15 July 2024

CARRARA RANGE PROJECT SEDEX AND URANIUM POTENTIAL

HIGHLIGHTS

- ***Independent review of Resolution's Carrara Range Project, in Northern Territory, concludes that the Project is highly prospective for Sedimentary Exhalative (SEDEX) and Unconformity uranium mineralisation.***
- ***SEDEX analogues for the Carrara Range Project include the Century Zinc Deposit and the McArthur River Deposit.***
- ***Unconformity uranium analogues for the Carrara Range Project include the Westmoreland Uranium Field and the world-class Athabasca Uranium Province.***
- ***In addition, the Carrara Range Project hosts known high grade manganese (Mn) and iron (Fe) mineralisation.***
- ***Resolution will focus on the SEDEX and Uranium potential of Carrara Range.***

Resolution Minerals Ltd (**RML** or **Company**) (ASX: **RML**) is pleased to announce the results of a recent independent review of its Carrara Range Project (**Carrara** or the **Project**). The review was undertaken by Mr Ross Brown of Riviere Minerals, who has over 30's experience in base metals and sedimentary-hosted uranium mineral systems and exploration.

The ***Carrara Range SEDEX and Uranium Potential Presentation*** follows this announcement. The review has accessed previously released data and general information available publicly on the ASX portal, on the Northern Territory Government *Spatial Territory Resource Information Kit for Exploration* (**STRIKE**) and on the *Geoscience Exploration and Mining Information System* (**GEMIS**). Key take ways in the positive assessment of the SEDEX and uranium potential of the Carrara Range Project include:

- The project area includes three granted Exploration Licences, with a total manageable area of 685km^2, covering the SEDEX and uranium targets.
- The Encounter Resources – South32 Carrara Joint Venture (**Carrara JV**) project is immediately adjacent to Carrara Range. The Carrara JV is focussing on Tier-1 copper and zinc mineralisation. Encounter notes "*clear correlation of the Century Zinc Mine stratigraphy across the basin in Geoscience Australia seismic data*." (Mining.com.au article 13 Oct 2023).
- The Lower Carrara Group of the Lawn Hill Platform has been correlated to the Westmoreland Conglomerate which hosts more than eighteen uranium occurrences making up the Westmoreland Uranium field (125km north of Carrara Range). The Westmoreland Uranium field is analogous to the Athabasca Uranium Province.
- A conglomeratic unit of the Lower Carrara Group at Carrara Range has a strong ternary / uranium radiometric signature over a 30km strike length.

Authorised for release by the board of Resolution Minerals Ltd.

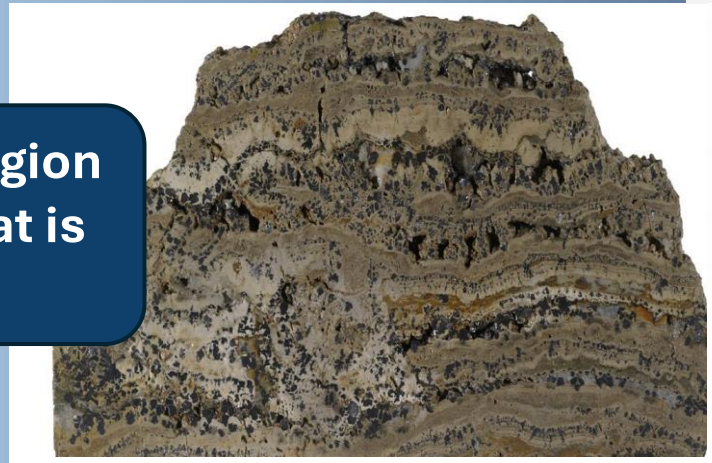
For further information, please contact Aharon Zaetz Executive Director.

Aharon Zaetz
Executive Director
Resolution Minerals Ltd
M: +61 424 743 098
ari@resolutionminerals.com

RML confirms that this announcement the Company is not aware of any new information or data cross referenced in this announcement.

The Exploration Potential of Resolution Minerals' Carrara Range Project

- The potential exists for stratiform epigenetic manganese mineralisation at the Resolution Minerals Ltd (ASX: RML) **Carrara Range Project** (*100% owned*)
- **There also exists the potential for Sedimentary Exhalative (SEDEX) base metal mineralisation and Unconformity uranium at Carrara Range**



Rock specimens are not the property of Resolution Minerals Ltd

This is an exciting project in a region with Tier-1 deposit potential that is materially under-explored.

Presentation compiled by Riviere Minerals for Resolution Minerals, June/July 2024

Resolution's Carrara Range Project Tenement Holding

EL32577
- Ownership: Carrara Resources Pty Ltd (100%)
- Grant Date: 13 July 2021
- Expiry Date: 12 July 2027 (**valid for 36 further months**)
- Area: 352.98sqkm (114 blocks)

EL32620
- Ownership: Carrara Resources Pty Ltd (100%)
- Grant Date: 16 August 2021
- Expiry Date : 15 August 2027 (**valid for 37 further months**)
- Area: 135.07sqkm (47 blocks)

EL32622
- Ownership: Carrara Resources Pty Ltd (100%)
- Grant Date: 16 August 2021
- Expiry Date : 15 August 2027 (**valid for 37 further months**)
- Area: 196.80sqkm (63 blocks)

ELA32578
- Ownership: Carrara Resources Pty Ltd (100%)
- Consent Date: 19 January 2021
- Area: 188.95sqkm (73 blocks)

ELA32619
- Ownership: Carrara Resources Pty Ltd (100%)
- Consent Date: 12 March 2021
- Area: 236.09sqkm (80 blocks)

ELA32621
- Ownership: Carrara Resources Pty Ltd (100%)
- Consent Date: 12 March 2021
- Area: 161.10sqkm (60 blocks)

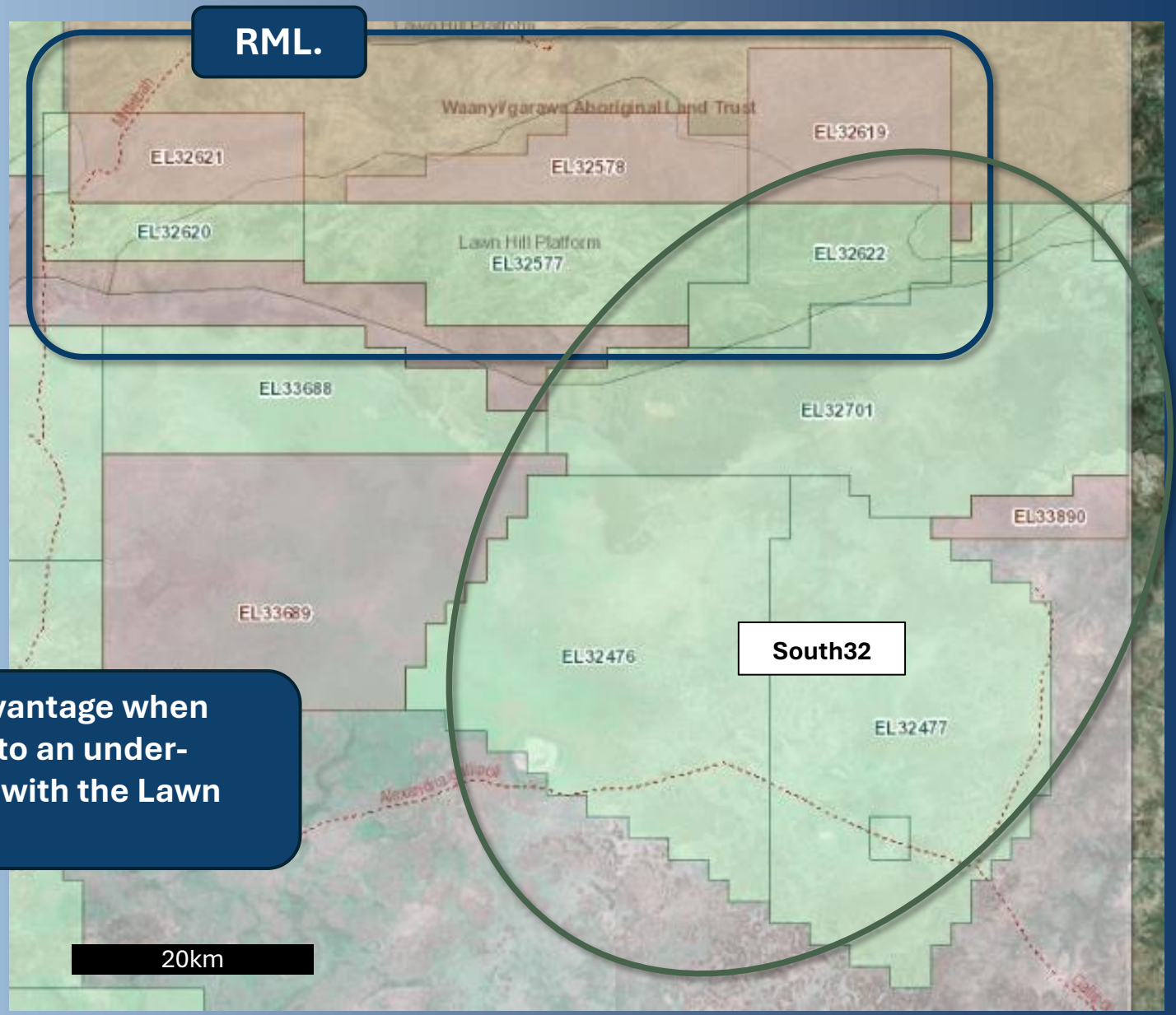
Three ELA's occurring on the Waanyi/Garawa Aboriginal Land Trust area.

A large granted landholding of 685sqkm conducive to regional mineral exploration. All tenements are in good standing.

