvals securing site operation for the next 10 years



Southern Cross Gold – exploration decline approved supporting rapid resource definition



Catalyst Metals – exploration decline approved



Resources Victoria Approvals Coordinator

# New critical minerals studies

## Sediment-hosted copper potential of middle Devonian to early Carboniferous rocks of the Howitt Province, east-central Victoria

S.D. Boger, S. Schmid, R.A. Cayley & S.A.F. Waugh

Victoria's Critical Minerals and Strategic Materials  
Report 1

## An evaluation of rare earth elements, phosphorus, vanadium and rhenium in sediment starved stratigraphy in Victoria

T.M. Andrews & R.A. Cayley

Victoria's Critical Minerals and Strategic Materials  
Report 2

## An evaluation of high-purity alumina and rare earth elements in select clay occurrences of central Victoria

T.M. Andrews & R.A. Cayley

Victoria's Critical Minerals and Strategic Materials  
Report 3

## Critical minerals geoscientific database

T.M. Andrews

Victoria's Critical Minerals and Strategic Materials  
Report 4

## Re-Os geochronology of Victorian mineral occurrences

S.A.F. Waugh, R.A. Creaser, C.P. Cairns, R.J. Duncan & R.A. Cayley

Victoria's Critical Minerals and Strategic Materials  
Report 5

## U-Pb cassiterite, scheelite and wolframite ages from Victorian tin and tungsten occurrences

S.A.F. Waugh, C.S. Holm-Denoma, N.E. Wintzer & C.P. Cairns  
Victoria's Critical Minerals and Strategic Materials  
Report 6

## Dyke-hosted copper-nickel-platinum group element mineralisation in Victoria

S.D. Boger, T.U. Schlegel & R.R. Keays

Victoria's Critical Minerals and Strategic Materials  
Report 7

## An evaluation of zirconium, niobium and rare earth elements in alkaline silicate igneous rocks in Victoria

T.M. Andrews, Z. Pintér, R.A. Cayley & S.D. Boger

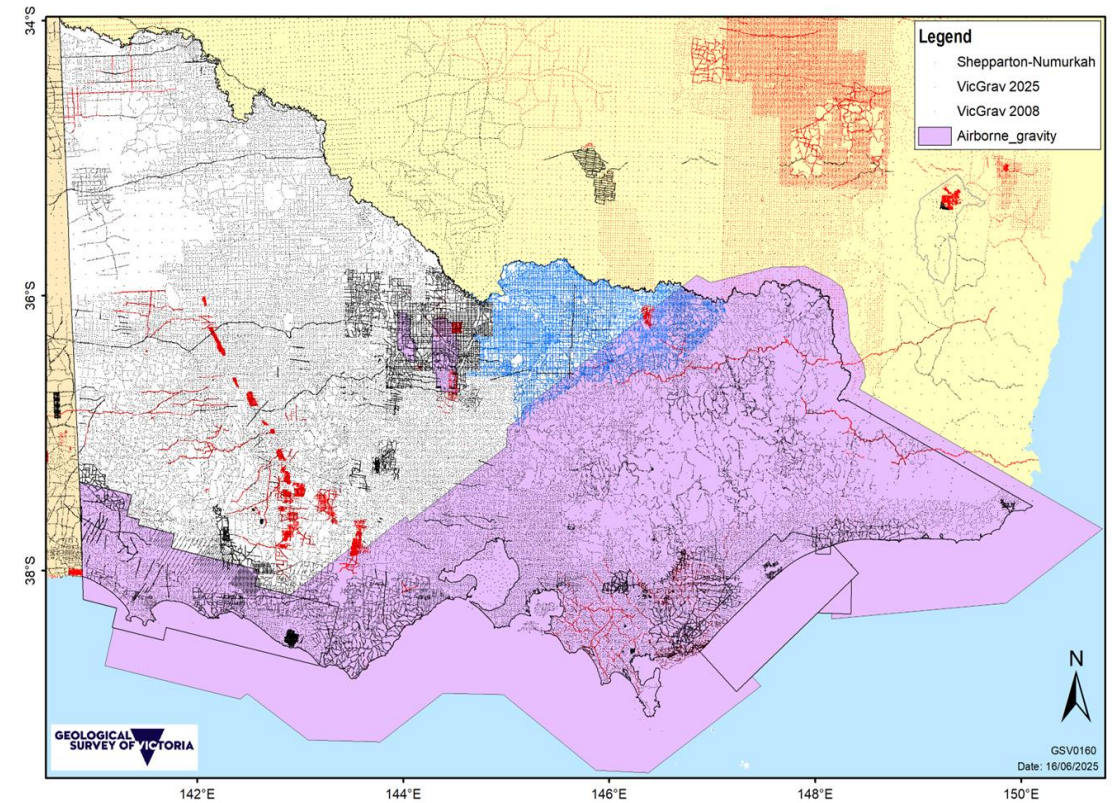
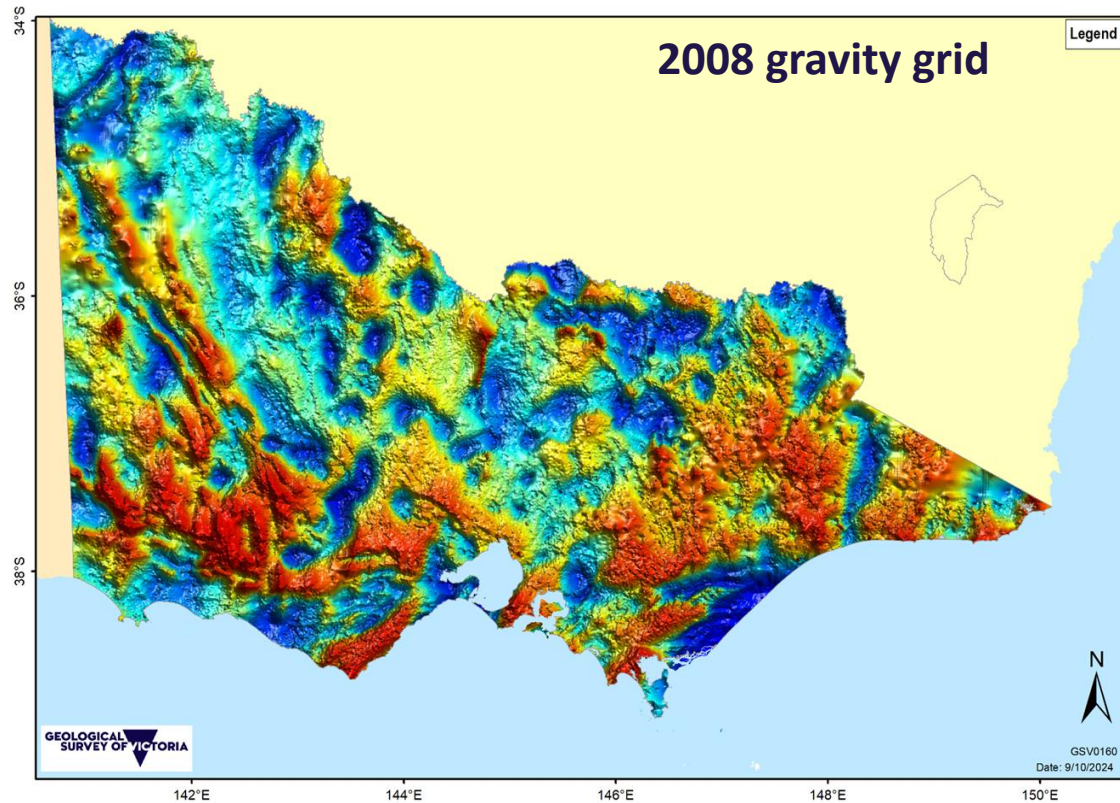
Victoria's Critical Minerals and Strategic Materials  
Report 8

BIG Antimony report coming up next!



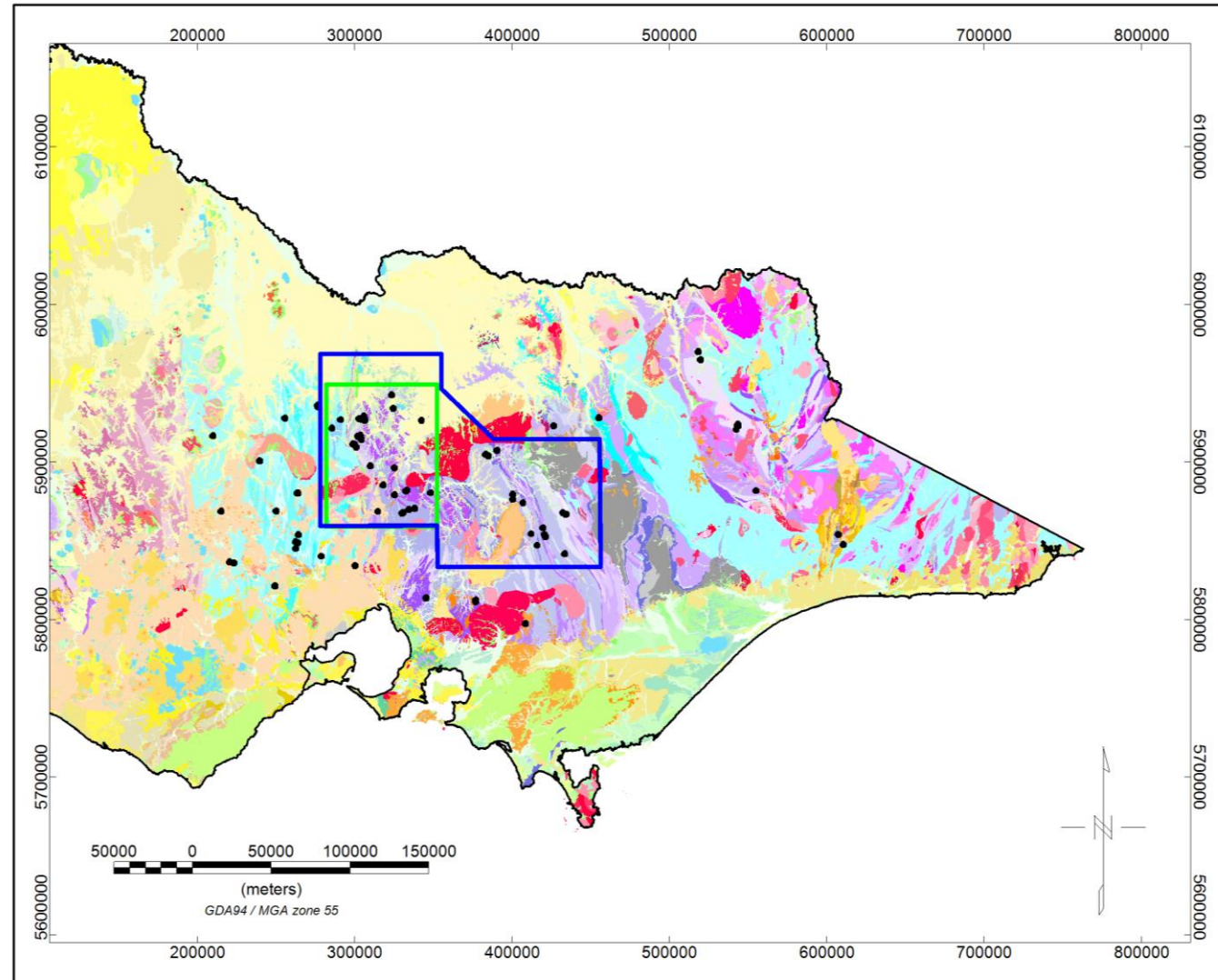
# Next generation statewide gravity map

- Since 2008 an additional 72,295 ground gravity stations have been acquired as well as several hundred-thousand-line kilometres of airborne gravity
- Opportunity to improve Victoria's regional gravity dataset by merging ground and airborne data
- QC'ing and reviewing data, testing workflows, building digital terrain models



# Airborne Electromagnetics survey

- New regional airborne electromagnetic survey in the central Melbourne Zone in 2026
- In collaboration with Geoscience Australia
- 5 km line spacing
- Over known antimony mines, projects and occurrences and tagging the margin of the Murray Basin (northern Melbourne Zone)
  - Geological mapping and structure
  - Groundwater baseline
  - Aid targeted exploration



# Victoria's geoscience: A wealth of freely accessible information

## Pre-competitive data and knowledge

- [Free maps, reports and data](#)
- [GeoVic](#) – free online mapping application

## Geology

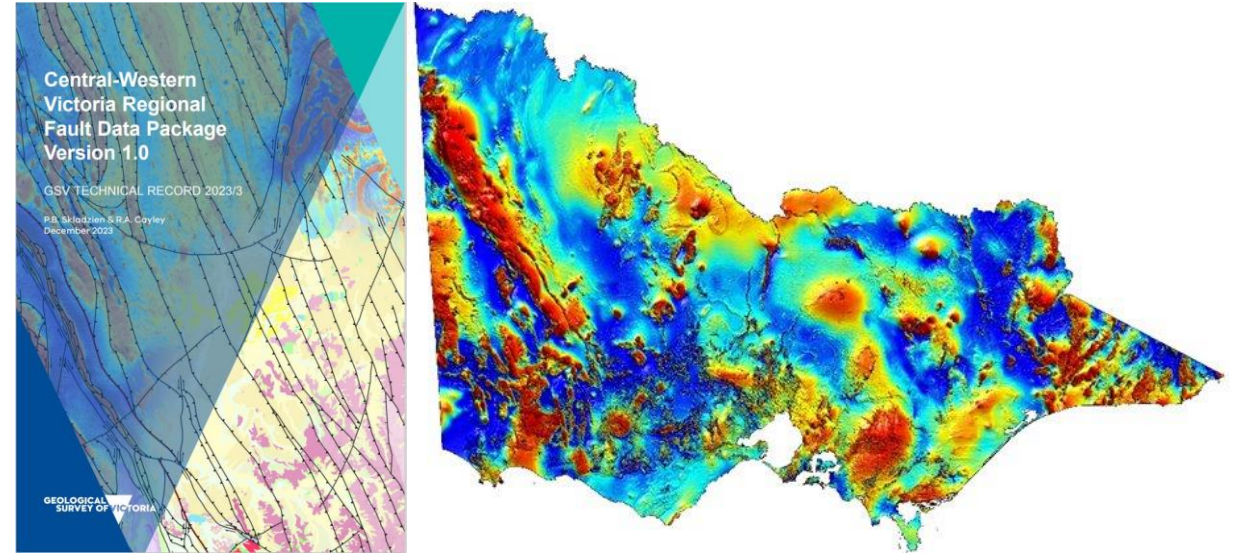
- Seamless – [1:250k](#) and [1:50k](#)
- [3D geological full crust model](#)

## Geophysics

- Modern, state-wide

## Drill Core Library

- 1.5 million metres of drill core and cuttings
- [>13,000 drill holes](#)



AUSTRALIA  MINERALS

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# Victoria

## Australia's gold-antimony destination

[louise.goldiedivko@deeca.vic.gov.au](mailto:louise.goldiedivko@deeca.vic.gov.au)  
Director, Geological Survey of Victoria  
Resources Victoria



# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## WESTERN AUSTRALIA'S EXPLORATION INCENTIVE SCHEME

Success Stories

Dr Charlotte Hall  
General Manager Investment  
Geological Survey of Western Australia

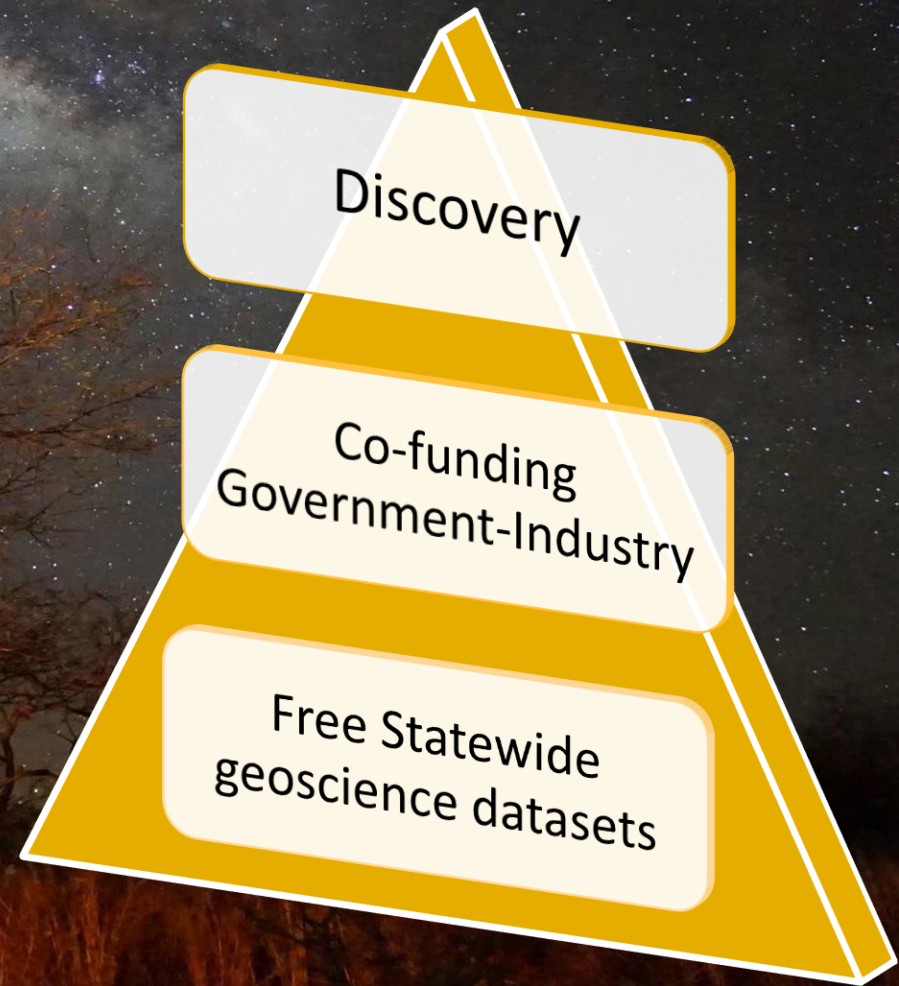


Department of Mines,  
Petroleum and Exploration

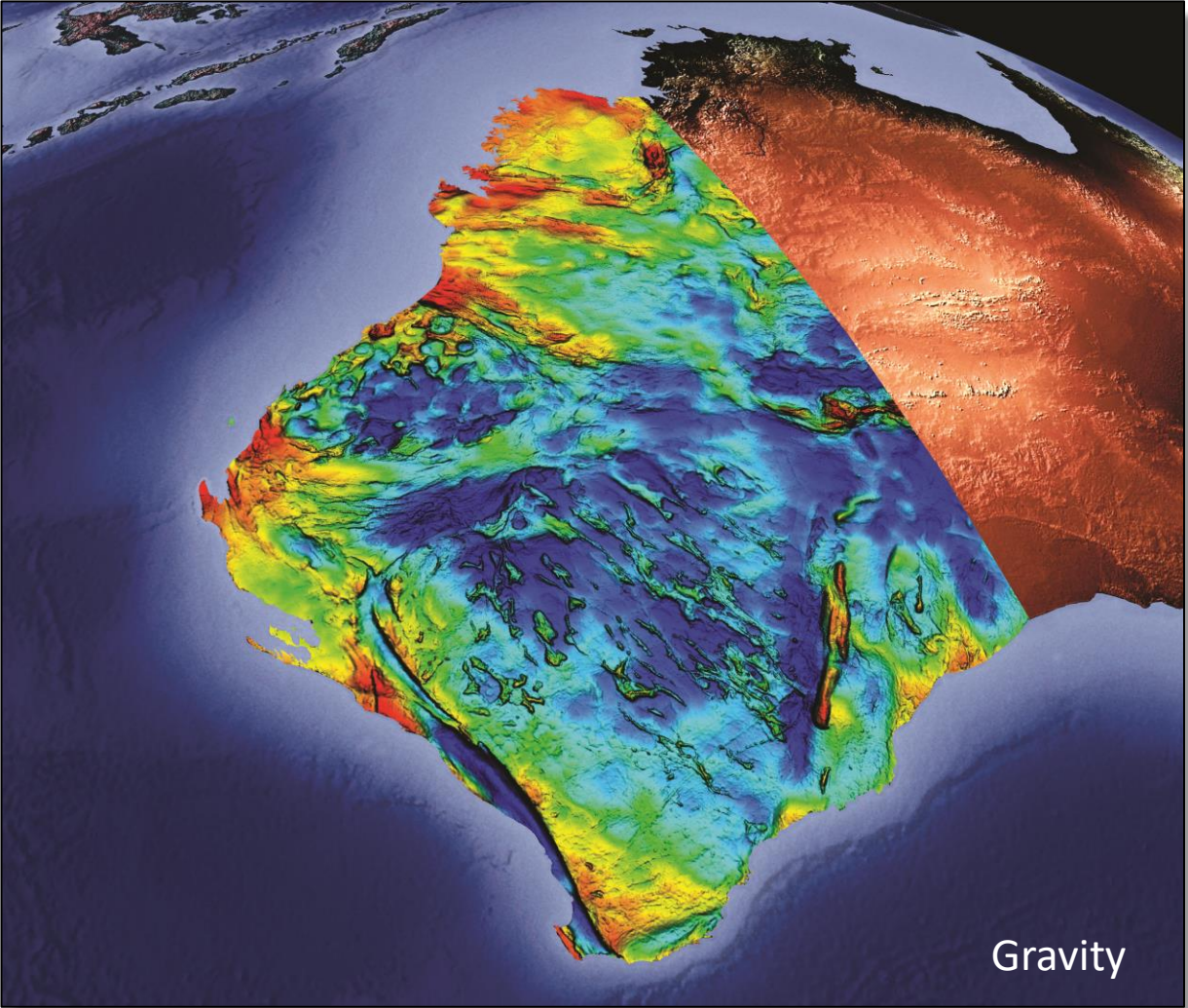
# Western Australia – Expansive Lands, Exceptional Endowment



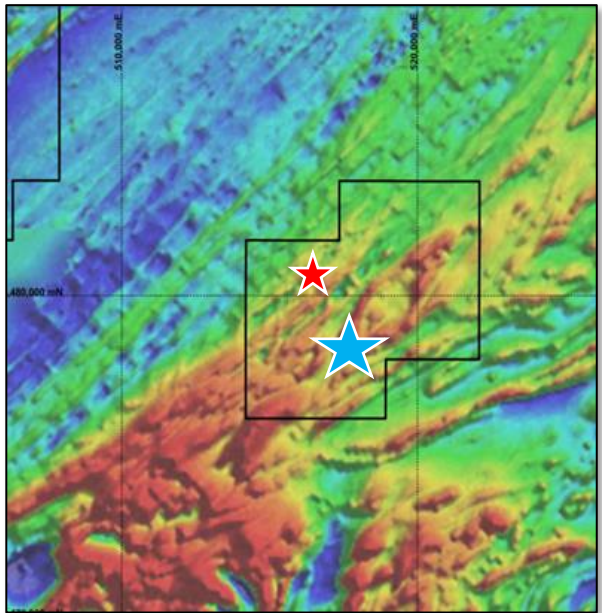
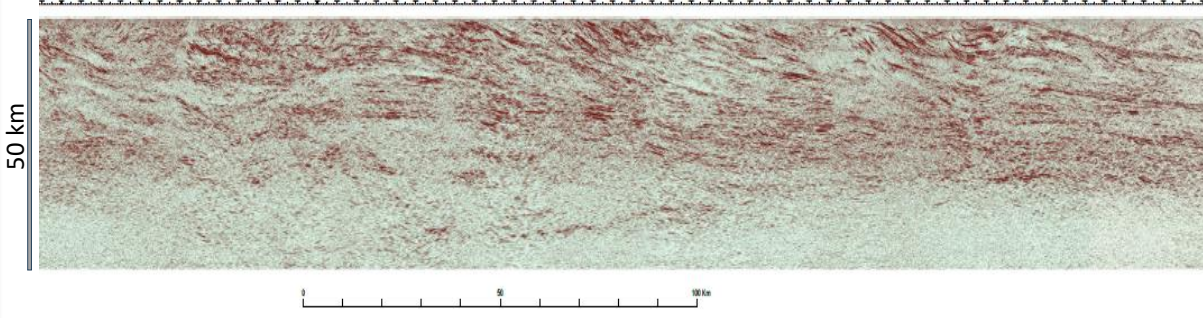
# Exploration Incentive Scheme – Success stories



# Exploration Incentive Scheme –Driving Exploration, Discovery & Growth



23GSWA-SW1 — Pre-Stack Depth Migration Image (depth section)

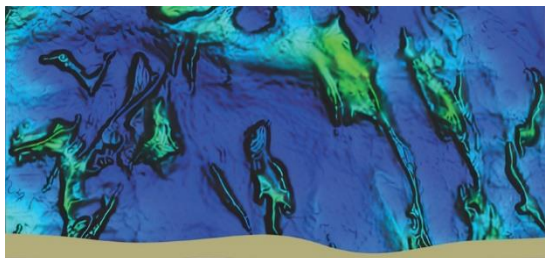


- ★ Govt. soil Geochem anomaly
- ↓
- Govt (EIS) Aeromagnetics
- ↓
- Govt (EIS) co-funded drilling
- ↓
- ★ Mine discovered Nova Ni-Cu-Co