RML RESOLUTION MINERALS LTD

Tenement Holding of the Carrara Range Project

- Resolution's Carrara Range Project comprises 6 ELs for a total area of **1,271sqkm**
  - Granted (green shaded area)
  - Applications (brown shaded area)
- South32 has a large project immediately southeast of Carrara Range presumably exploring for Tier-1 SEDEX deposits

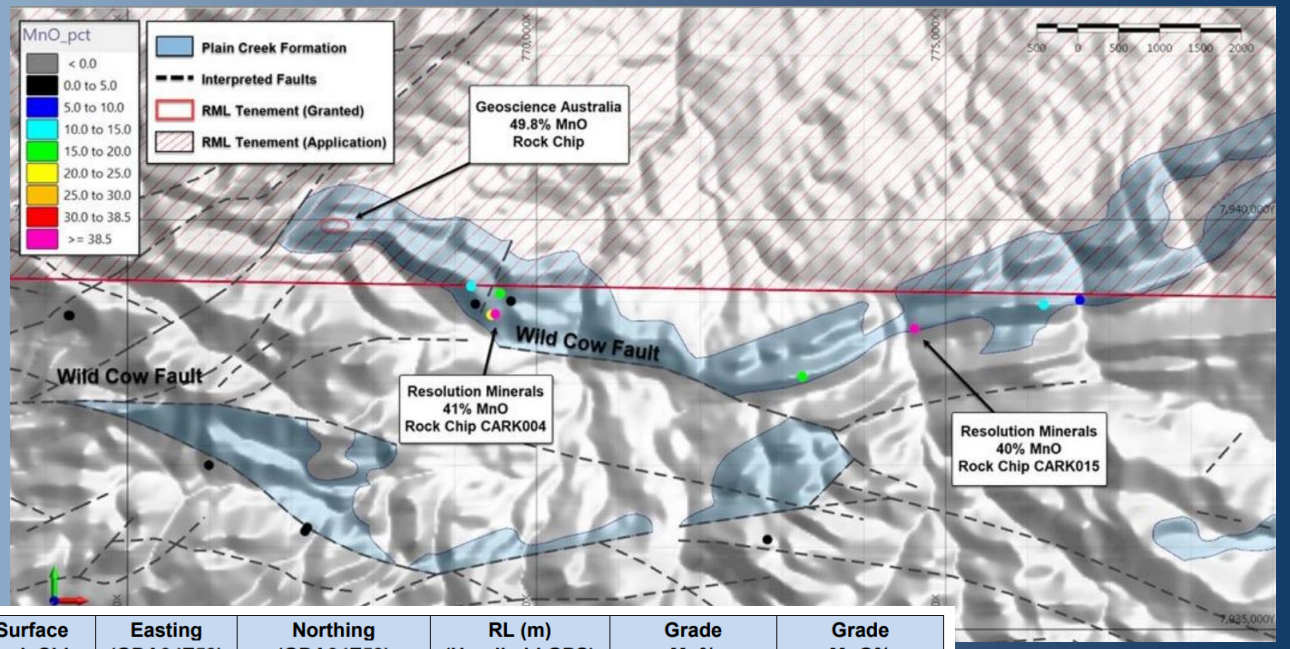


A large landholding is a significant advantage when applying regional exploration models to an under-explored area such as that coinciding with the Lawn Hill inlier in the NT.

Image generated by Riviere Minerals using STRIKE

Known Manganese at Carrara Range

- The Carrara Mn Prospect (49.8% MnO rockchip) discovered by Geoscience Australia occurs within the Plain Creek Formation
- RML-generated Mn occurrences (rockchip) also correspond to the Plain Creek Formation, with Mn peak value of 41.1% MnO
- **The Plain Creek Formation is part of the Lawn Hill Platform geological province**



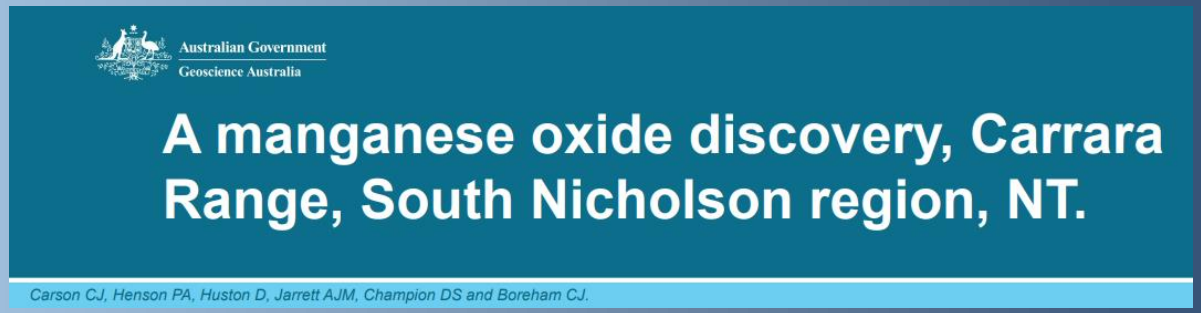
Surface Rock Chip	Easting (GDA94Z53)	Northing (GDA94Z53)	RL (m) (Handheld GPS)	Grade Mn%	Grade MnO%
CARK001	769201	7939202	369	7.9	10.2
CARK002	769554	7939101	308	11.9	15.4
CARK003	769687	7939008	350	2.8	3.6
CARK004	769495	7938850	350	31.8	41.1
CARK005	769447	7938841	353	18.0	23.2
CARK006	769252	7938972	327	0.1	0.1
CARK007	755691	7938049	380	0.2	0.3
CARK008	757188	7937977	386	1.6	2.0
CARK009	758240	7937889	407	22.5	29.1
CARK010	759817	7937861	403	0.1	0.1
CARK011	764295	7938832	410	0.0	0.1
CARK012	764279	7938833	410	0.1	0.2
CARK013	776640	7939021	315	5.7	7.4
CARK014	776199	7938966	346	10.3	13.2
CARK015	774618	7938668	317	31.0	40.0
CARK016	773248	7938085	346	13.2	17.0
CARK017	772820	7936095	372	0.1	0.1
CARK018	767169	7936197	327	0.2	0.3
CARK019	767197	7936242	327	0.1	0.2
CARK020	765994	7937002	342	0.0	0.0
CARK021	755691	7937744	330	0.1	0.1
CARK022	755694	7938054	332	0.1	0.2
CARK023	755711	7938073	332	0.1	0.1
CARK024	755957	7938145	336	0.1	0.1

Photo, map and assay table from RML ASX announcement 26 September 2023

The Carrara Mn Prospect

(from Carson et al 2020)

- The high-grade zone of the Mn mineralisation comprises massive **pyrolusite and cryptomelane** (with elevated Zn and Co)
- The massive Mn zone is surrounded by lower grade altered sandstone which is cross-cut by Mn-veinlets
- **Carson *et al* concludes that the Mn occurrence is likely to be an epigenetic replacement stratiform body**



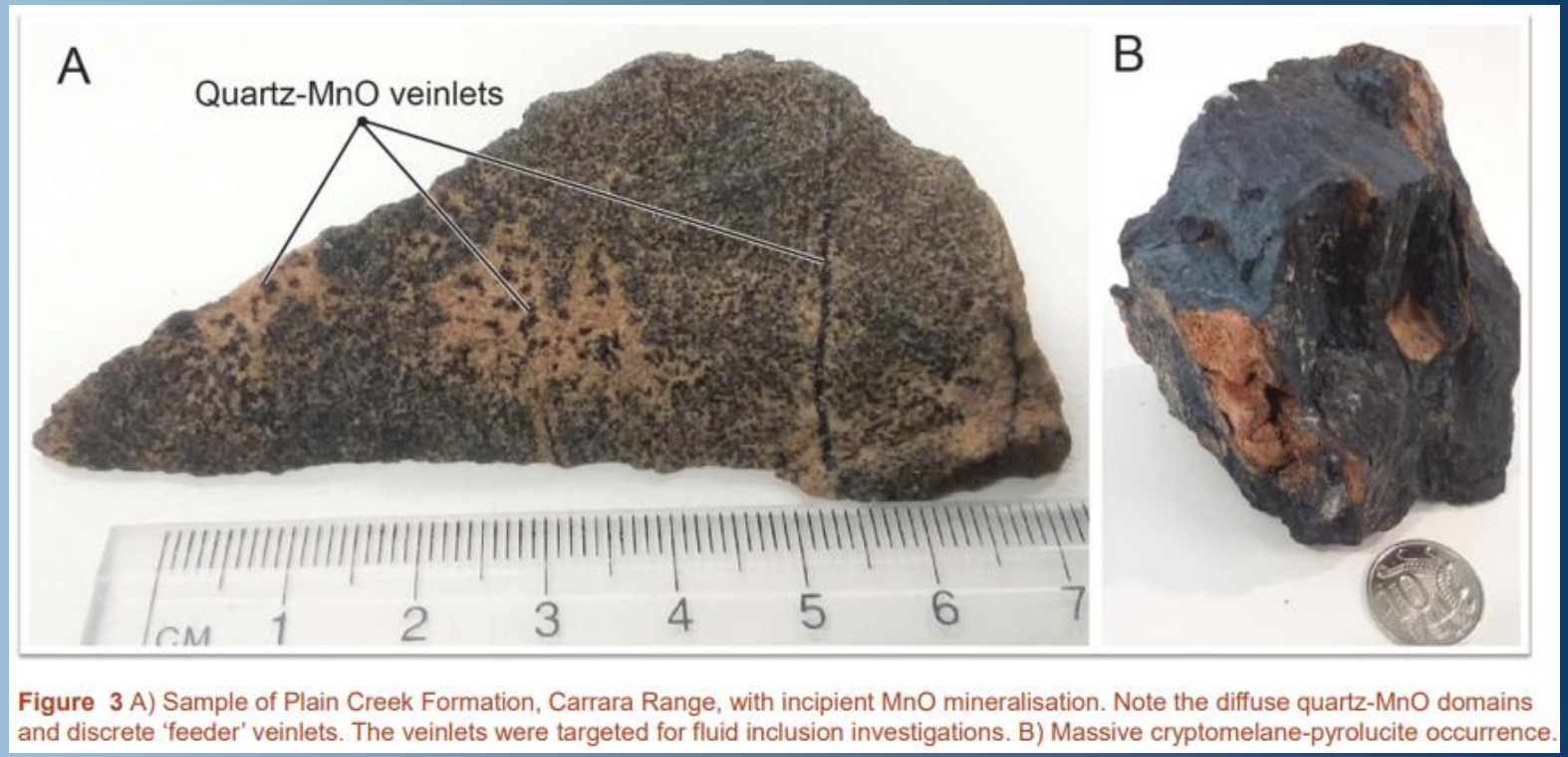
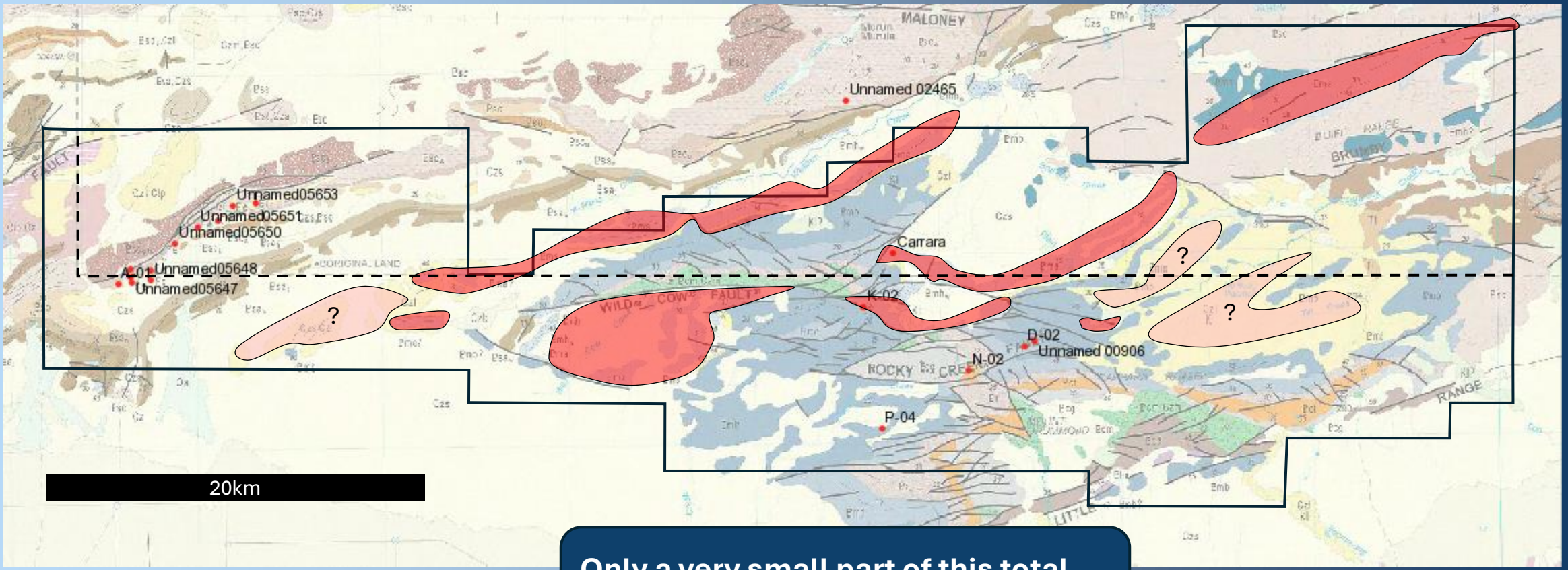


Figure 3 A) Sample of Plain Creek Formation, Carrara Range, with incipient MnO mineralisation. Note the diffuse quartz-MnO domains and discrete 'feeder' veinlets. The veinlets were targeted for fluid inclusion investigations. B) Massive cryptomelane-pyrolucite occurrence.