# Co-funding – Accelerating discovery, adding knowledge for explorers



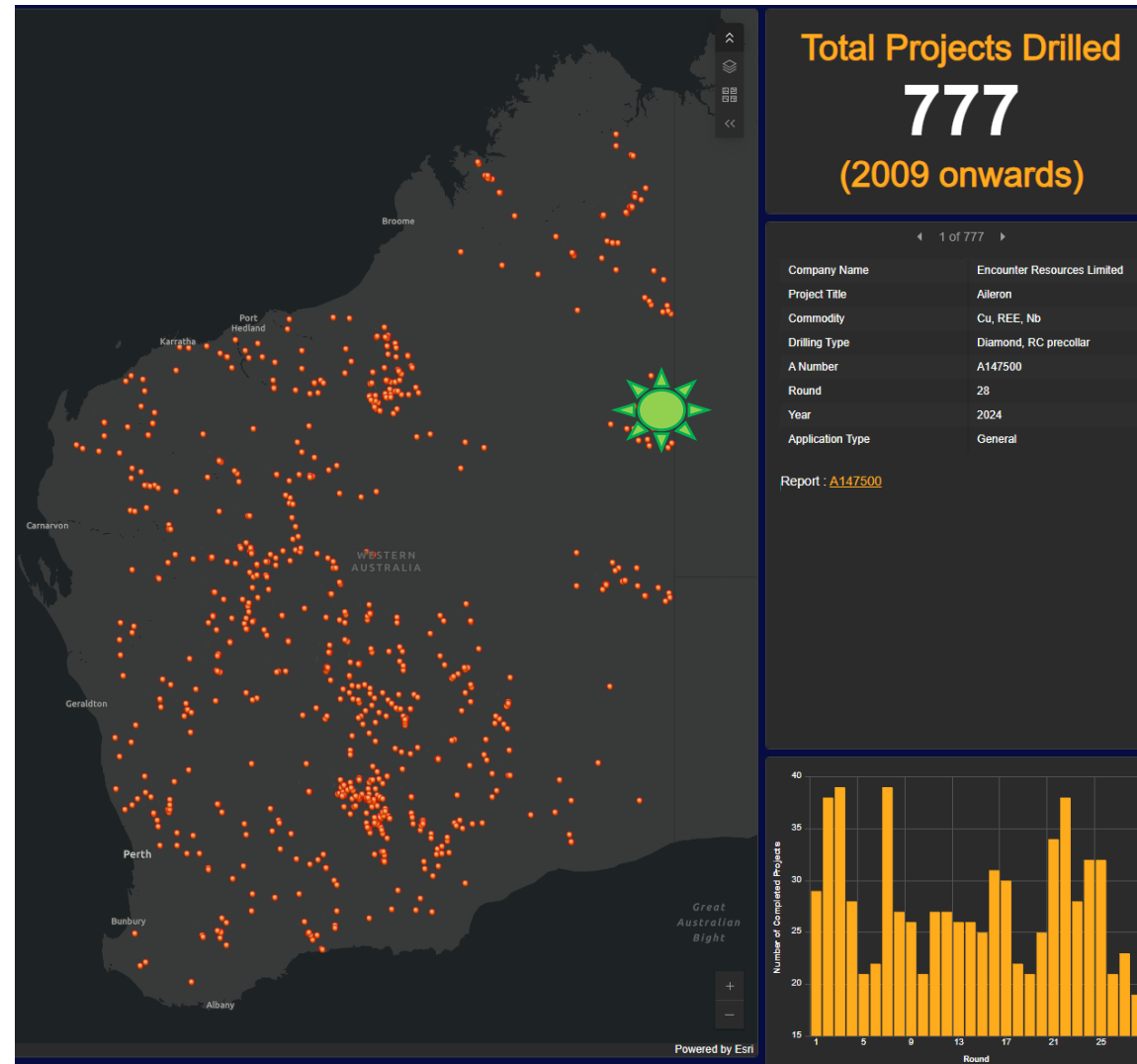
Co-funded exploration drilling



Co-funded geophysics



Co-funded energy analysis



Company Name	Encounter Resources Limited
Project Title	Aileron
Commodity	Cu, REE, Nb
Drilling Type	Diamond, RC precollar
A Number	A147500
Round	28
Year	2024
Application Type	General

Report : [A147500](#)

# **The Aileron Discovery – the beginning of Australia's next great mineral province...**

PDAC - Toronto, Canada

1-4 March 2026

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The information in this report that relates to Exploration Results is based on information compiled by Mr. Mark Brodie who is a Member of the Australasian Institute of Mining and Metallurgy. Mr. Brodie holds shares and options in and is a full time employee of Encounter Resources Ltd and has sufficient experience which is relevant to the style of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Brodie consents to the inclusion in the report of the matters based on the information compiled by him, in the form and context in which it appears.

The Company confirms that it is not aware of any new information or data that materially affects the information in the relevant ASX releases and confirms that it is not aware of any new data or information that materially affects the information disclosed in this announcement and previously released by the Company in relation to mineral resource estimates. All material assumptions and technical parameters underpinning the mineral resource estimates in the relevant market announcements continue to apply and have not materially changed.

The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

This announcement has been approved for release by the Board of Encounter.

# West Arunta

## Australia's Next Great Mineral Province

### Exceptionally well mineralised suite of intrusions

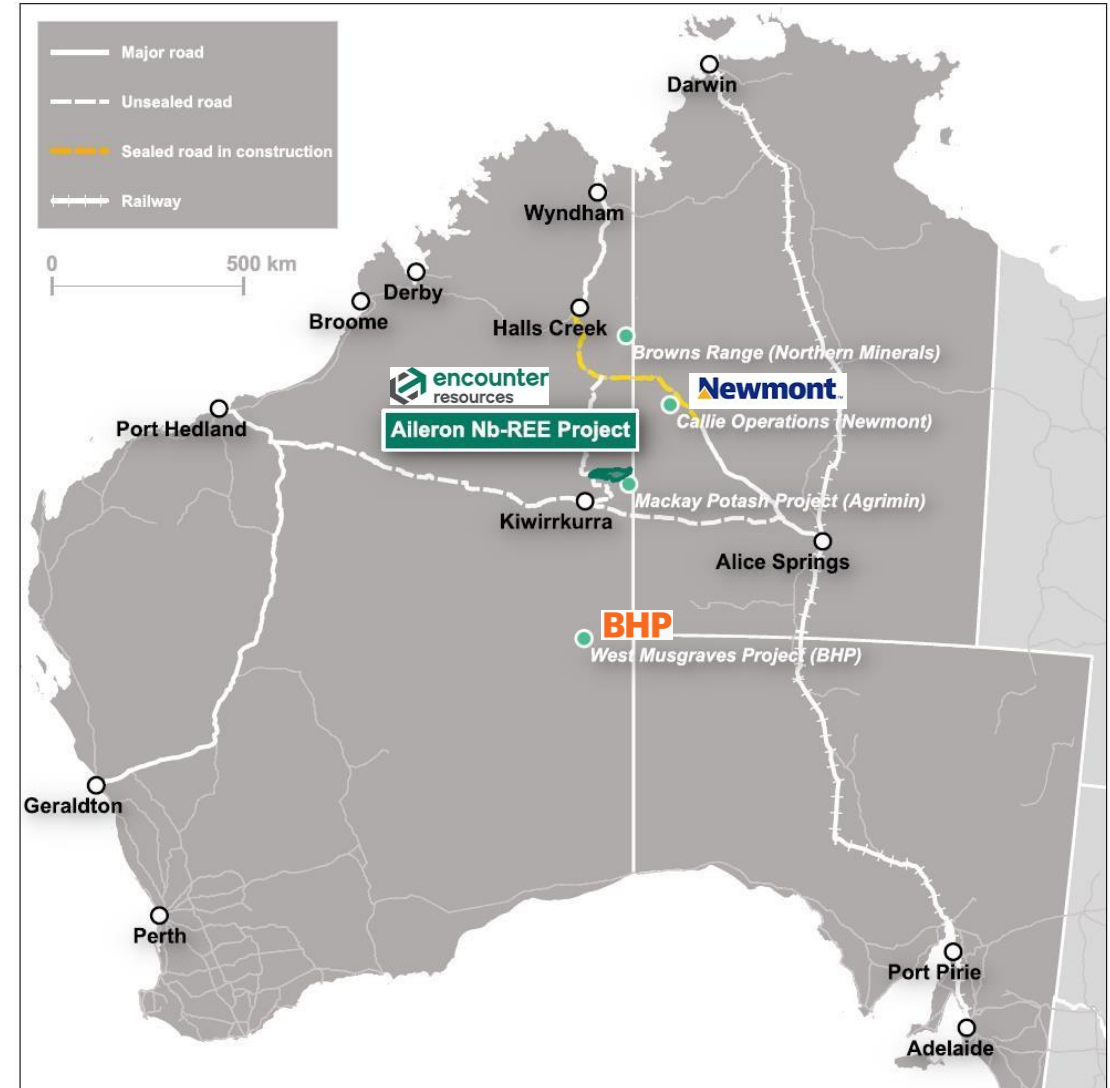
- High-grade niobium deposits were found fast
- Globally significant niobium resources
- Super low discovery cost:
  - ~A\$40/t discovery cost per tonne of Nb (US\$45,000/t)

### Potential for more than high-grade niobium

- Carbonatites host significant REE
  - 7.3m @ 6.3% TREO & 8.1% Nb<sub>2</sub>O<sub>5</sub> from 90.7m
  - 52m @ 1.7% TREO from 81m, incl. 16m @ 3.3% TREO
- IOCG copper and orogenic gold

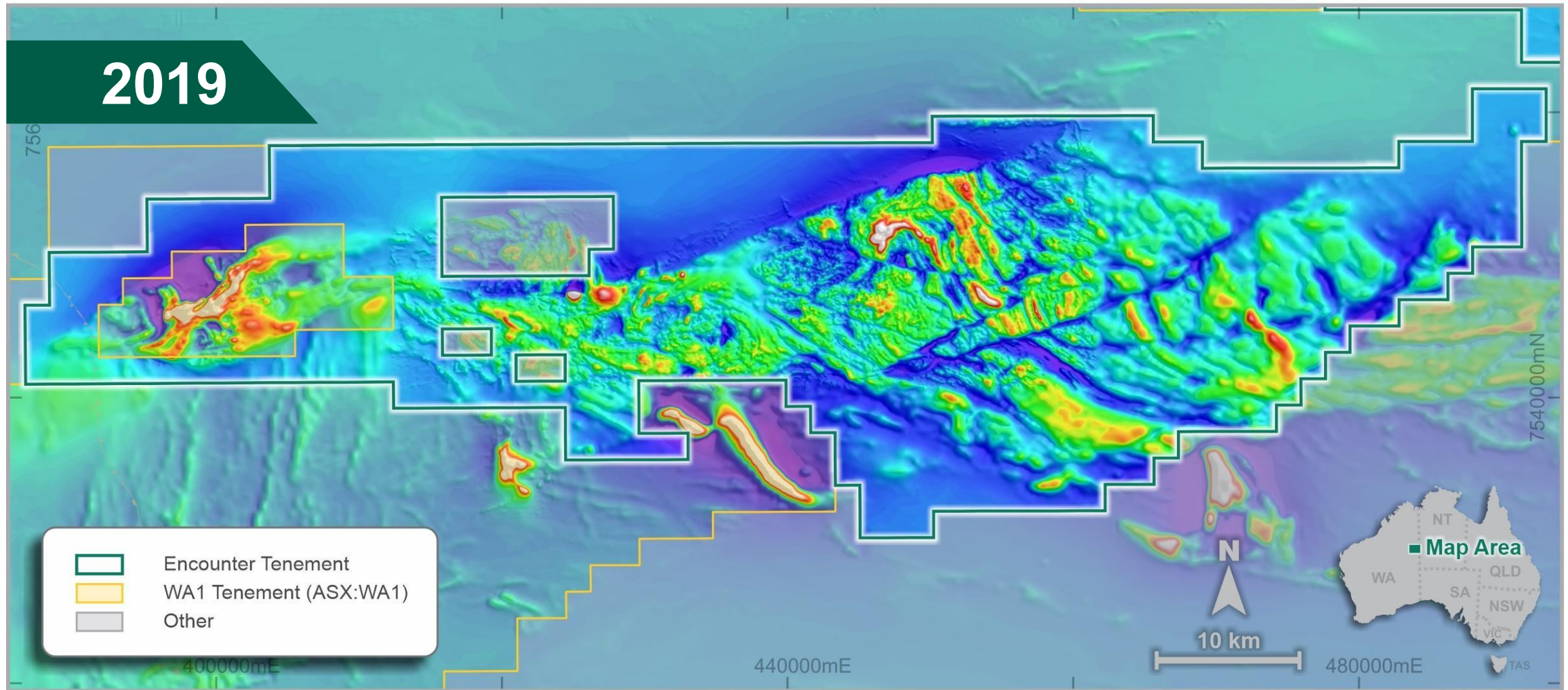
### Emerging critical minerals corridor in Central Australia

*The most important discoveries in this region may still be ahead of us...*



# Aileron Project - West Arunta

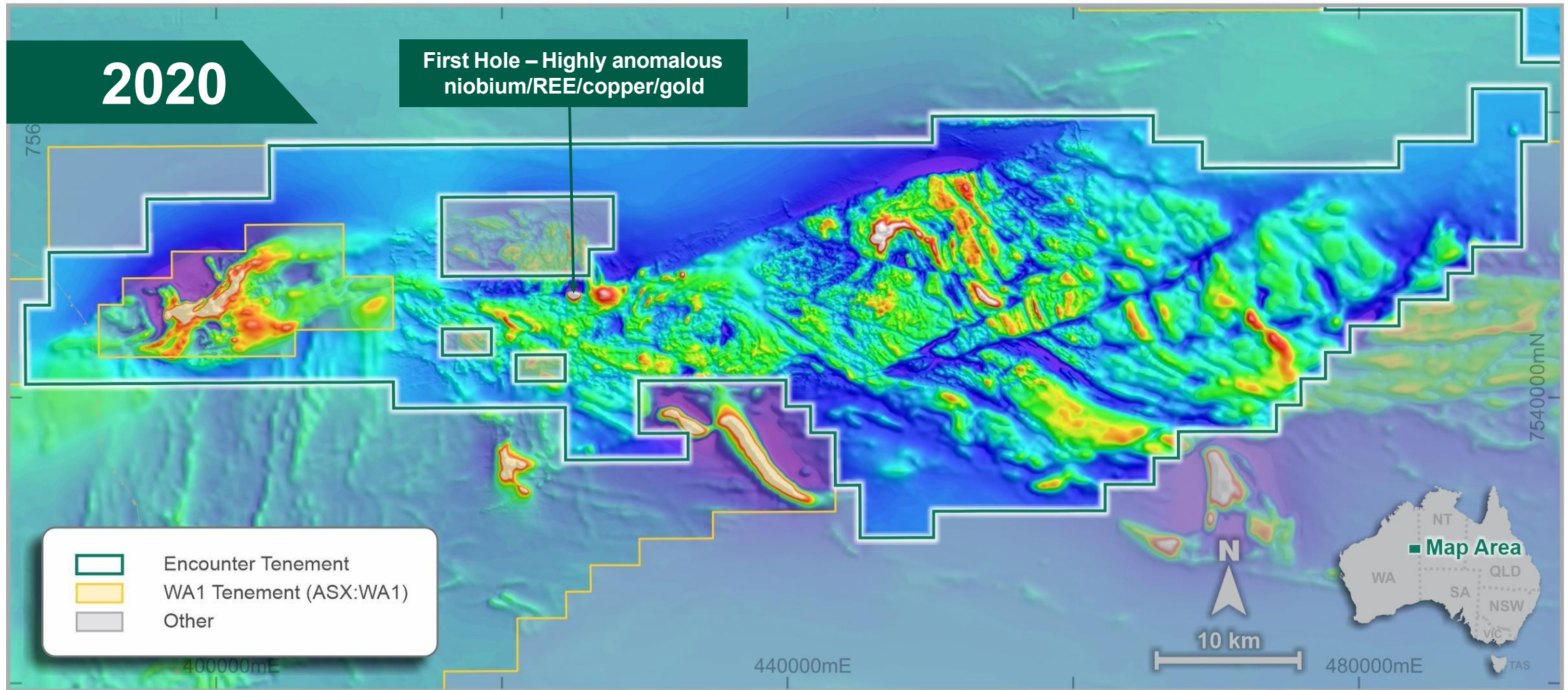
Targeted for IOCG copper-gold – zero previous exploration on the tenements



Aileron project – Magnetics (RTP)

# Aileron Project - West Arunta

October 2020 – partially completed drill hole highly anomalous in copper-REE-gold and niobium...



Aileron project – Magnetics (RTP)

# Aileron – West Arunta – EAL001 – The hole that started it all...

Western Australian Government - Exploration Incentive Scheme - Co-Funded Drill Hole



Self sufficient – a long way from help



Satellite Communications

*...the days before Starlink*

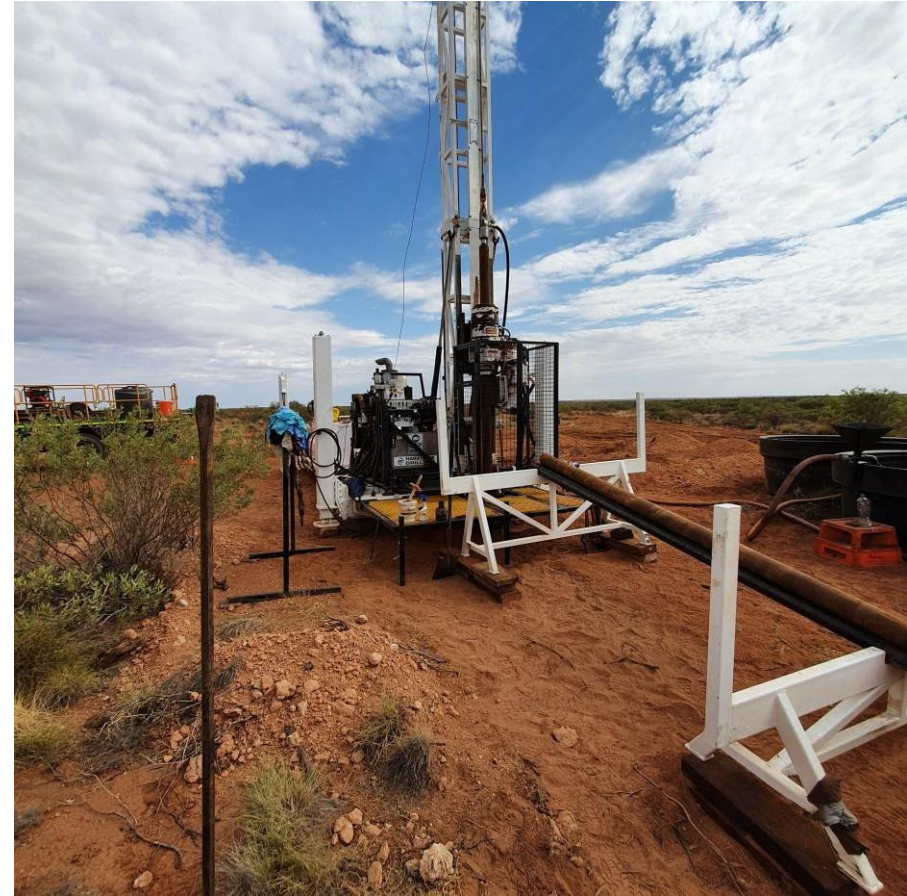


# Aileron – West Arunta – EAL001 – The hole that started it all...

Western Australian Government - Exploration Incentive Scheme - Co-Funded Drill Hole



Lightweight drill rig to assist mobility



EAL001 - Attempt 1 - 157m drilled

# Aileron – West Arunta – EAL001 – The hole that started it all...

Western Australian Government - Exploration Incentive Scheme - Co-Funded Drill Hole



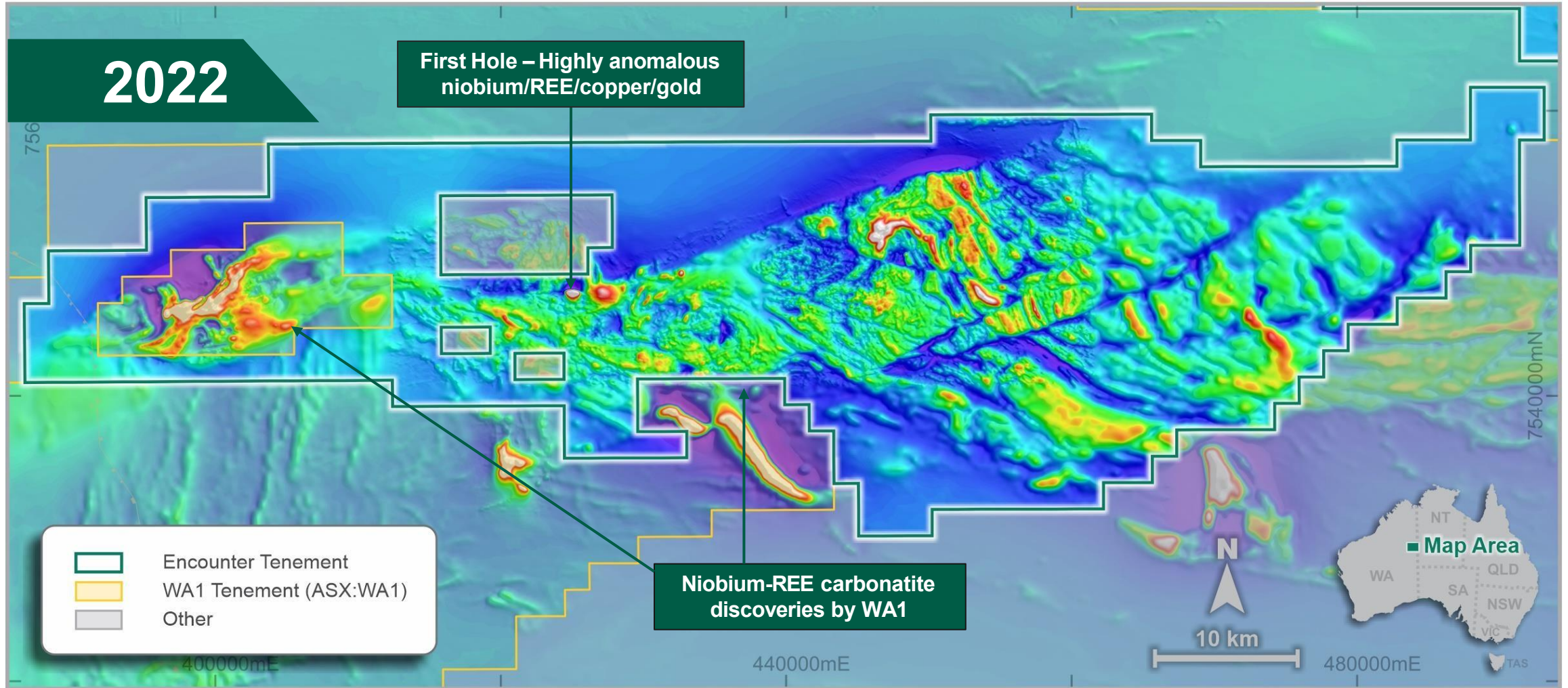
Hematite altered and fractured, coarse grained granitic rock with narrow mafic intrusive (88.5 - 91.7m)

Hydrothermal hematite-altered mafic intrusions and granite under shallow cover (10m). Zones of anomalism:

- copper (up to 0.1% Cu)
- gold (up to 48ppb Au)
- molybdenum (up to 155ppm Mo)
- niobium (up to 773ppm Nb)
- **rare earth elements (up to 0.8% TREO)**

# Aileron Project - West Arunta

October-November 2022 - WA1 announces the discovery of the Luni and P2 carbonatites



Aileron project - Magnetics (RTP)

# Aileron – West Arunta – EAL001 – The hole that started it all...

Western Australian Government - Exploration Incentive Scheme - Co-Funded Drill Hole

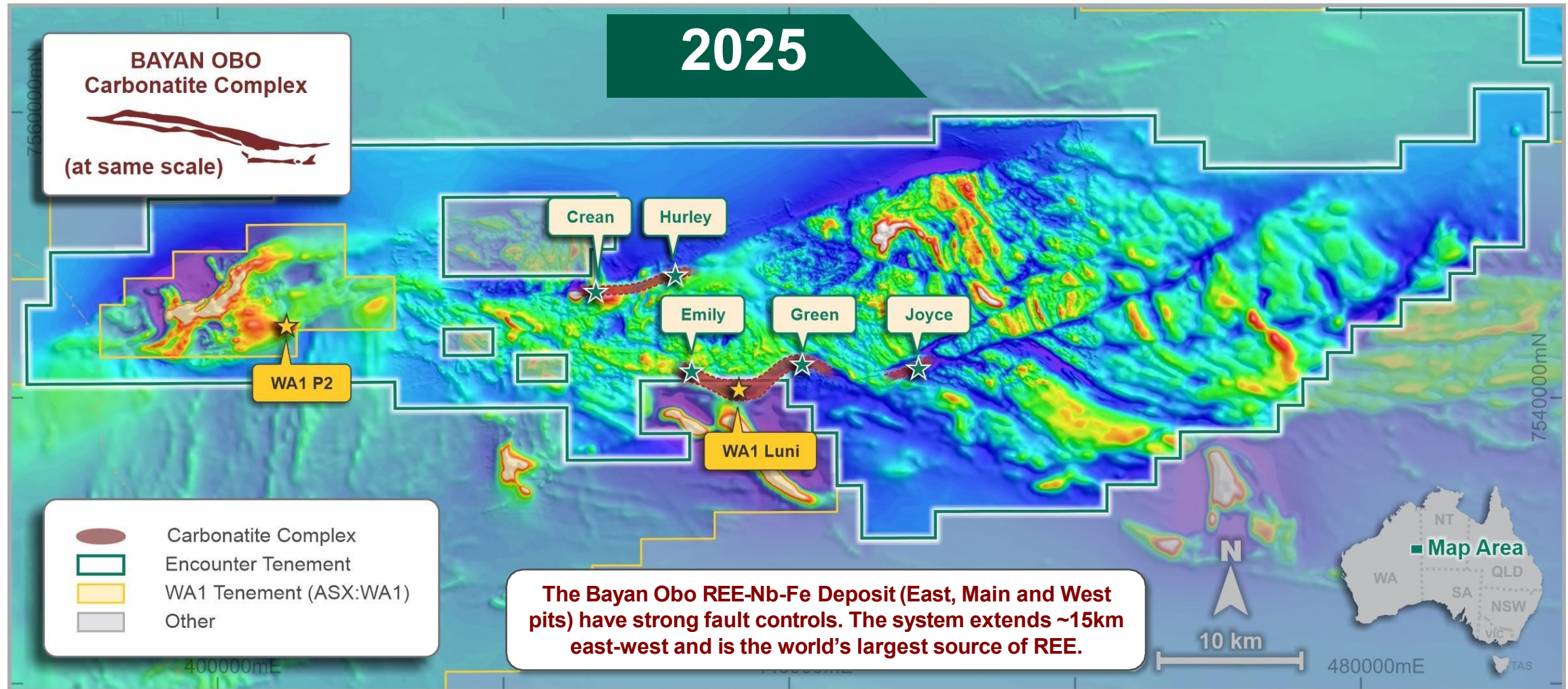


Intersection of Hoschke carbonatite, core orientation confirmed striking E-W to the Crean area (12 June 2023)