Figure from Carson et al 2020

The Carrara Range Project Hosts Extensive Plain Creek Formation

- The Carrara Range hosts approximately 75km strike length of Plain Creek Formation (red shaded areas) and possible covered extensions of Plain Creek Formation (pink shaded areas)



Only a very small part of this total exposure has been sampled to date.

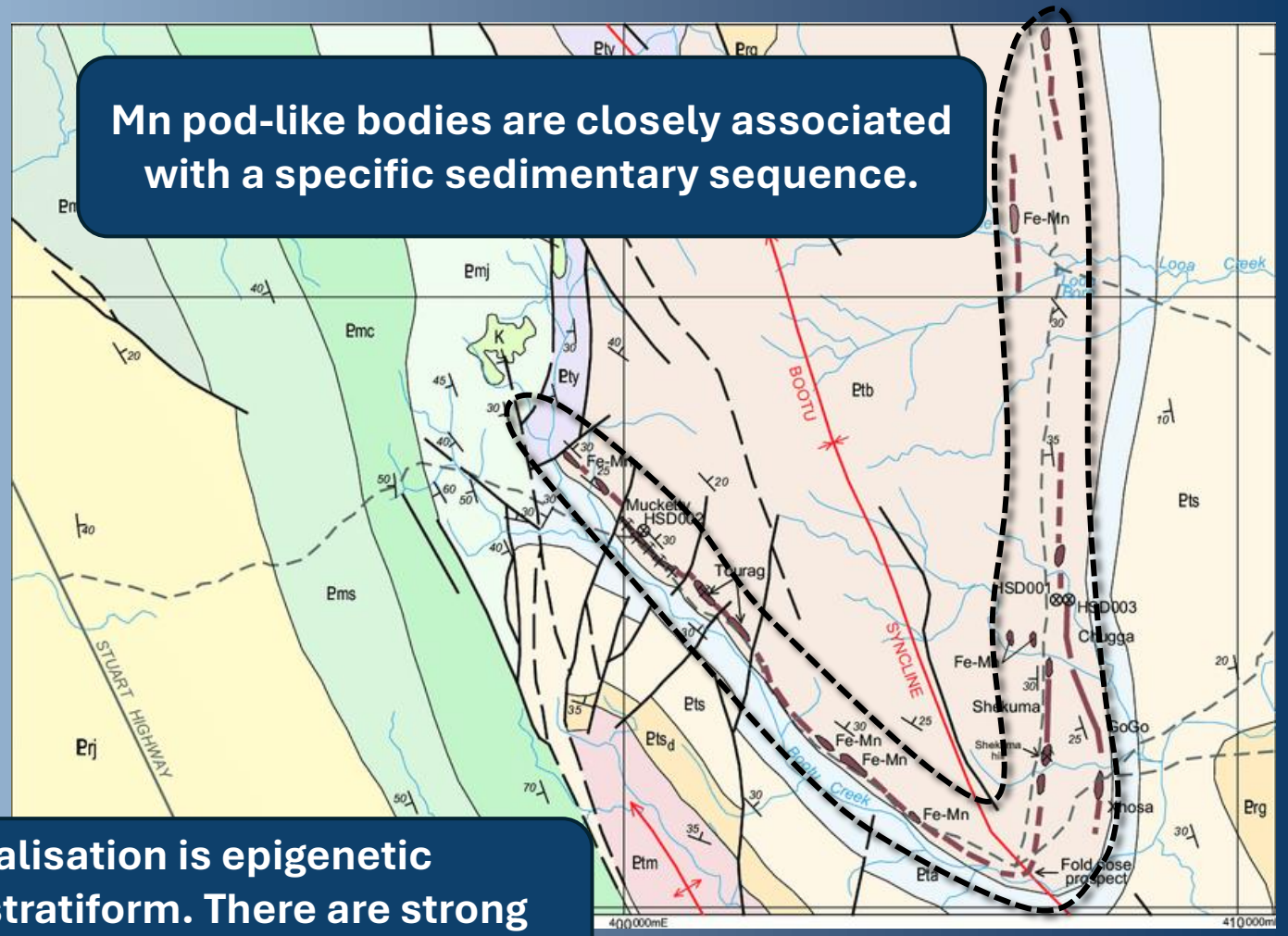
Image generated by Riviere Minerals using STRIKE

RML RESOLUTION MINERALS LTD

The Bootu Creek Manganese Deposit (Northern Territory) an Analogue for the Carrara Manganese Prospect

- The Bootu Creek Mn Deposit (110km north of Tennant Creek) operated between 2005 and 2021
- A JORC 2012 combined resource and reserve of 12.5Mt at 21% Mn with a 15% Mn cut-off was published by OM Manganese Ltd (ASX announcement 24 April 2013)
- Ore-grade Mn is hosted in a sequence of dolostones, claystones, siltstones and sandstones comprising the Bootu Formation
- Up to four Mn horizons ("seems") from 2m to 6m thick are traceable over a 24km strike length

Map from Hussey et al 2001 copied from PA Ferenczi 2001 Iron Ore, Manganese and Bauxite Deposits of the Northern Territory Vol 13, NTGA



The Mn mineralisation is epigenetic replacement and stratiform. There are strong parallels with the Carrara Mn Prospect.

The Bootu Creek Manganese Deposit

- Mn ore minerals at Bootu include: cryptomelane (dominant), psilomelane, pyrolusite and hollandite (minor)
- Elevated metals include: Pb, Cu, (Ba)
- Mn is believed to have been present as a primary component in a Mn-rich marine sediment, but concentrated during post-depositional, low temperature hydrothermal replacement and supergene enrichment

Stromatolite from a dololuite bed at Bootu that has been replaced by manganese oxide.

Rock specimen is not the property of Resolution Minerals Ltd

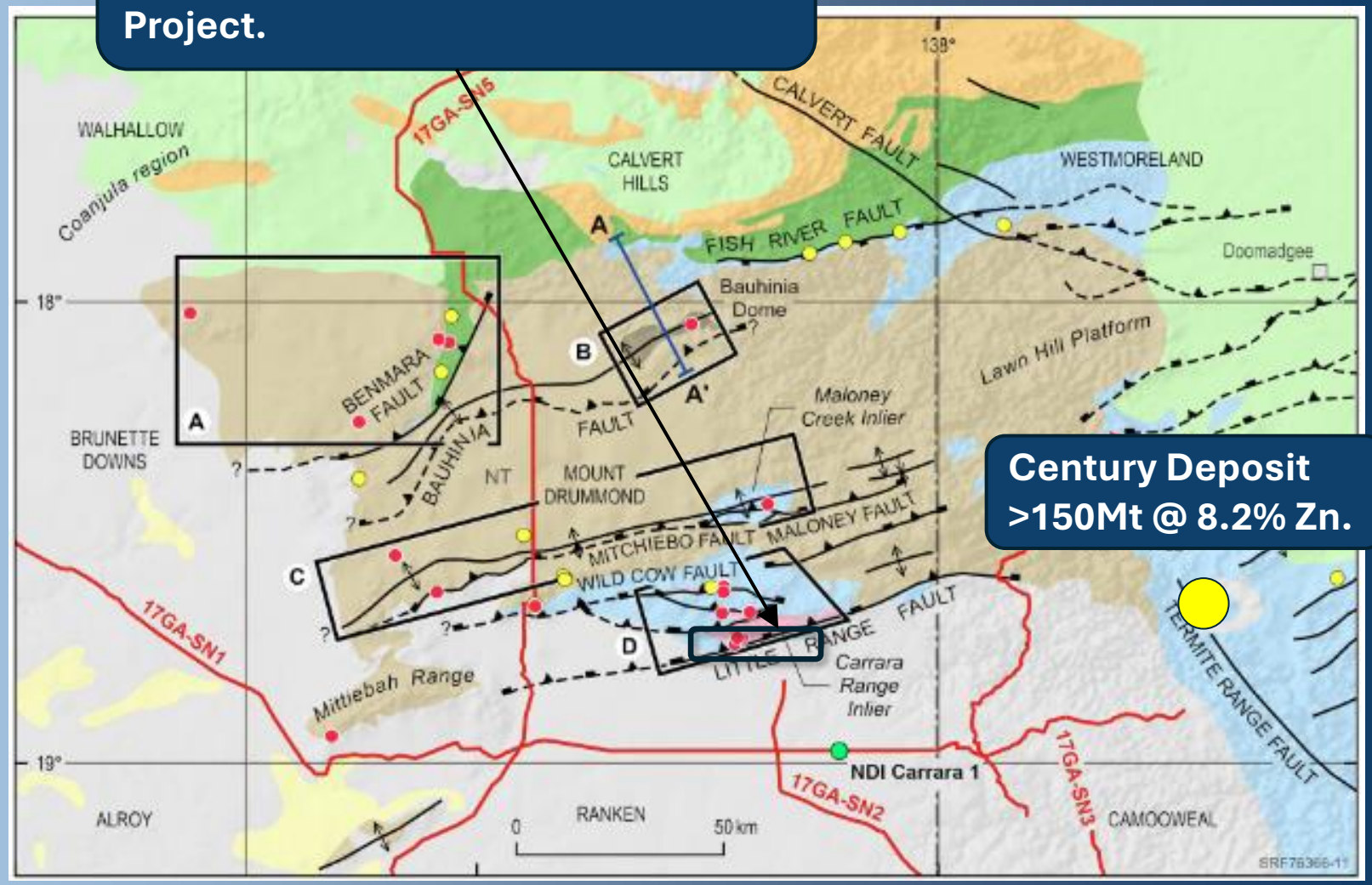
The same mineralising processes are believed to have occurred along sections of the Plain Creek Formation within the Carrara Range Project area.

Photo of Mn outcrop at the Bootu Mn Deposit

A Regional Perspective of the Carrara Range Project

- The Carrara Range Project covers the Lawn Hill Platform inlier in the South Nicholson Basin region
- Recent investigations by Geoscience Australia (Carson et al 2023) have materially upgraded the prospectivity of the South Nicholson Basin and Lawn Hill Platform geological provinces
- **Based on its regional geological setting Carrara Range has significant base metal (Pb-Zn) and uranium potential**

The regional study area showing the location of RML's Carrara Range Project.