# Aileron Project - West Arunta

Carbonatites are commonly strike-extensive dyke systems including the world's largest - Bayan Obo (China)

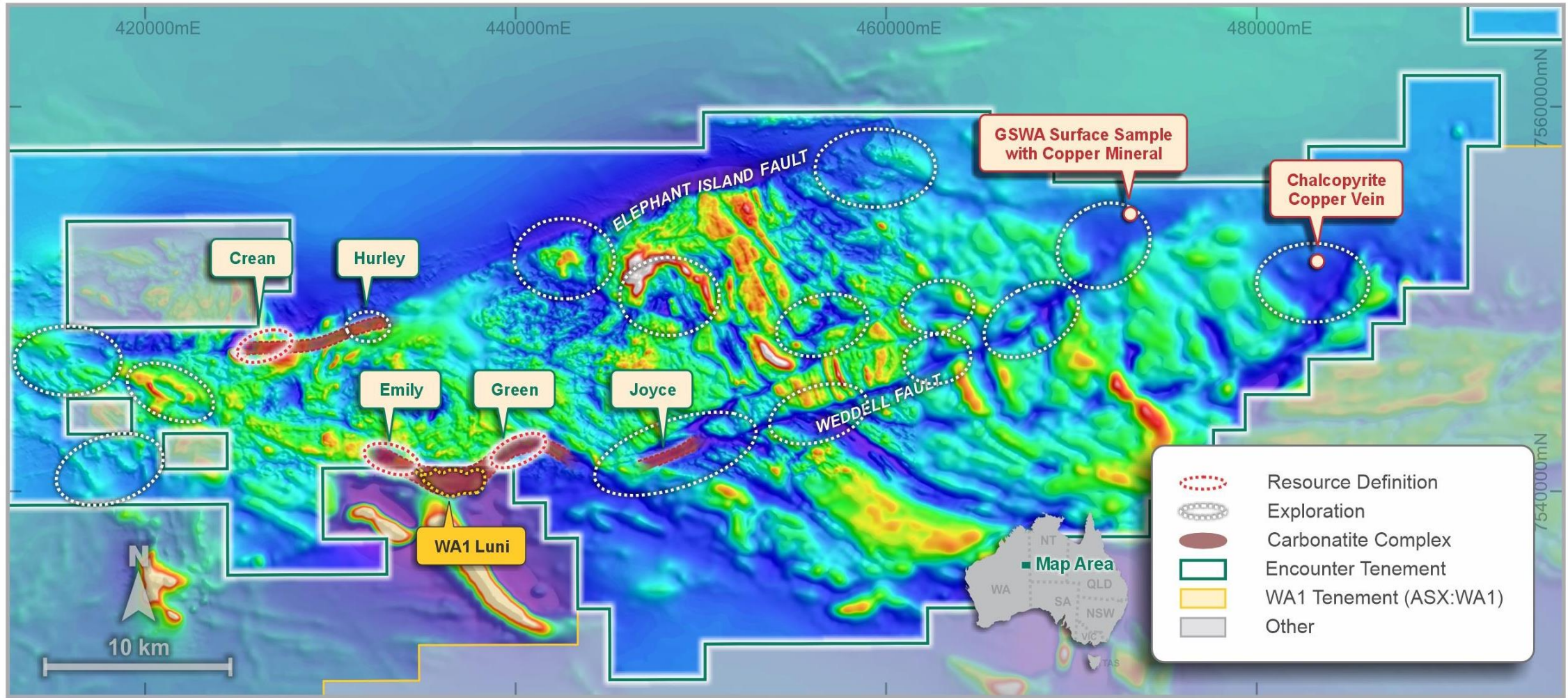
2025



Aileron project – Magnetics (RTP)

# Aileron Project - Exploration Upside

2025 - Unlocking the region's mineral potential



Aileron project – Magnetics (RTP)

# Towards development – Aileron – West Arunta

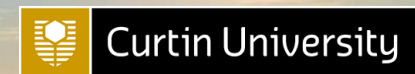
## Growing resources and advancing studies

- **Initial Resource (MRE):** 19.2Mt @ 1.74% Nb<sub>2</sub>O<sub>5</sub> - shallow, high-grade and open along strike and at depth
- **MRE update** targeted for H1 2026
- **Infill drilling of high-grade mineralisation** starting April 2026
- **Exploration accelerating** - Testing of high-priority regional targets beginning in Q2 2026
- **Metallurgical testwork advancing** - flotation, refining and final product results expected in H1 2026
- **Expanded Team:** strategic hires in metallurgy, development studies and marketing
- **Studies and environmental surveys** progressing to support project development plans



## Acknowledgement:

# New research and data is expediting discovery and development of the West Arunta



Aileron Access Track – West Arunta

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# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## South Australia's next copper opportunities

**Tom Wise**  
Acting Director  
Geological Survey of South Australia



# South Australia

## A copper capital

Hosts **68%** of Australia's known copper resources

Produced **>320,000 tonnes** of copper in 2024

SA's **#1 export** commodity

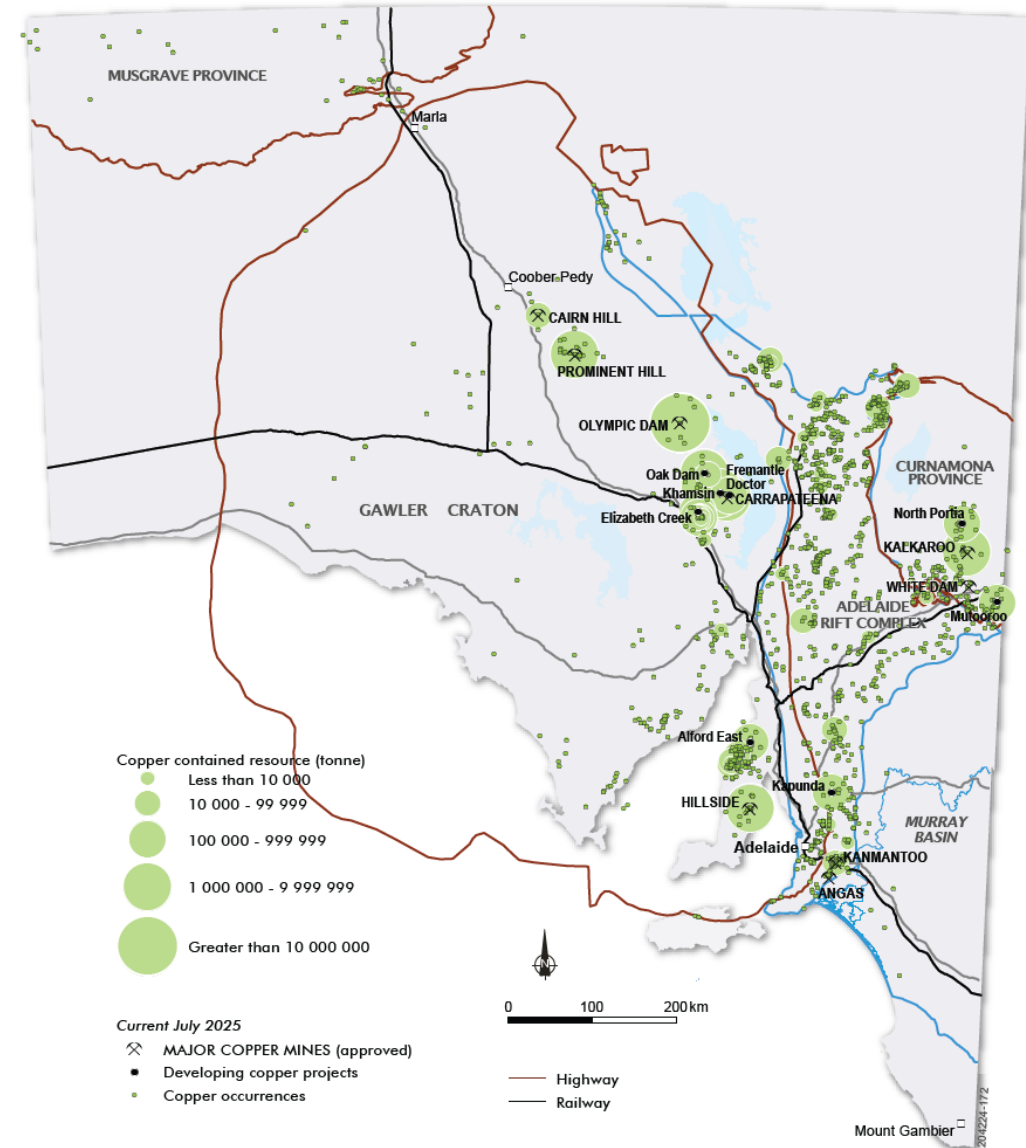


# SA's Copper landscape

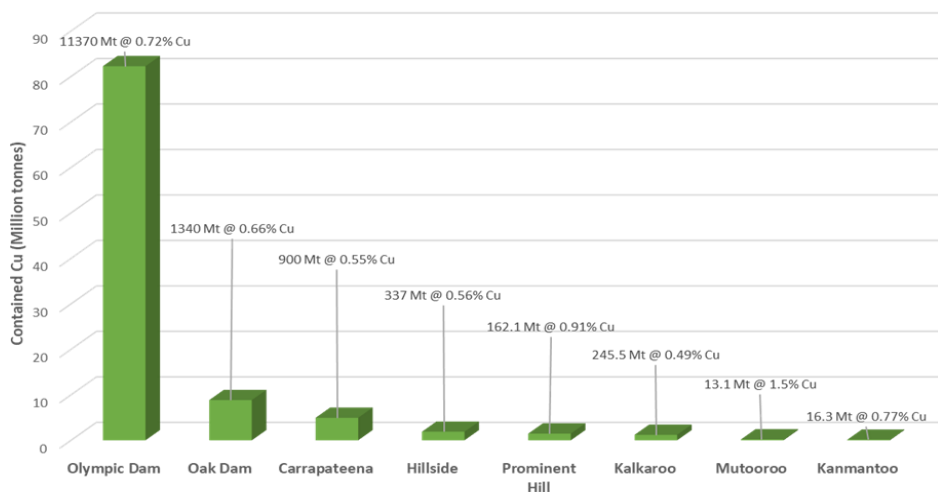
South Australia has 68% of Australia's economically demonstrated resources of copper.

These resources occur in different deposit styles:

- Iron oxide-Copper-Gold (IOCG)
- Other magmatic-hydrothermal Cu deposits (skarn, etc.)
- Sediment-hosted copper



South Australian Copper Deposits







# Iron Oxide Copper Gold deposits (IOCG)

**Two main types:** Magnetite-dominant and hematite-dominant

**South Australia renowned for hematite-dominant IOCG deposits**, typically larger than magnetite-dominant deposits

**Associated commodities:** Cu, U, Au, Ag  $\pm$  Mo, Co, LREE. Fe is enriched but uneconomic to produce due to impurities

## South Australian

### IOCG deposits:

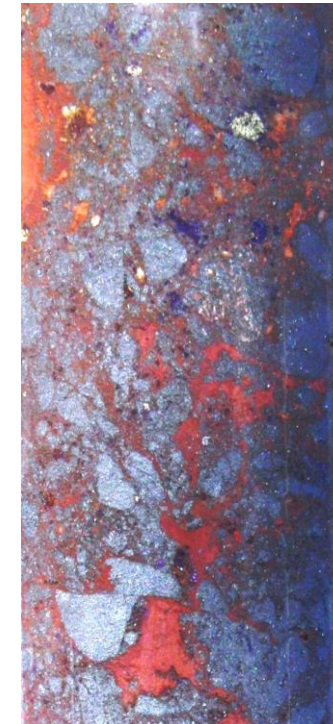
- Olympic Dam
- Carrapateena
- Prominent Hill
- Oak Dam



## Olympic Dam



## Carrapateena



## Prominent Hill



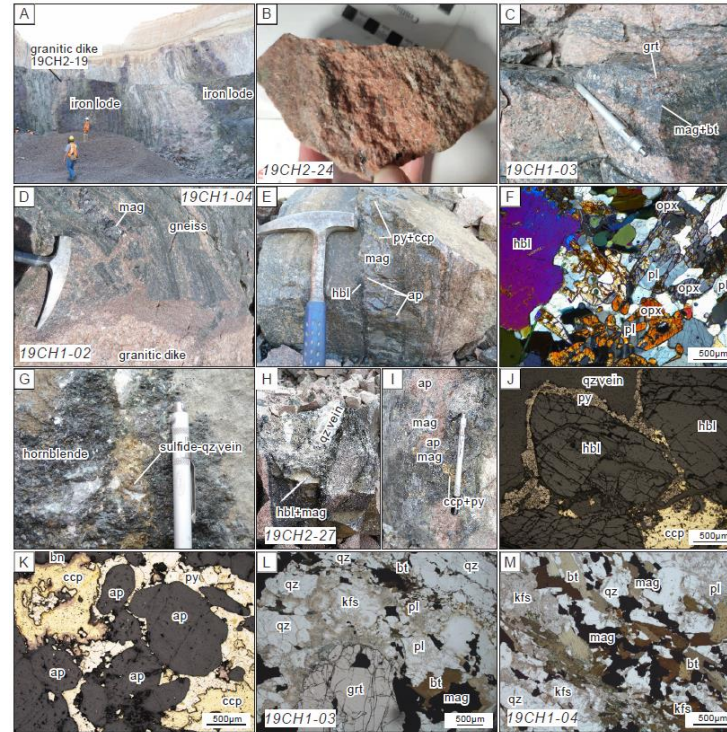
Reference drillholes from  
IOCG and associated  
deposits  
in South Australia