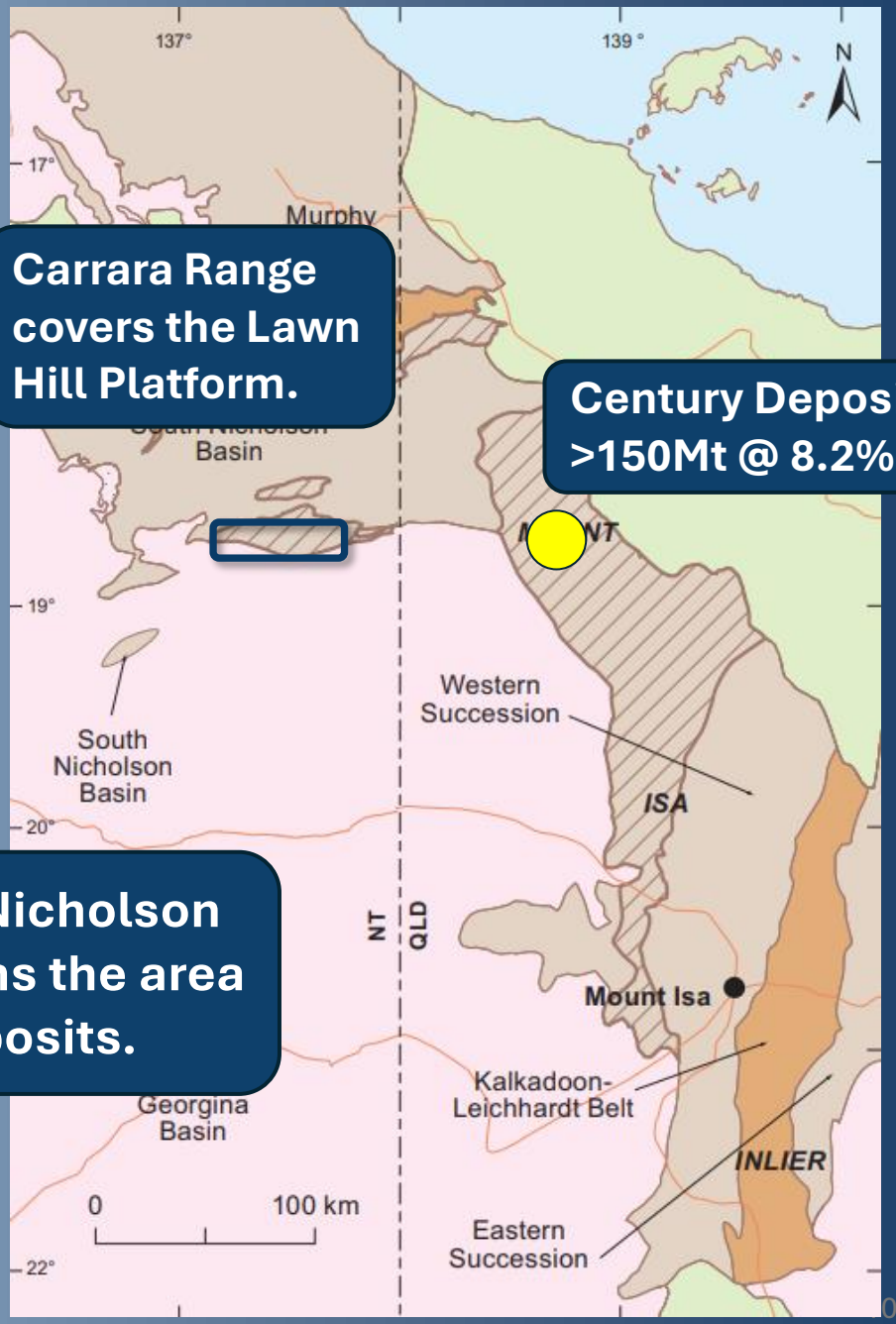


Century Deposit >150Mt @ 8.2% Zn.

Stratigraphic column from C. J. Carson, N. Kositcin, J. R. Anderson & P. A. Henson (19 Oct 2023): A revised Proterozoic tectono-stratigraphy of the South Nicholson region, Northern Territory, Australia—insights from SHRIMP U–Pb detrital zircon geochronology, Australian Journal of Earth Sciences, DOI: 10.1080/08120099.2023.2264355

Base Metals and Uranium Potential at the Carrara Range Project

- **In addition to manganese, the Carrara Range Project has the potential to host base metals and uranium**
- This is largely based on the revised understanding of the Lawn Hill Platform tectono-stratigraphy and existence of favourable regional scale geophysical features
- Two styles of mineralisation are particularly salient:
  - **SEDEX**
  - **Unconformity Uranium**

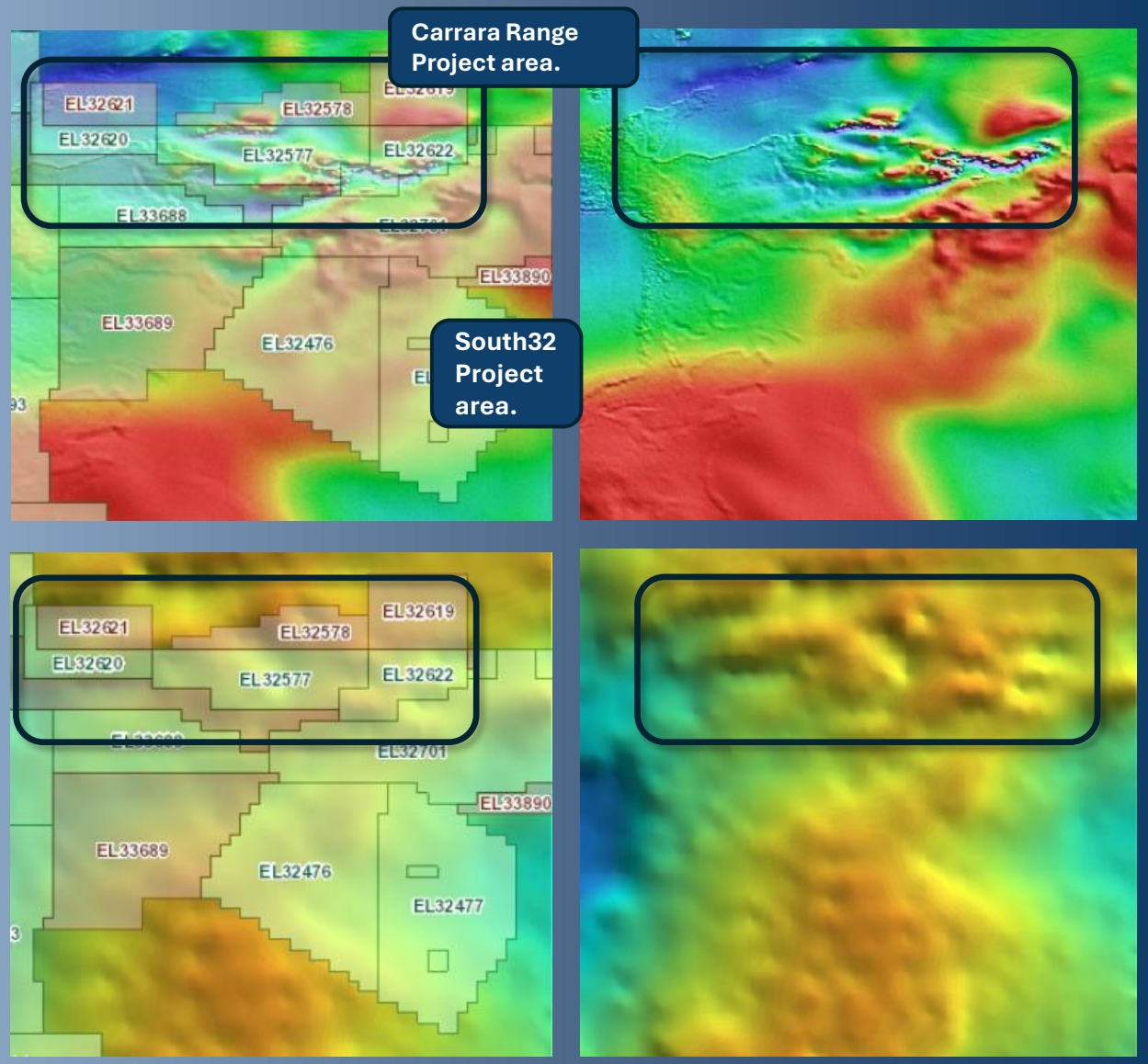


The revised geochronological status of the South Nicholson region, including the Lawn Hill Platform inlier, means the area is now highly prospective for Tier-1 mineral deposits.

Plan from Ahmad M and Munson TJ, 2013. Chapter 18: Lawn Hill Platform: in Ahmad M and Munson TJ (compilers). 'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publication 5

Regional Geophysics of the Carrara Range Project and South32 Project area

- As part of the Exploring For the Future (**EFTF**) initiative Geoscience Aust and NT/QLD Geo Surveys completed extensive regional studies – including geophysics
- A regional magnetic (top right) and gravity (bottom right) SW-NE corridor converges on the Carrara Range Project area where it appears to “fragment” due to strong EW faults
- A large South32 project covers the same magnetic/gravity corridor immediately southeast of the Carrara Range Project
- **The magnetic-gravity features of the Carrara Range Project area are of great interest in terms of potential mineral systems (i.e. SEDEX deposits) and warrant further investigation**

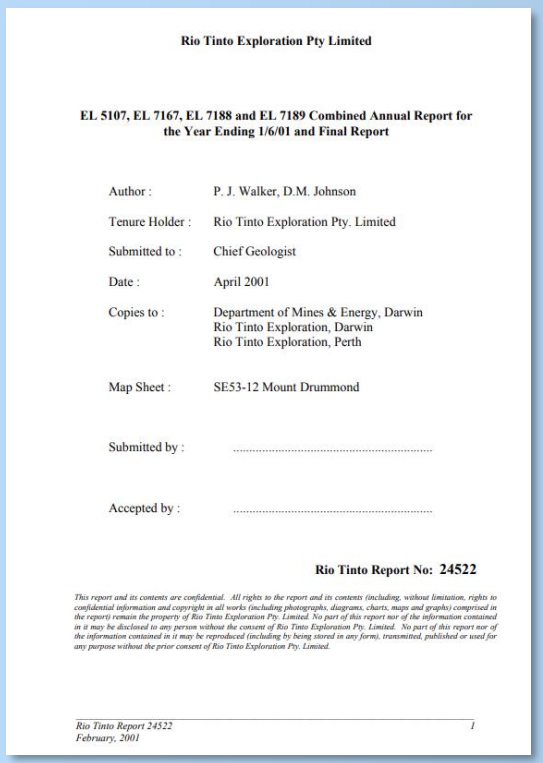


Images generated by Riviere Minerals using STRIKE

Rio Tinto Drills for Tier-1 SEDEX mineralisation in 2001

- A stream and rock chip program identifies geochemical anomalies believed prospective for SEDEX-style mineralisation
- Rio complete 93 RAB holes (plan below) for 2,850m but fail to identify near-surface stratiform Pb-Zn mineralisation (average hole depth is <40m)
- **Rio concluded that it had tested false-gossans (Pb-Zn scavenged in Mn-Fe-rich regolith) – they did not test geophysical anomalies, nor the Plain Creek Formation**