Adrian Fabris and Bernd Michaelsen



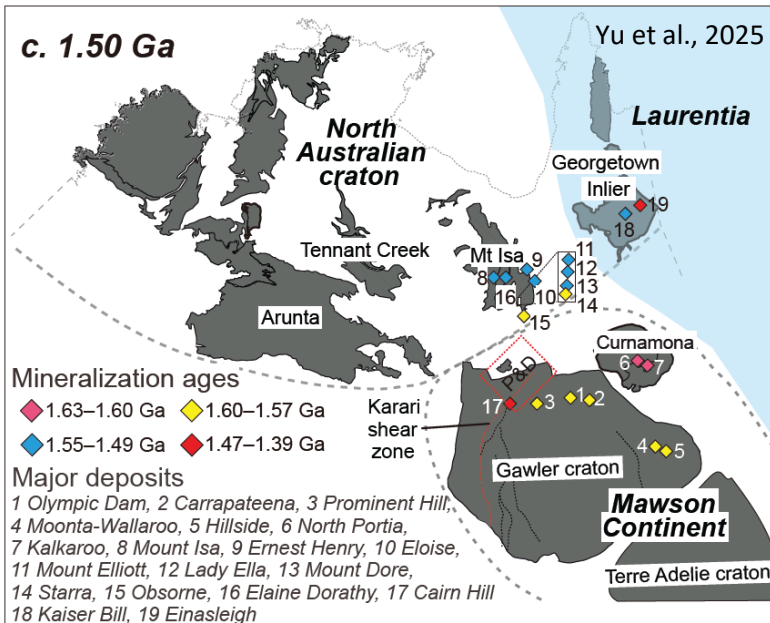
# A building copper story...

- Copper mineralisation across the northern Gawler Craton is different, younger, and an emerging opportunity



Yu et al., 2023

## Post 1490 Ma Cu mineralisation at Cairn Hill



Yu et al., 2025



Research Paper

Linking the Gawler Craton and Mount Isa Province through hydrothermal systems in the Peake and Denison Domain, northeastern Gawler Craton

Mitchell J. Bockmann<sup>a,b,\*</sup>, Justin L. Payne<sup>c,d</sup>, Martin Hand<sup>a,b</sup>, Laura J. Morrissey<sup>a,d</sup>, Antonio P. Belperio<sup>e</sup>

<sup>a</sup>Department of Earth Sciences, University of Adelaide, Adelaide, SA, Australia  
<sup>b</sup>Mineral Exploration Cooperative Research Centre, University of Adelaide, Adelaide, SA, Australia  
<sup>c</sup>UNISA STEM, University of South Australia, Adelaide, SA, Australia  
<sup>d</sup>Mineral Exploration Cooperative Research Centre, Future Industries Institute, University of South Australia, Adelaide, SA, Australia  
<sup>e</sup>Demetallica Ltd, Norwood, SA, Australia

## 1530-1465 Ma Cu mineralisation & hydrothermal systems in the Peake and Denison Domain

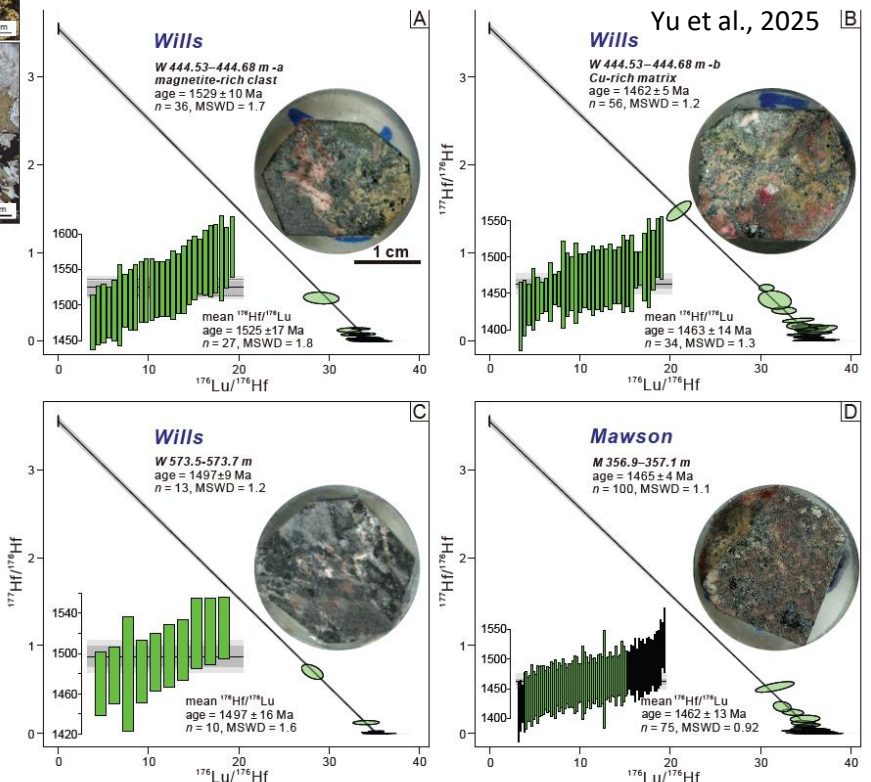


Fig. 11. Apatite Lu-Hf inverse isochron ages and weighted mean  $^{176}\text{Hf}/^{178}\text{Lu}$  ages for samples (A) magnetite-rich clast in W 444.53–444.68 m, (B) Cu-rich matrix in W 444.53–444.68 m, (C) W 573.5–573.7 m, and (D) M 356.9–357.1 m. MSWD = mean square of weighted deviates.



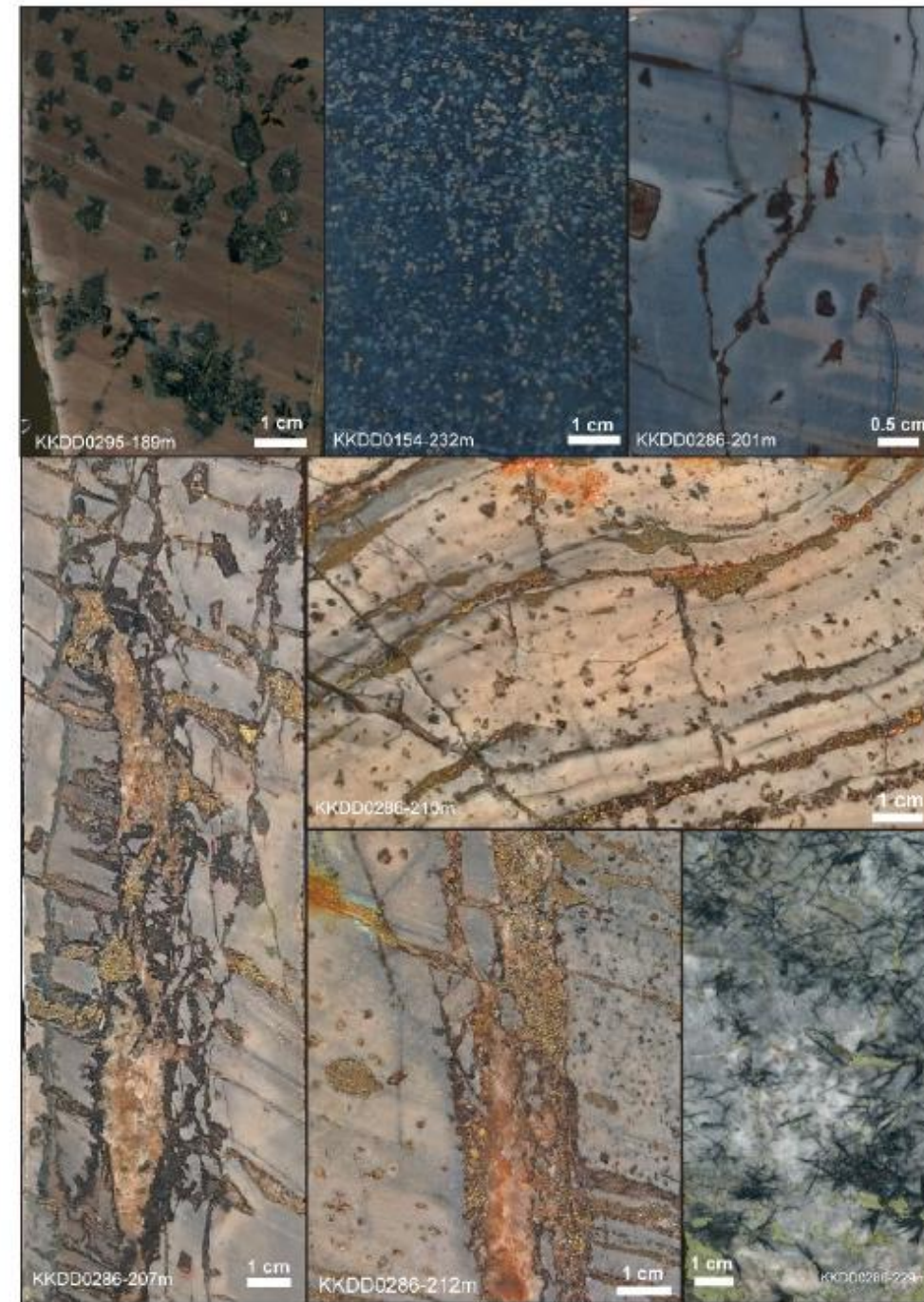
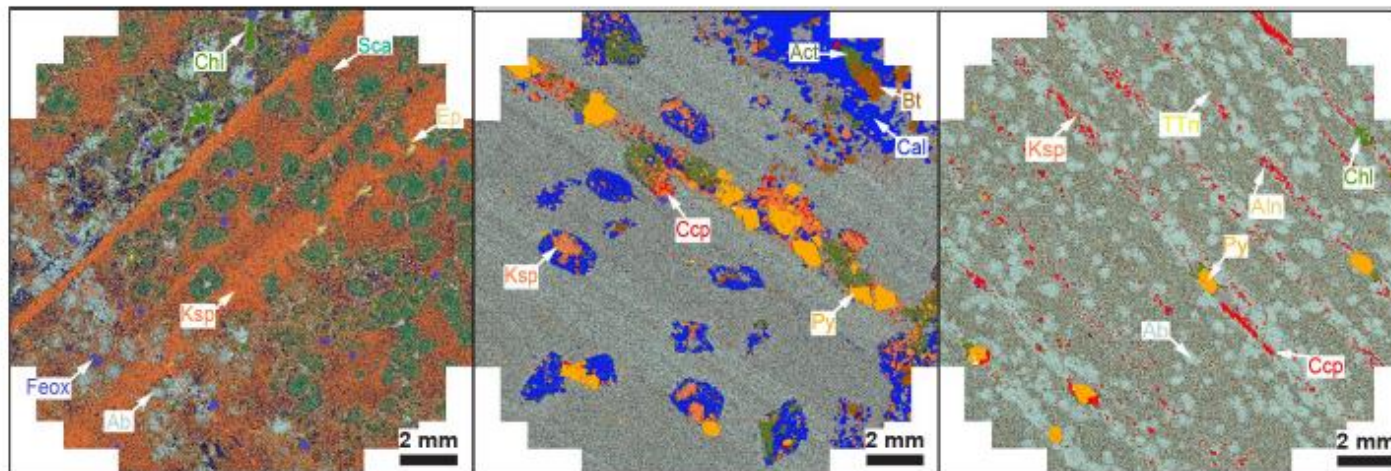
# Curnamona Province Cu-Au

e.g. Kalkaroo Cu-Au-(Co) deposit

Host rocks: Albitites, pelites showing ovoids-ellipsoids and rhomboids pseudomorphs (Portia Fm.) and breccias

## Ovoid and Rhomboid Features

- rarely primary mineralogy present – Scapolite
- Carbonate ellipsoids are associated with K-feldspar, biotite, chlorite and host chalcopyrite.
- Mineralogy in ovoid and rhomboid match change in breccia mineralogy from east to west (see next slide).
- are first to get hydrothermally altered and kaolinised during weathering