Image generated by Riviere Minerals using STRIKE

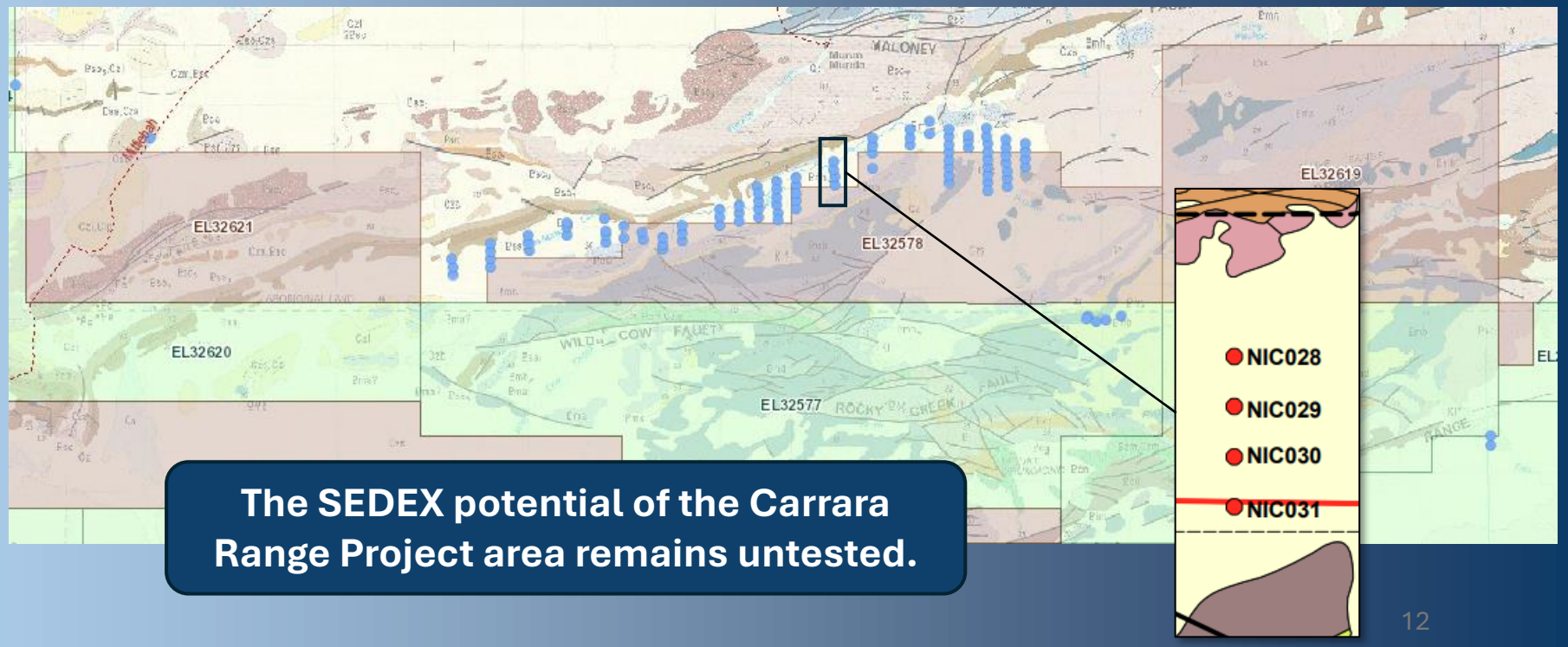


Rio Tinto Exploration Pty Limited

EL 5107, EL 7167, EL 7188 and EL 7189 Combined Annual Report for the Year Ending 1/6/01 and Final Report

Author :	P. J. Walker, D.M. Johnson
Tenure Holder :	Rio Tinto Exploration Pty. Limited
Submitted to :	Chief Geologist
Date :	April 2001
Copies to :	Department of Mines & Energy, Darwin Rio Tinto Exploration, Darwin Rio Tinto Exploration, Perth
Map Sheet :	SE53-12 Mount Drummond
Submitted by :	.....
Accepted by :	.....

Rio Tinto Report No: 24522

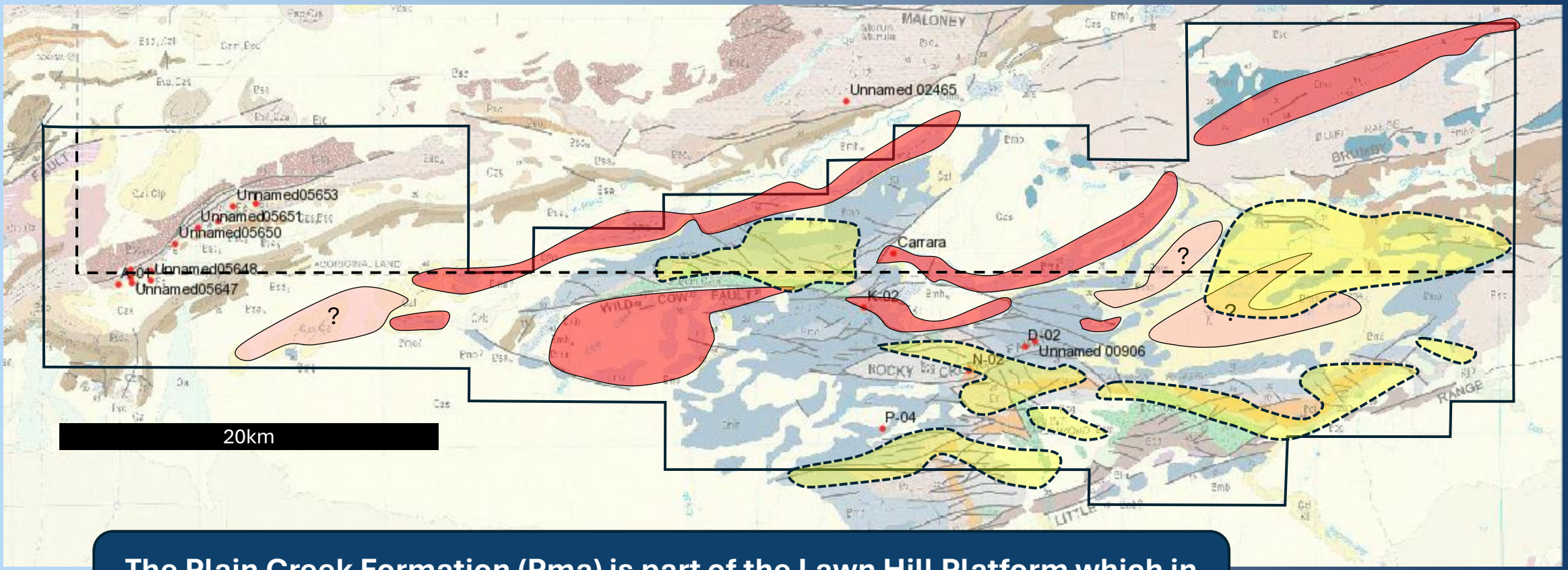


The SEDEX potential of the Carrara Range Project area remains untested.

Magnetics (TMI) of the Carrara Range Project

- The magnetic high anomalies (yellow shaded areas) do not appear to be lithologically constrained
- **Provided the revised lithostratigraphic association the Carrara Range Group with sediments hosting Tier-1 SEDEX deposits (Century, McArthur River, etc..) these targets warrant further investigation and testing**

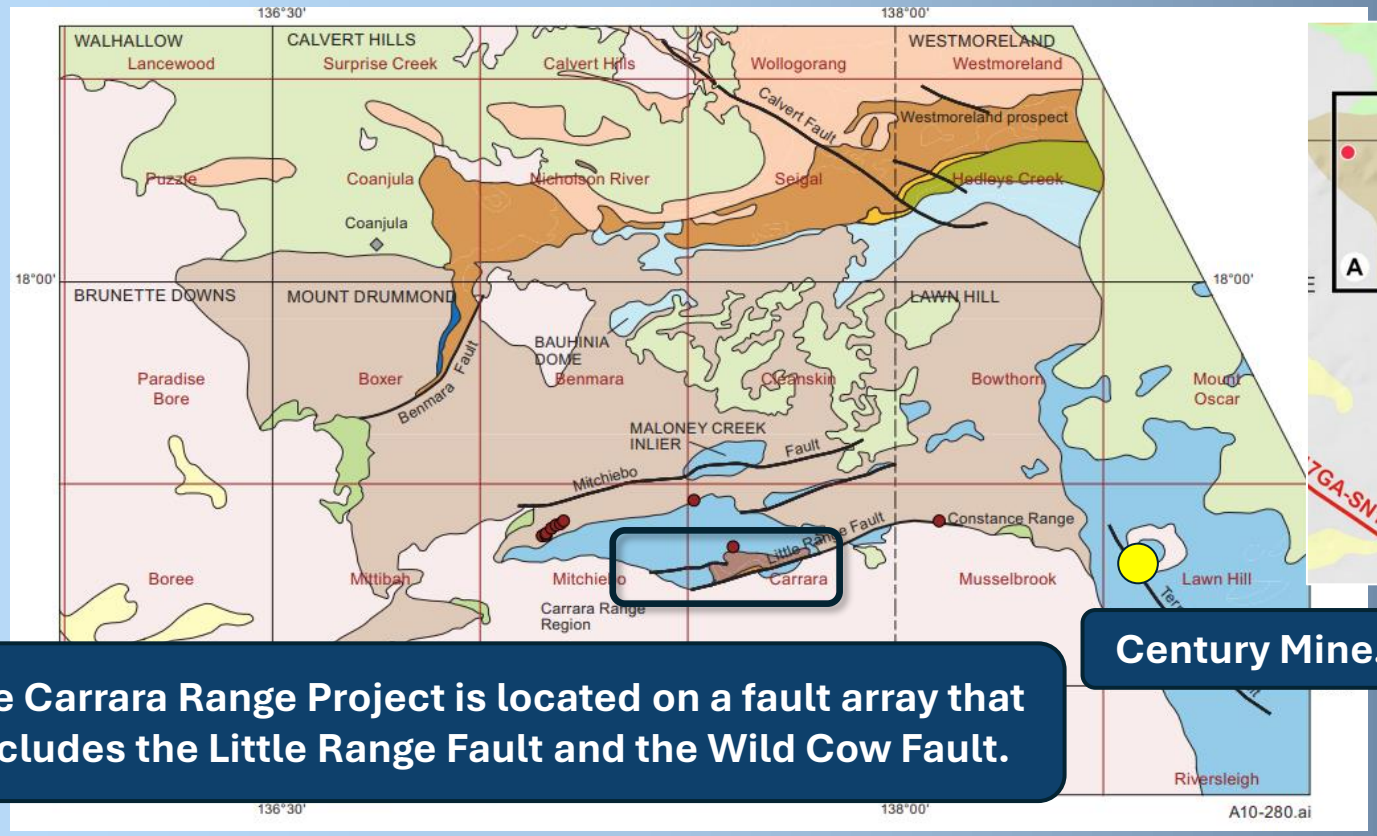
Image generated by Riviere Minerals using STRIKE