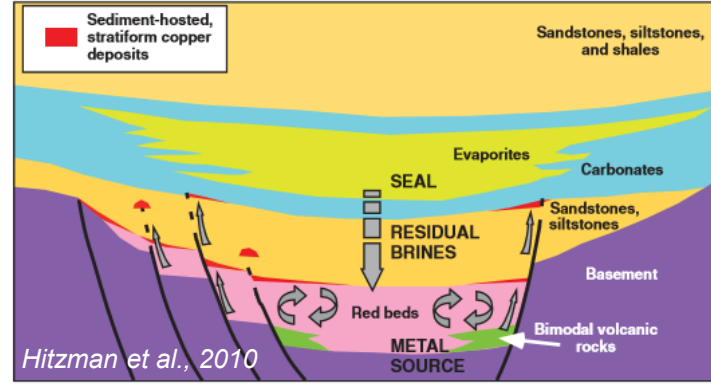
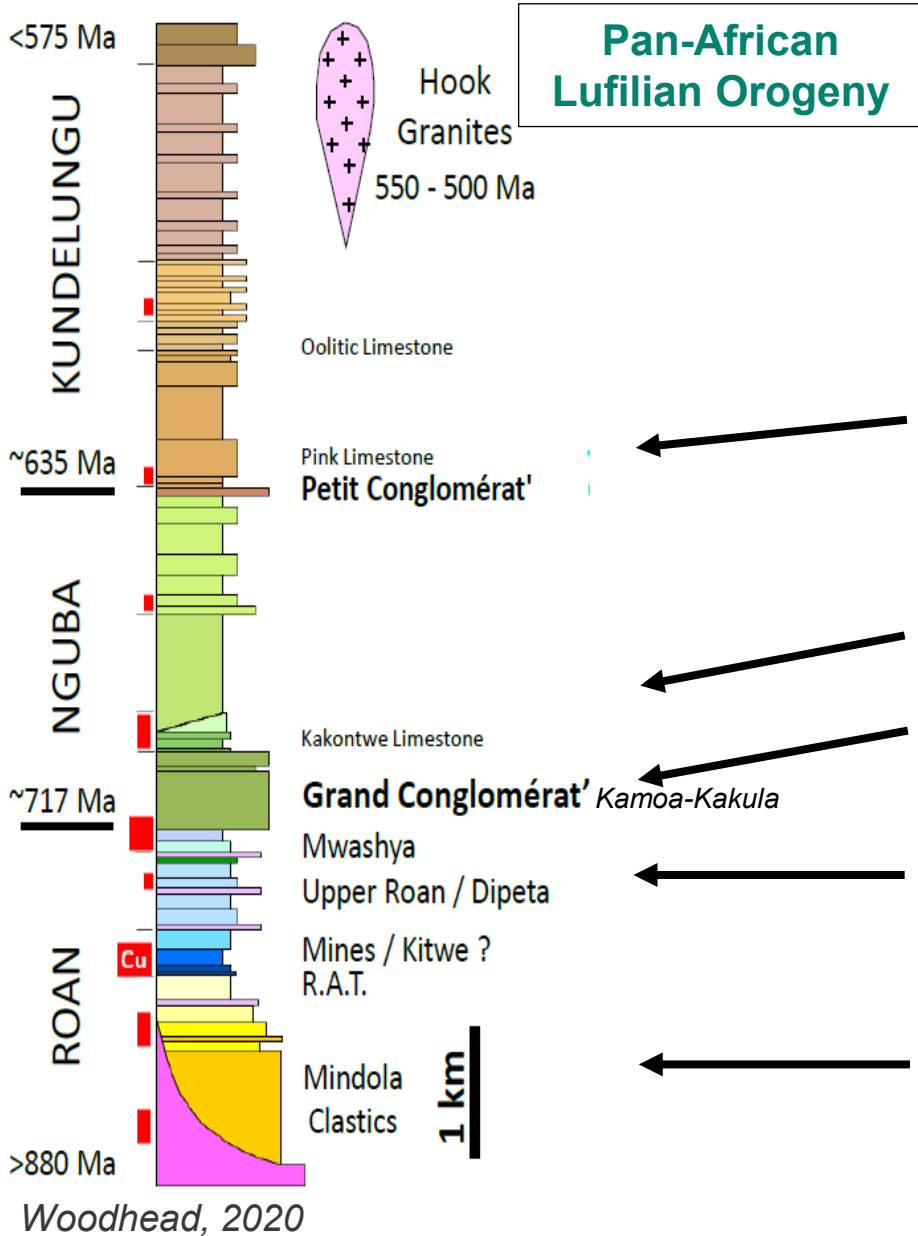




# Katangan Supergroup

# Sediment-hosted Copper

# Adelaide Superbasin



# Delamerian Orogeny

**Cap carbonate**  
post-Marinoan glaciation



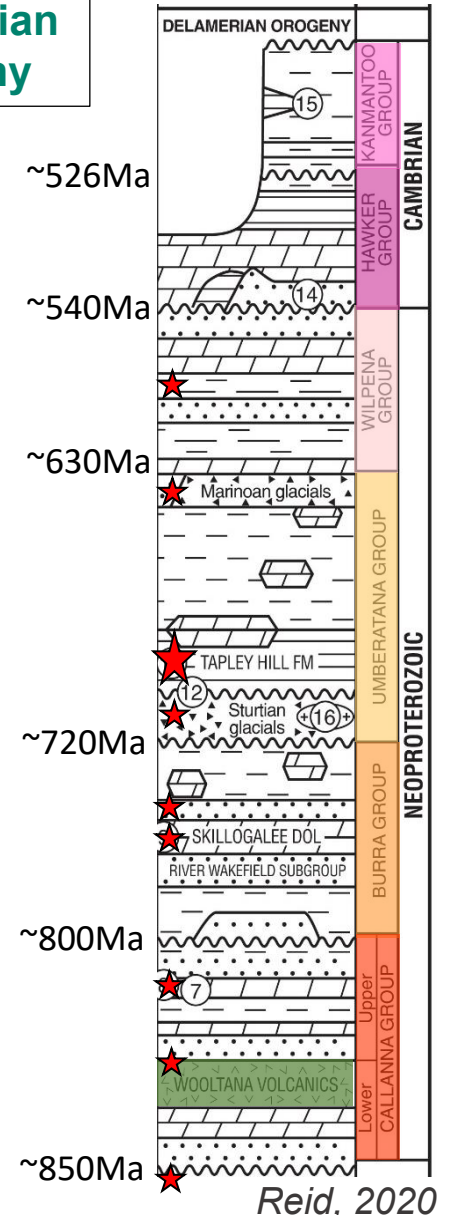
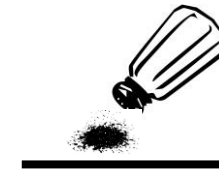
**Seal/trap**  
→ carbonate



Sturtian glacials

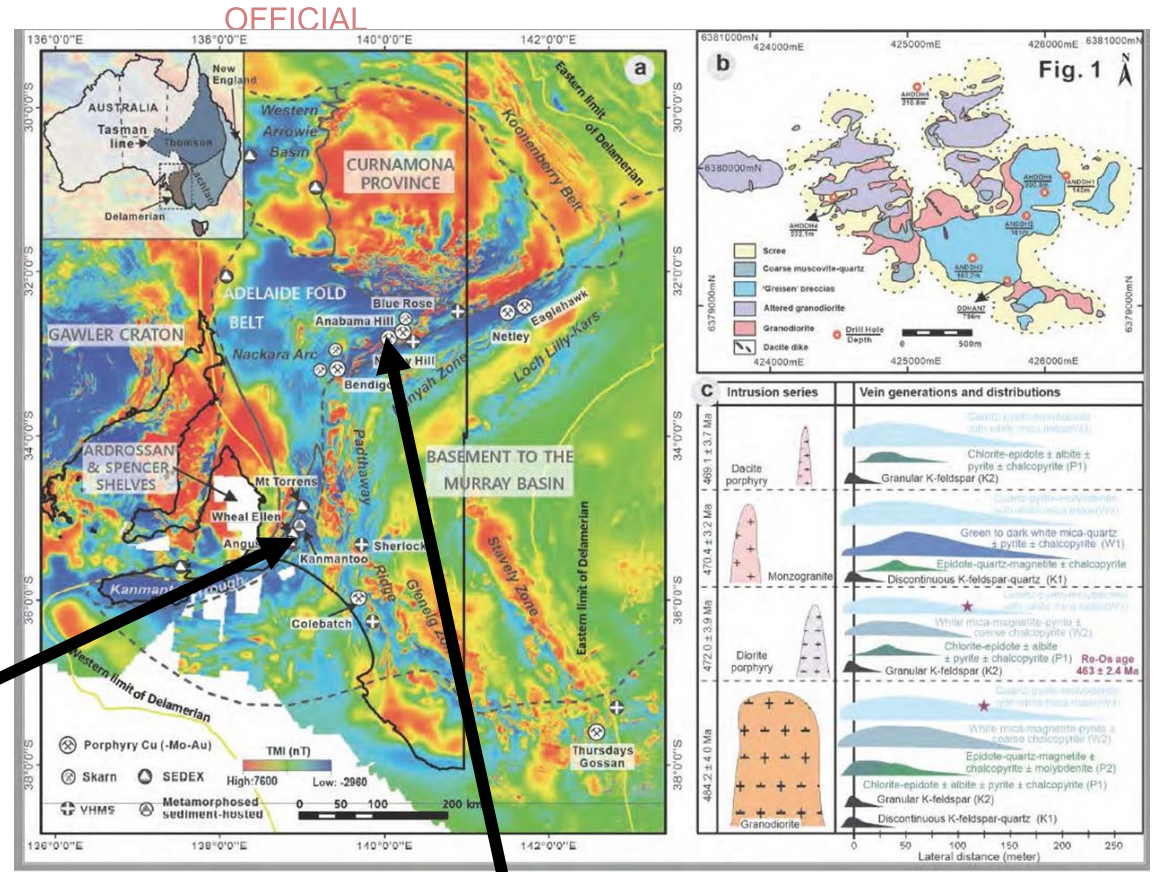
**Renewed extension**  
→ finer-grained clastics and carbonates

**Rift phase**  
→ coarse clastics, evaporites, carbonates, mafic igneous rocks



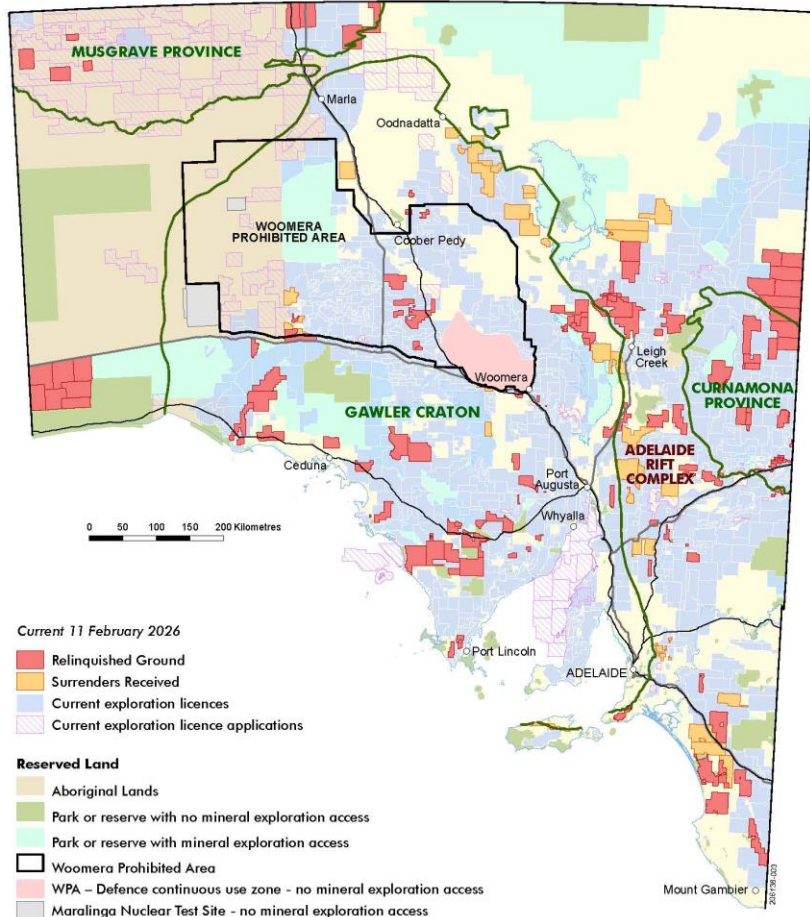


# Kanmantoo Cu-Au Mine



Structurally-controlled porphyry systems: 480-460 Ma

# Significant exploration acreage to be released over the next 6 months



*Access our data and find out more!*

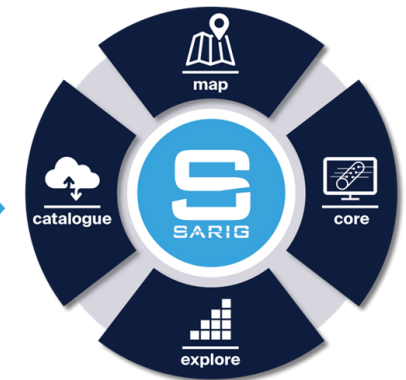
140 years of geoscience information

**People**  
Easy access to accurate, up-to-date geoscience data for exploration drilling decisioning making.

**Process**  
Cloud-based integration improving digital service efficiency, flexibility and scalability.

**Technology**  
Establish open API endpoints making geoscience data findable, accessible, interoperable and reusable (FAIR data principles).

**Digital Delivery**  
Expanded digital footprint of South Australia geoscience information to unlock mineral resources.



OFFICIAL

# AUSTRALIA MINERALS

REALISE THE OPPORTUNITY

## South Australia's next copper opportunities

**Tom Wise**  
Acting Director  
Geological Survey of South Australia





**Australian Mining: Building Australia's Prosperity Together**



## Who we are

- The Minerals Council of Australia is the leading advocate for Australia's minerals industry, promoting and enhancing sustainability, profitability and competitiveness
- Broad based minerals sector company membership base
- Canberra National HQ with Offices in Darwin, Perth and Melbourne

**\$2.5 trillion**



**GDP contribution**

Mining industry's contribution to real Australian GDP in 2023-24.