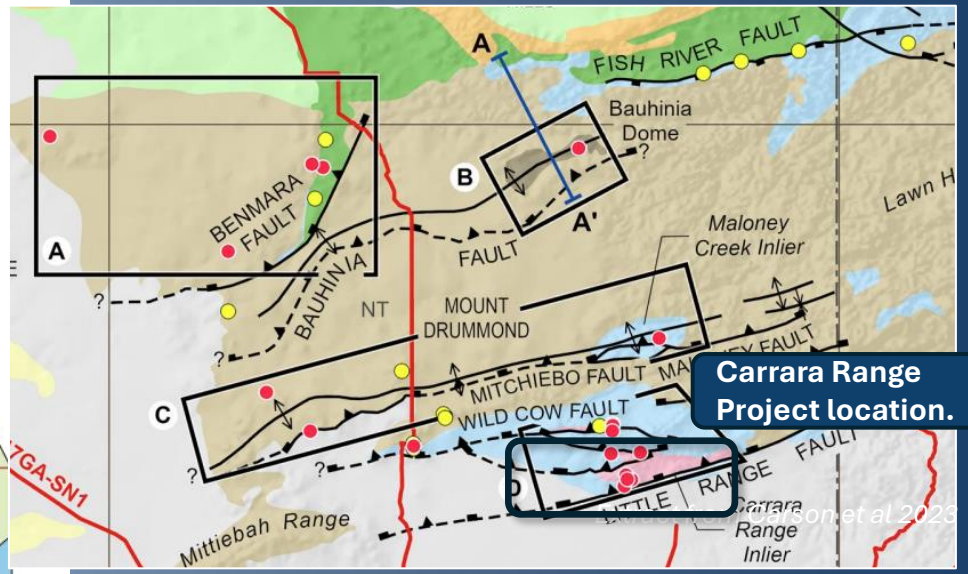


The Plain Creek Formation (Pma) is part of the Lawn Hill Platform which in QLD hosts several Tier-1 base metal deposits including Century.

Regional Structures of the Carrara Range Project

- The Carrara Range Project is located on a series of E-W regional-scale faults that have shaped and helped create the Lawn Hill Platform inlier in the Carrara Range area
- The structural regime is not dissimilar to that which created the Murphy Province (brown shaded area)

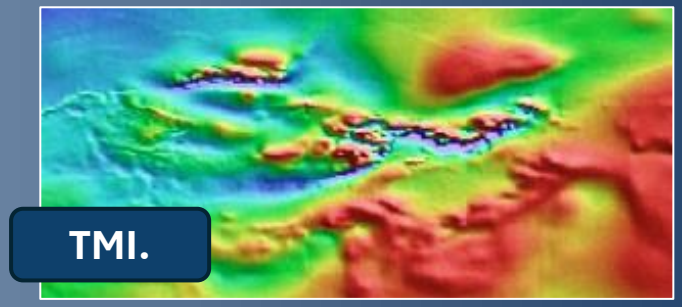




Carrara Range Project location.

Century Mine.

The Carrara Range Project is located on a fault array that includes the Little Range Fault and the Wild Cow Fault.



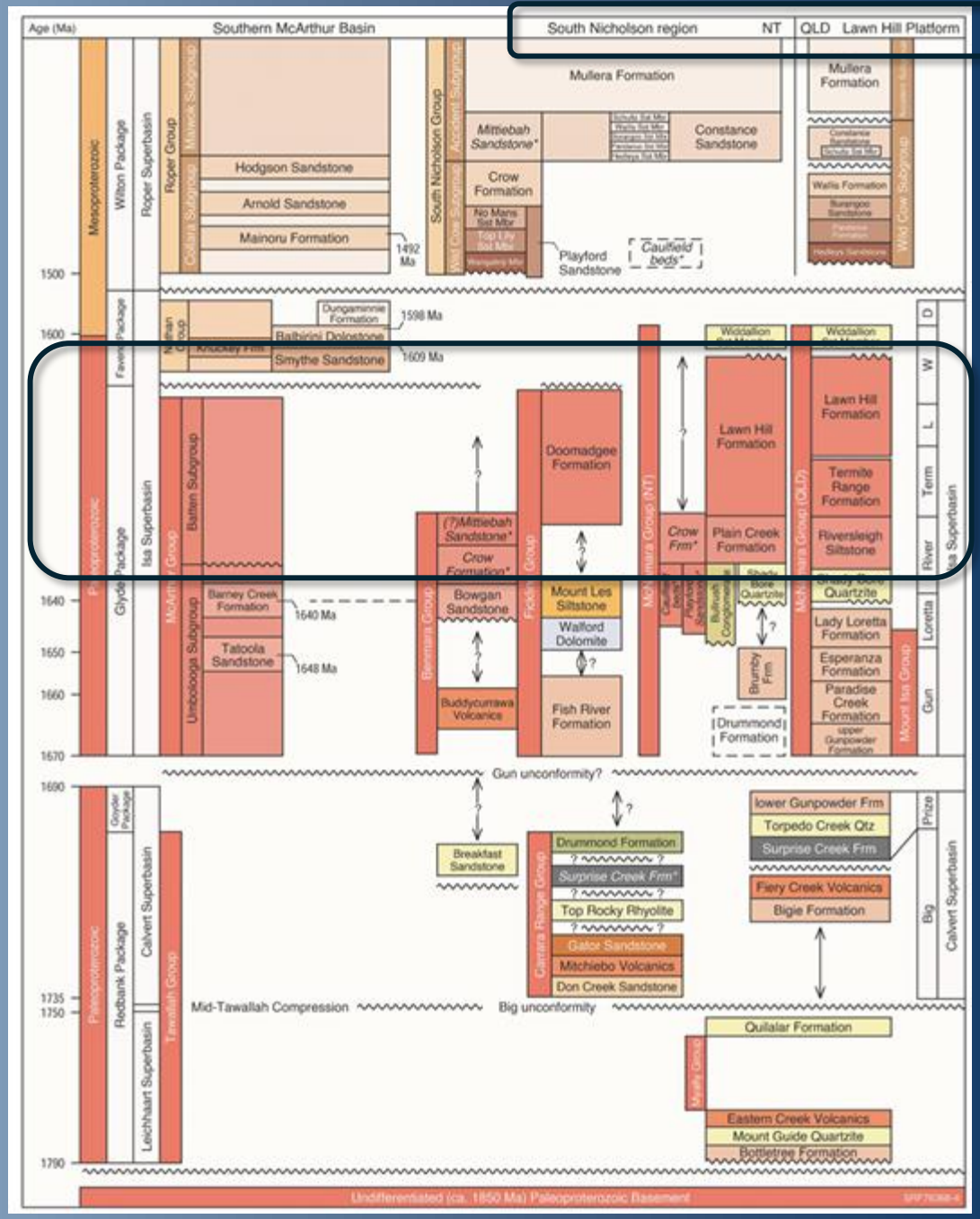
TMI.

Plan from Ahmad M and Munson TJ, 2013. Chapter 18: Lawn Hill Platform: in Ahmad M and Munson TJ (compilers). 'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publication 5

The SEDEX potential of the Carrara Ridge Project

- The Carrara Range Project hosts extensive Lawn Hill Platform geology – which "across the border" in QLD hosts the Tier-1 Century Zn and McArthur River Pb-Zn mines
  - **Century: A published (1998) mineral resource of 167.5 Mt @ 8.24% Zn, 1.23% Pb, 33 g/t Ag**
  - **McArthur River: A published (2016) mineral resource of 190Mt @ 9.4% Zn, 4.5% Pb, 46g/t Ag**

  (both resource statements from Porter GeoConsultancy 2005)
- A revised Proterozoic tectono-stratigraphy now links the Lawn Hill Platform of the NT with that of west QLD
- The implication is that the Lawn Hill Platform has a raised level of prospectivity now approaching that of the McArthur Basin and the Mt Isa Province



Stratigraphic column from C. J. Carson, N. Kositcin, J. R. Anderson & P. A. Henson (19 Oct 2023): A revised Proterozoic tectono-stratigraphy of the South Nicholson region, Northern Territory, Australia—insights from SHRIMP U–Pb detrital zircon geochronology, Australian Journal of Earth Sciences, DOI: 10.1080/08120099.2023.2264355

Untested Uranium Potential of the Carrara Range Project

- The Don Creek Formation (***Pcd*** – brown shaded area) of the Lower Carrara Group [Lawn Hill Platform] correlates with the Westmoreland Conglomerate (Ahmad et al 1989, Haines et al 1993)
- The Top Rocky Rhyolite (***Pct*** – orange shaded area) of the Upper Carrara Group comprises porphyritic rhyolites and pebble and boulder conglomerates
- The Westmoreland Conglomerate hosts the deposits of the Westmoreland Uranium Field that have a combined resource of 15.6Mt at 1.18% U_3O_8 for 17,900 tonnes of U_3O_8 (Westmoreland-Redtree Porter GeoConsultancy 2005)
- **There is a ±30km strike length of Top Rocky Rhyolite on the granted part of the Carrara Range Project**

Top Rocky Rhyolite conglomerate in outcrop.

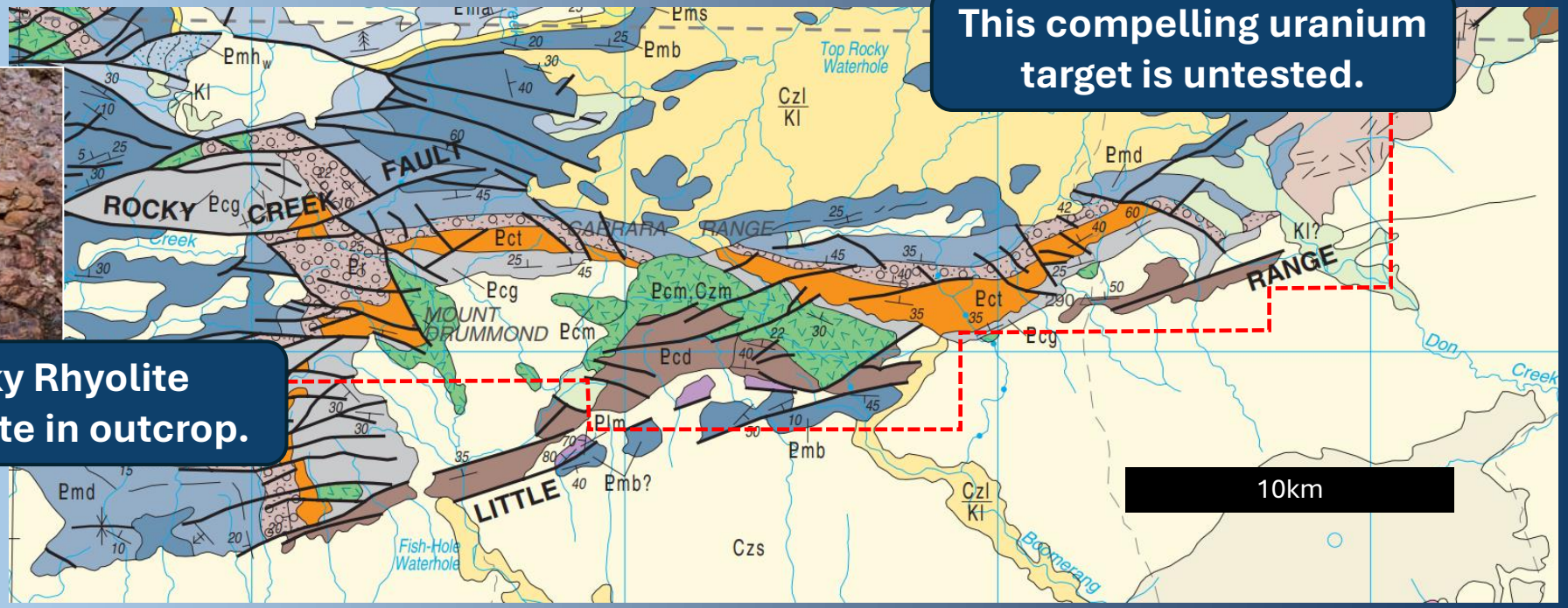
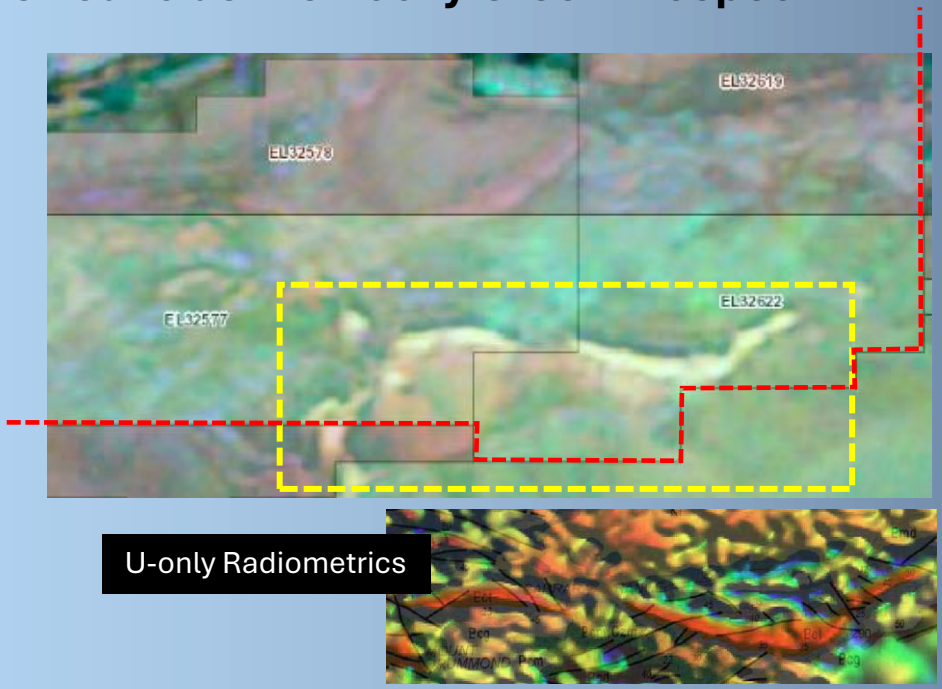
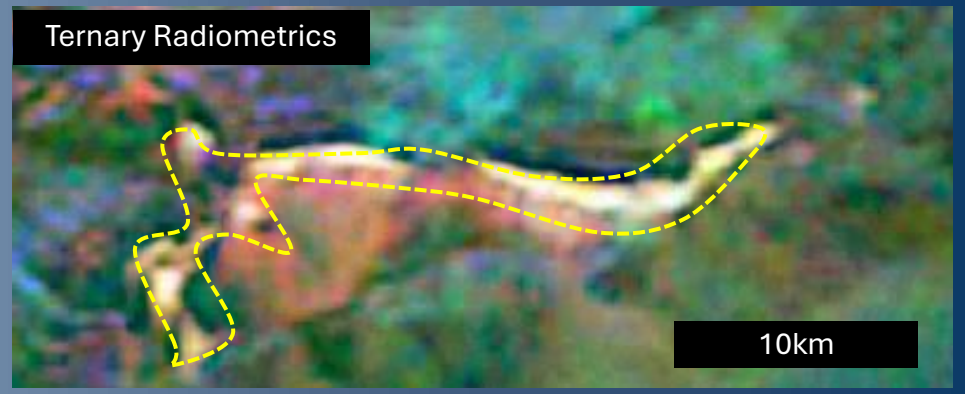


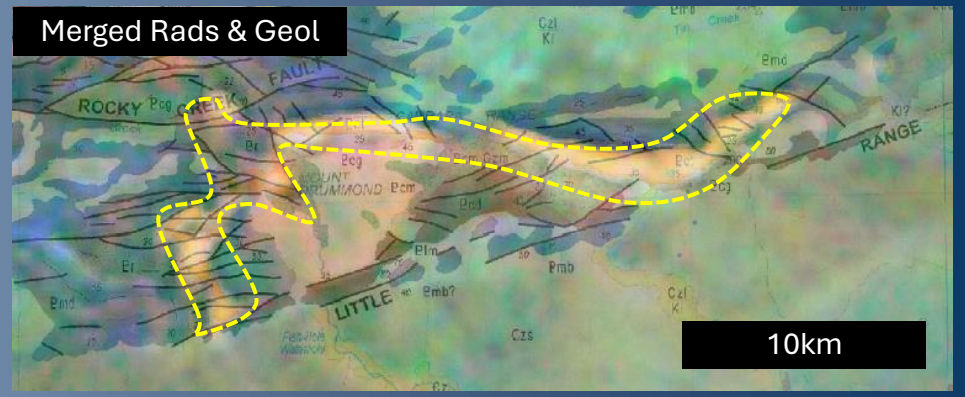
Image generated by Riviere Minerals using STRIKE

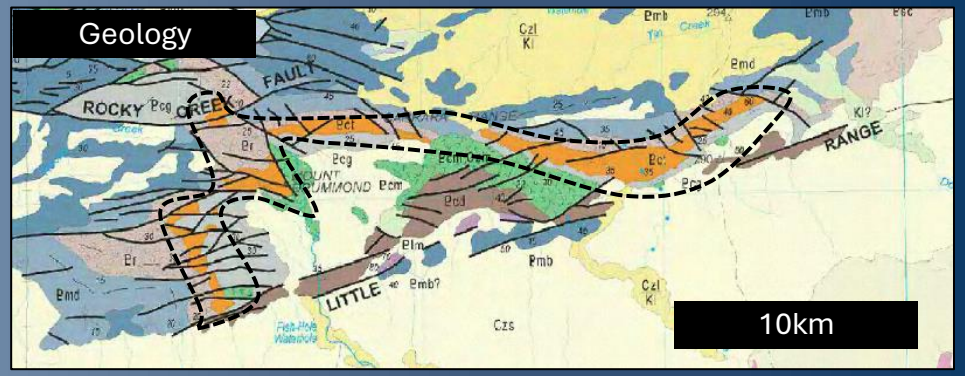
Radiometrics Confirms Uranium Potential of Carrara Range

- There is a radiometric anomaly coinciding with the Top Rocky Rhyolite, a unit which hosts conglomerates and is part of the Carrara Range Group which is correlated with the Westmoreland Conglomerate (of the Tawallah Group).
- The Top Rocky Rhyolite radiometric anomaly is ±30km long and 2km wide
- **This newly recognised highly prospective uranium target is hereafter referred to as the Rocky Creek Prospect**









Images generated by Riviere Minerals using STRIKE

Unconformity Uranium at Carrara Range: A Westmoreland – Athabasca Basin Analogue

- The Carrara Group [of the Lawn Hill Platform] correlates with the Westmoreland Conglomerate *as previously stated*
- The Westmoreland uranium deposits are analogous to the world-class Athabasca unconformity uranium deposits – by extension then - **the Carrara Group potential ≡ Westmoreland ≡ Athabasca**
- Uranium deposits within the Athabasca Basin are located on deep seated structures at an unconformity between oxidised permeable Palaeoproterozic-aged sediments and older uranium-rich reduced Palaeoproterozic/Archaean-aged granites and metamorphics

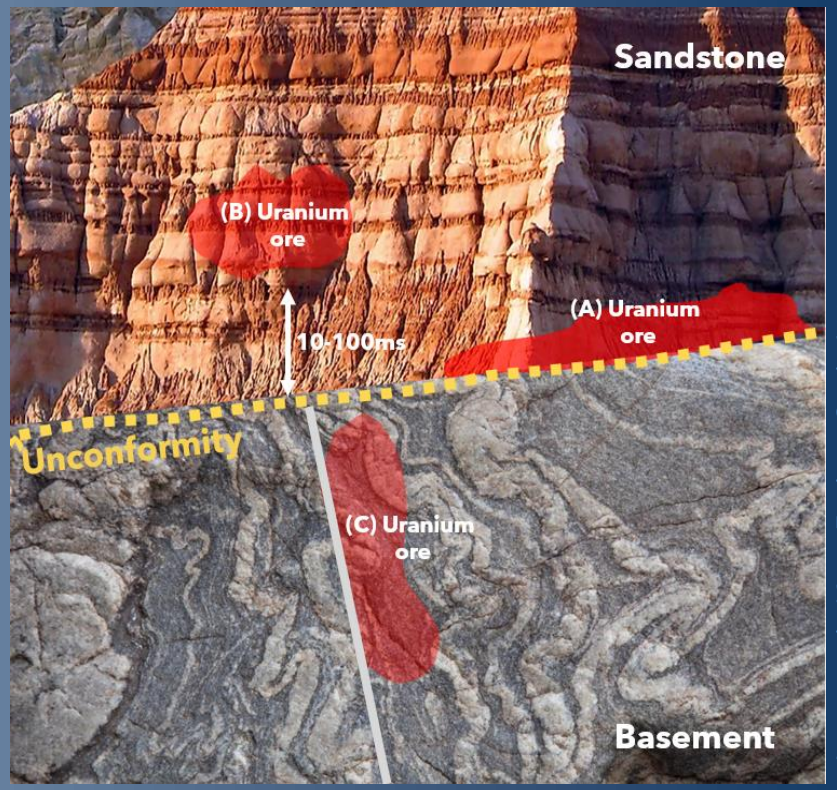
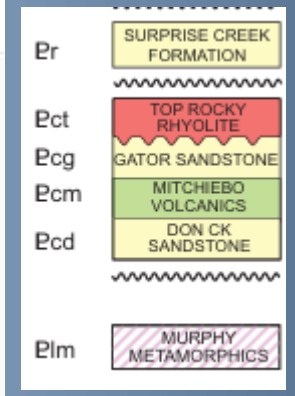


Image copied from Equivest Capital 2021

Summary of regional geology of Carrara Range area from NT's STRIKE data base.