ABS

**\$395 billion**



**Royalties and taxes**

Royalties paid by the mining industry from 2014-15 to 2023-24.

Ernst & Young

**\$27 billion**

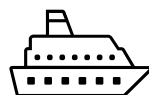


**Mineral exploration**

Exploration expenditure from 2014-14 to 2023-24.

ABS

**\$2.9 trillion**



**Export earnings**

Australian resources export revenue from 2014-15 to 2023-24.

ABS

**\$242 billion**

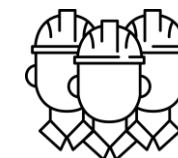


**Investment**

Mining industry investment from 2014-15 to 2023-34.

ABS

**>300k**



**Workforce**

303,300 highly skilled, highly paid workers across Australia.

ABS, Deloitte Access Economics

# Without mining


we don't have these valuable regional jobs and careers

**\$158.8k**  
Average annual wages

Average weekly pay in 2023-34, full-time adult total earnings.

ABS

There's more to Australian Mining



Key

EARTH SCIENCES

ENGINEERING

SKILLED TRADES

PHYSICAL SCIENCES

COMPUTER SCIENCE

HEALTH & SAFETY


BUSINESS ADMIN

FINANCE

ENVIRONMENT


SOCIAL IMPACT




## THE PERIODIC TABLE OF MINING CAREERS



**START HERE**

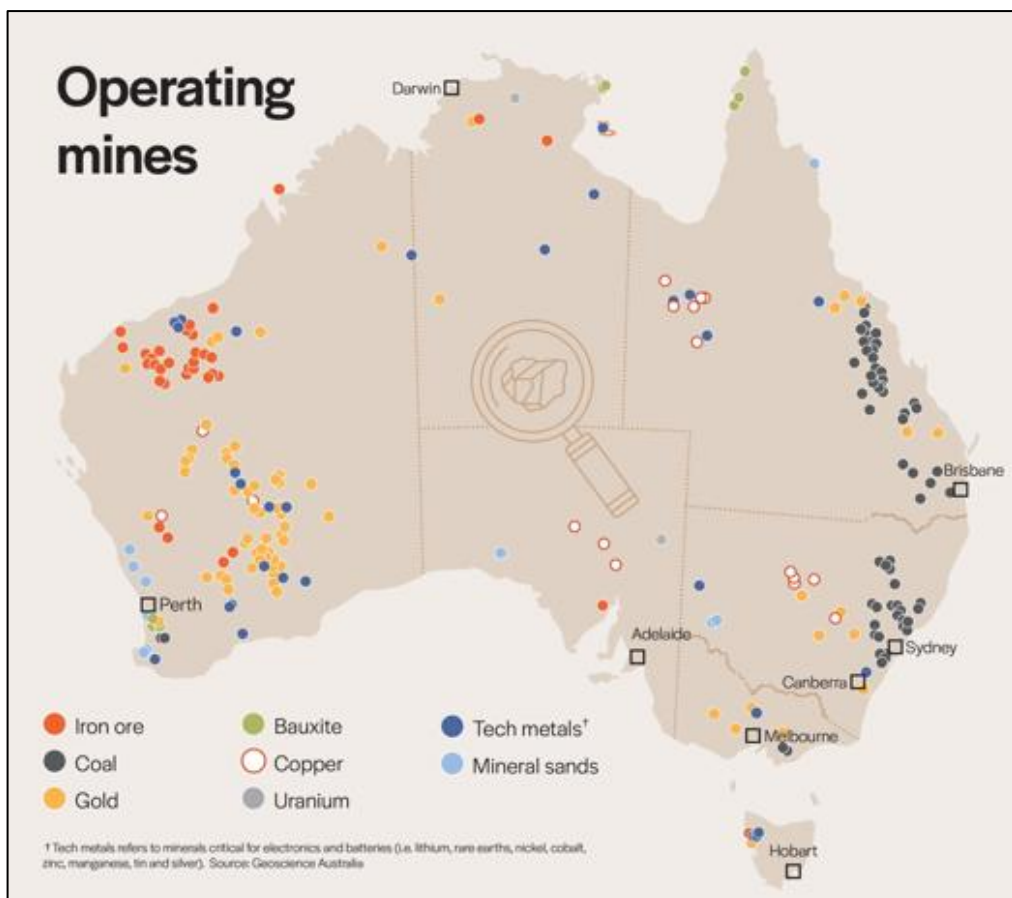
Whether you're passionate about the earth sciences, spend your weekends reverse engineering electronics, or are a whiz with numbers, there's a career in the mining industry for you. Simply start with your preferred area of study and take a look at some of the corresponding jobs available in mining.






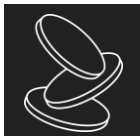
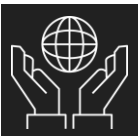
Mi.e MINING ENGINEER																C.fi CHIEF FINANCIAL OFFICER	
Mi.p MINE PRODUCTION ENGINEER	Ge.e GEOTECHNICAL ENGINEER															Co.s COMPANY SECRETARY	
Me.e MECHANICAL ENGINEER	Ele ELECTRICAL ENGINEER															F.an FINANCIAL ANALYST	
Ex.g EXPLORATION GEOLOGIST	S.mi SURFACE MINING ENGINEER	Mi.s MINE SAFETY ENGINEER	Ha.t HAUL TRUCK DRIVER	D.op DRAWING OPERATOR	Pr.m PROCESS METALLURGIST	Hy.m HYDRO-METALLURGIST	Py.m PYRO METALLURGIST	Ai.s AI SPECIALIST	M.le MACHINE LEARNING ENG.	Cy.s CYBERSECURITY ANALYST	En.e ENERGY EFFICIENCY SPEC.	Sa.c SAFETY COMPLIANCE	Re.s RESPIRATORY SPECIALIST	G.co GENERAL COUNSEL	M.re MEDIA RELATIONS SPECIALIST	Hu.r HUMAN RESOURCES MGR	I.re INVESTOR RELATIONS MGR
Ge.t GEOLOGICAL TECHNICIAN	Hyd HYDROGEOLOGIST	M.eq MINING EQUIPMENT ENG.	Ta.e TAILINGS ENGINEER	D.me DIESEL MECHANIC	Ele ELECTRICIAN	Ex.m EXTRACTIVE METALLURGIST	Fl.e FLotation ENGINEER	Da.s DATA SCIENTIST	Re.o REMOTE OPERATIONS SPEC.	I.se IoT / SENSORS ENGINEER	Me.s MECHATRONICS SPECIALIST	Oc.n OCCUPATIONAL NURSE	Sa.e SAFETY ENGINEER	Tr.d TRAINING & DEVELOPMENT	Co.e CONTENT WRITER / EDITOR	M.aq MERGERS & ACQUISITIONS	P.fi PROJECT FINANCE MGR
Ex.m EXPLORATION MANAGER	Dr.e DRILLING ENGINEER	D.en DRILLING ENGINEER	M.ha MATERIALS HANDLING ENG.	Wel WELDER	Sh.f SHOT TOWER	Me.e METALLURGICAL ENGINEER	M.pr MINERALS PROCESSING ENG.	Me.m METALLURGICAL MODELLER	Vr.d VR DEVELOPER	Au.r AUGMENTED REALITY SPEC.	So.e SOFTWARE ENGINEER	Be.s BEHAVIOURAL SAFETY ANALYST	H.sa HEALTH & SAFETY INSPECTOR	Ev.c EVENTS COORDINATOR	So.m SOCIAL MEDIA MANAGER	Fi.p FINANCIAL PLANNER	Co.m CONTRACTS MANAGER
Ge.a GEOCHEMICAL ANALYST	Ge.s GEOPHYSICAL SURVEYOR	F.ma FIELD MAPPING SPECIALIST	U.mi UNDERGROUND MINING ENG.	U.ni UNDERGROUND RIGGER	Ma.t MAINTENANCE TECHNICIAN	M.la MINE LABOURER	Pr.c PROCESS CONTROL ENG.	La.t LABORATORY TECHNICIAN	Di.t DIGITAL TWIN ENGINEER	T.in TECHNOLOGY INTEGRATION	Ch.m CHANGE MANAGER	Fl.c FLEET COORDINATOR	Pr.m PROJECT MANAGER	Ma.m MARKETING MANAGER	In.m INSURANCE MANAGER	Co.t COMMODITY TRADER	S.ch SUPPLY CHAIN SPECIALIST
G.sp GIS SPECIALIST	Co.l CORE LOGGER	D.sc DATA SCIENTIST	Dr.o DRONE OPERATOR	R.sy REMOTE SYSTEMS TECHNICIAN	Ic.s ICT SUPPORT OFFICER	Ad.o ADMINISTRATION OFFICER	Sp.c SPECIALIST CHEMIST	M.su METALLURGIST SUPERINTENDENT	D.so DRONE SOFTWARE DEVELOPER	Ri.a RISK ASSURANCE MANAGER	I.in INCIDENT INVESTIGATOR	St.s STRATEGY SPECIALIST	Of.m OFFICE MANAGER	Fi.m FINANCIAL MODELLER	P.ma PROCUREMENT MANAGER	C.an CREDIT ANALYST	Acc ACCOUNTANT
																	
<ul style="list-style-type: none"> <li>  <p> <b>Careers Directory</b>  <a href="http://minerals.org.au/careers">minerals.org.au/careers</a> </p> </li> <li> <p> <b>Apprenticeships</b>  <a href="http://apprenticeships.gov.au">apprenticeships.gov.au</a> </p> </li> <li> <p> <b>Good Universities Guide</b>  <a href="http://gooduniversitiesguide.com.au">gooduniversitiesguide.com.au</a> </p> </li> </ul>																	
Building a career path in mining is elementary!																	
<div style="display: flex; align-items: center; justify-content: flex-end;">  <div style="margin-left: 20px;"> <p>Learn more at <a href="http://minerals.org.au/careers">minerals.org.au/careers</a></p> </div> </div>																	

# Australia's mining industry

Over 300 operating mines across Australia

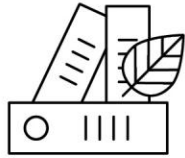


	Operating Mines	Ore Reserves	Production	Export Earnings	World Rank
<i>Gold</i>	157	4,486 t Au	296 t Au	\$28.4 bn	3
<i>Coal</i>	95	13,912 Mt	428 Mt	\$103.2 bn	5
<i>Iron ore</i>	46	24,405 Mt	953 Mt	\$136.3 bn	1
<i>Copper</i>	27	27.4 Mt Cu	0.78 Mt Cu	\$11.7 bn	8

Source: Geoscience Australia, *Australia's Identified Mineral Resources 2024*

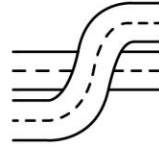
# From *Future Critical* to *Minerals-plus*: A step forward for government and industry



**Reduce the regulatory burden to attract investment**



**Advance policies that support competitive project returns**



**Deliver efficient public infrastructure and services**



**Make support for mining a political imperative**



**Put business and productivity at the centre of fiscal policy**



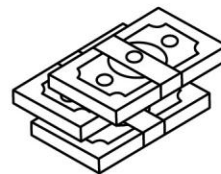
**Let markets do their thing**  
*Regulation that strengthens mining*

- Retain the fuel tax credit
- Ensure least cost abatement under SGM



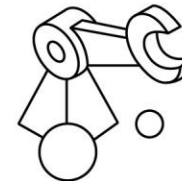
**Address the weak links**  
*Mining is not just 'dig and ship'*

- Increase approvals efficiencies
- Put productivity into IR
- Improve community benefits



**Augment private capital**  
*Guard rails for public investment*

- Level investment playing field
- Invest in common user mobile assay labs



**Leverage opportunities**  
*Downstream success starts with mining*

- Activate the single front door
- Fund common user plan
- Integrate into clean energy supply chains





## Communities

- Everyday the mining industry supports communities by providing high value local jobs, essential services and critical infrastructure.
- Respectful relationships, enduring community benefits and fair, transparent practices underpin trust in mining.
- Excellence in social performance also depends on strong relationships. Australian mining is working together with Aboriginal and Torres Strait Islander people, regional communities, non-government organisations, governments and academia to demonstrate and strengthen social performance across the mining lifecycle.



## Local content/Local focus

- The industry seeks to employ locals first and works hard to attract and retain new workers in regional communities.
- Regional Australia is home to some of the nation's most innovative mining equipment, technology and services companies.
- The industry will increase local procurement to support local businesses and keep economic benefits in mining communities.

# More to Australian Mining





**\$1.64** billion

### Procurement

Total reportable Indigenous-business procurement accounted for from mining in 2024-25.

Supply Nation



*There's more to*  
**Australian Mining**

## Indigenous partnerships

- Shaping frameworks for deeper and enduring partnerships with Traditional Owner communities that align economic opportunity with respect for Country and cultural heritage.
- Partnerships are grounded in dialogue, co-design, and mutual accountability and are integral to mining's core business.
- MCA members directly employ approximately 6,000 Aboriginal and Torres Strait Islander people with the average annual mining industry salary in Australia being \$158,800.

Industry coalition

# Fuel Tax Credit Alliance



# The WA Network



# Every Australian has a stake in Australia minerals





[minerals.org.au](http://minerals.org.au)



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