A late Palaeoproterozoic deformed sedimentary basin. Major exposures are in Queensland.	Unconformably overlies Palaeoproterozoic Murphy Inlier. Unconformably overlain by South Nicholson Basin and Georgina Basin.
A widespread Neoproterozoic to Palaeozoic intracratonic basin that was initiated as part of the Centralian Superbasin and extends east into Queensland	Unconformably overlies the Aileron Province, Tennant Region, Murphy Inlier, McArthur and South Nicholson Basins and Lawn Hill Platform. Interpreted to be contiguous at depth with Wiso and Daly Basins. Conformably overlies Kalkarindji Province. Unconforma

Description copied from STRIKE

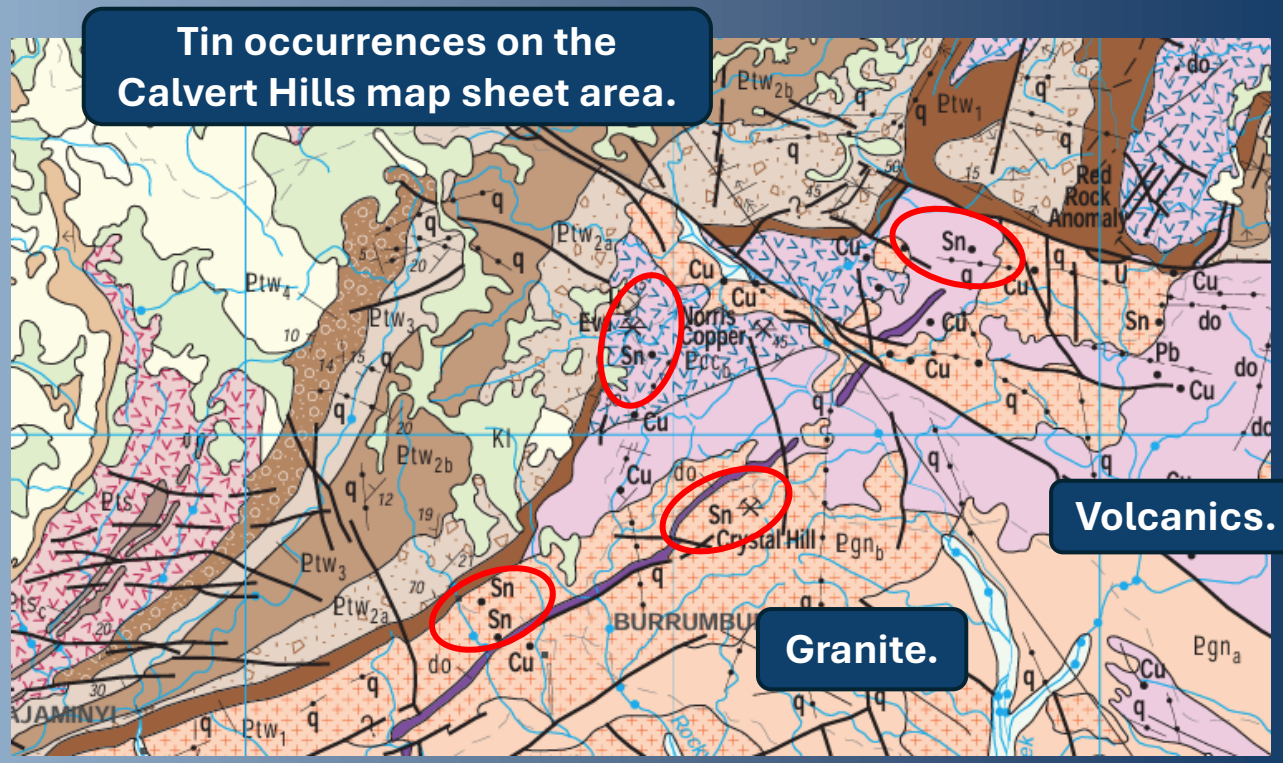


Deep seated (compression) structures and the right geology exists at the Carrara Range Project.

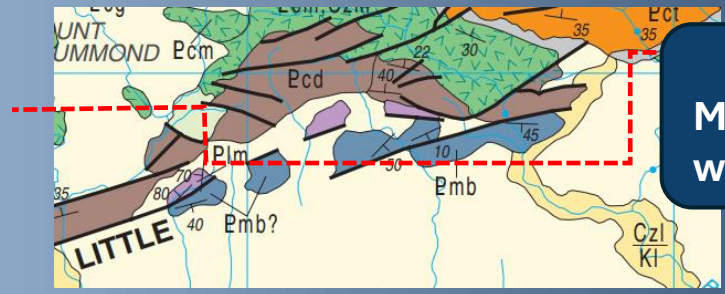
RML RESOLUTION MINERALS LTD

Other metals at the Carrara Range Project – Tin and Iron

- Several vein-related tin (**Sn**) occurrences are known in the Calvert Hills map area north of Carrara Range (Eva, Crystal Hill, Tracys Table) – these are hosted in granites and rhyolites of the Nicholson Granite Complex and Cliffdale Volcanics (of the Murphy Province)
  - The tin is associated with shear zones and quartz veining
  - An 8km strike length of Murphy Province metamorphics (purple shaded area) which is located within a fault zone occurs within the Carrara Range Project area
  - This area represents a valid tin exploration target
- **The Carrara Range Project hosts the Mitchiebo Waterhole Iron Deposit**, within the Burangoo Sandstone Member (South Nicolson Group)
  - Fe mineralisation is fine grained haematite with secondary enrichment (historic av Fe 35% Fe_2O_3) (DJ Rawlings et al Mount Drummond 1:250,000 Geol. Map Ser. Explan. Notes NTG 2008)
  - Mineralisation extends over 10kms as 100m-1,000m long lenses



Images generated by Riviere Minerals using 1:250,000 Calvert Hills and Mount Drummond Geology Maps



An 8km strike length of Murphy metamorphics which warrants investigation for tin.

The Exploration Potential of Resolution Minerals' Carrara Range Project

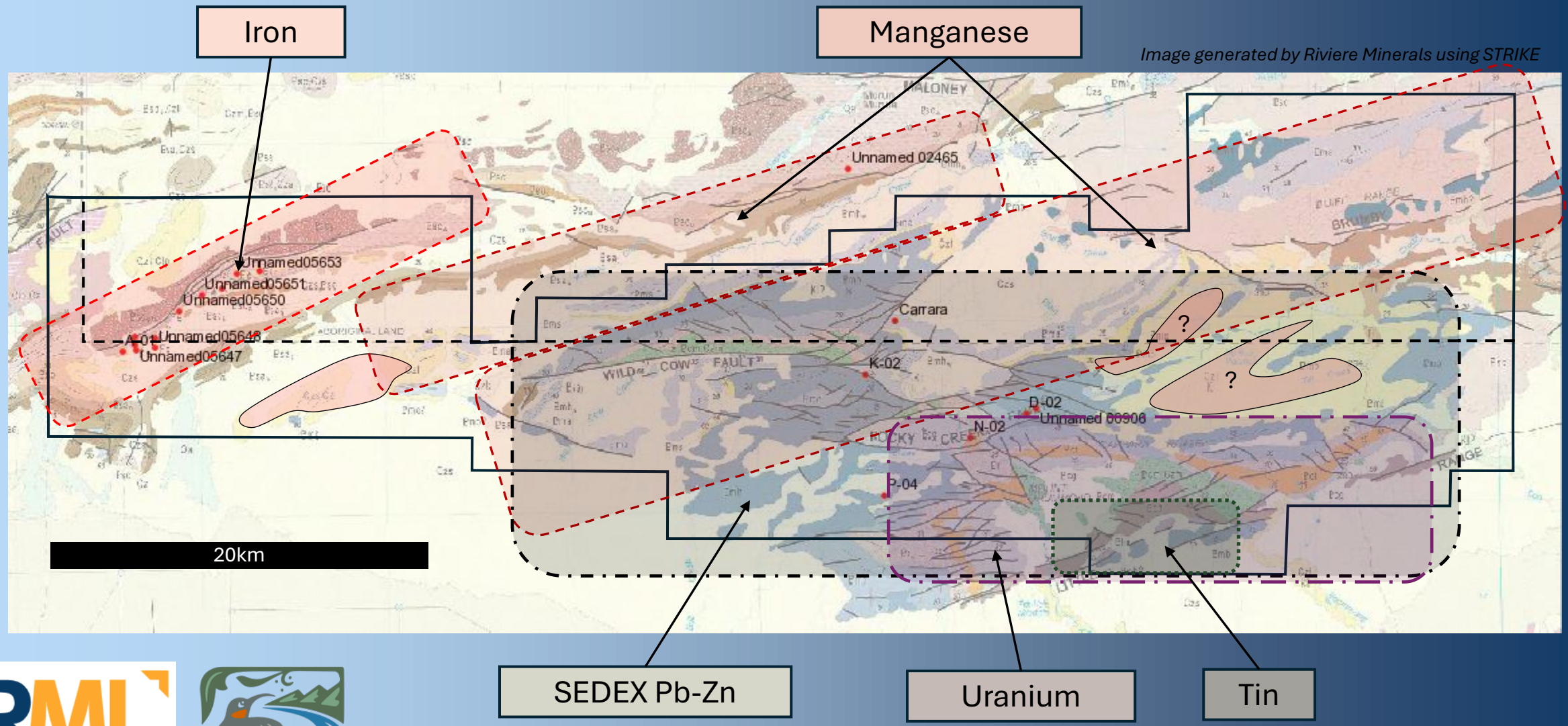
Key Takeaways:

- Large Project area (50% granted; and in good standing)
- Province has had a major geological rethink (led by Geoscience Australia) which has materially increased the mineral prospectivity of the area
- **Project area hosts ±75km strike length of Plain Creek Formation** which is highly prospective for **Bootu Creek type manganese mineralisation**
- **Project area hosts favourable sediments for SEDEX mineralisation** (now correlated to the QLD Lawn Hill Platform), major structures, and several magnetic targets warranting investigation
- **Hosts 30km strike length of Top Rocky Rhyolite** with high radiometric signature which is highly prospective for **Westmoreland type (Athabasca Basin type) unconformity uranium mineralisation**
- Hosts 10km strike length of Burangoo Sandstone Member with known iron mineralisation
- Hosts 8km strike length of fault-controlled Murphy Metamorphics which has the potential for tin mineralisation

The Carrara Range is a multi-commodity project with various high levels of prospectivity warranting further exploration. Its potential for Pb-Zn and U mineralisation is a priority.

RML RESOLUTION MINERALS LTD

Commodity Search Areas of the Carrara Range Project



Recommended Next Steps at the Carrara Range Project

- ***There is potential for Bootu Hill type Mn mineralisation associated with the Plain Creek Formation***
- ***There is potential for Tier-1 SEDEX mineralisation associated with Lawn Hill Platform sediments and geophysical anomalies***
- ***There is potential for Westmoreland like uranium mineralisation associated with the Don Creek Formation*** *(and potentially the Don Creek Formation)*

An exploration program to cover all three Exploration Models may include:

Phase One

- Project wide detailed AMAGRAD and/or VTEM geophysical survey (SEDEX, U)
- Detailed mapping (with spectrometers/Scintillometers) and geochemical sampling (stream/rockchip) of the Plain Creek Formation (Mn), Top Rocky Rhyolite (U) and Don Creek Formation (U)

Phase Two

- Follow-up ground geophysics to tighten target footprint
- Follow-up geochemical sampling (grid soil) is areas of interest have poor levels of exposed rock
- First-pass drill to test possible Mn, Pb-Zn and U targets

RML RESOLUTION MINERALS LTD