



# Exploration in the Ravenswood Goldfield

Mines and Wines 2022

# Sunshine Gold



## TRIUMPH GOLD PROJECT (100%)

- 15km<sup>2</sup> intrusion related gold/orogenic system under shallow alluvial cover
- 2 granted EPM's, spanning 138 sqkm
- Maiden JORC Resource 118koz @ 2.0g/t Au

## HODGKINSON GOLD PROJECT (100%)

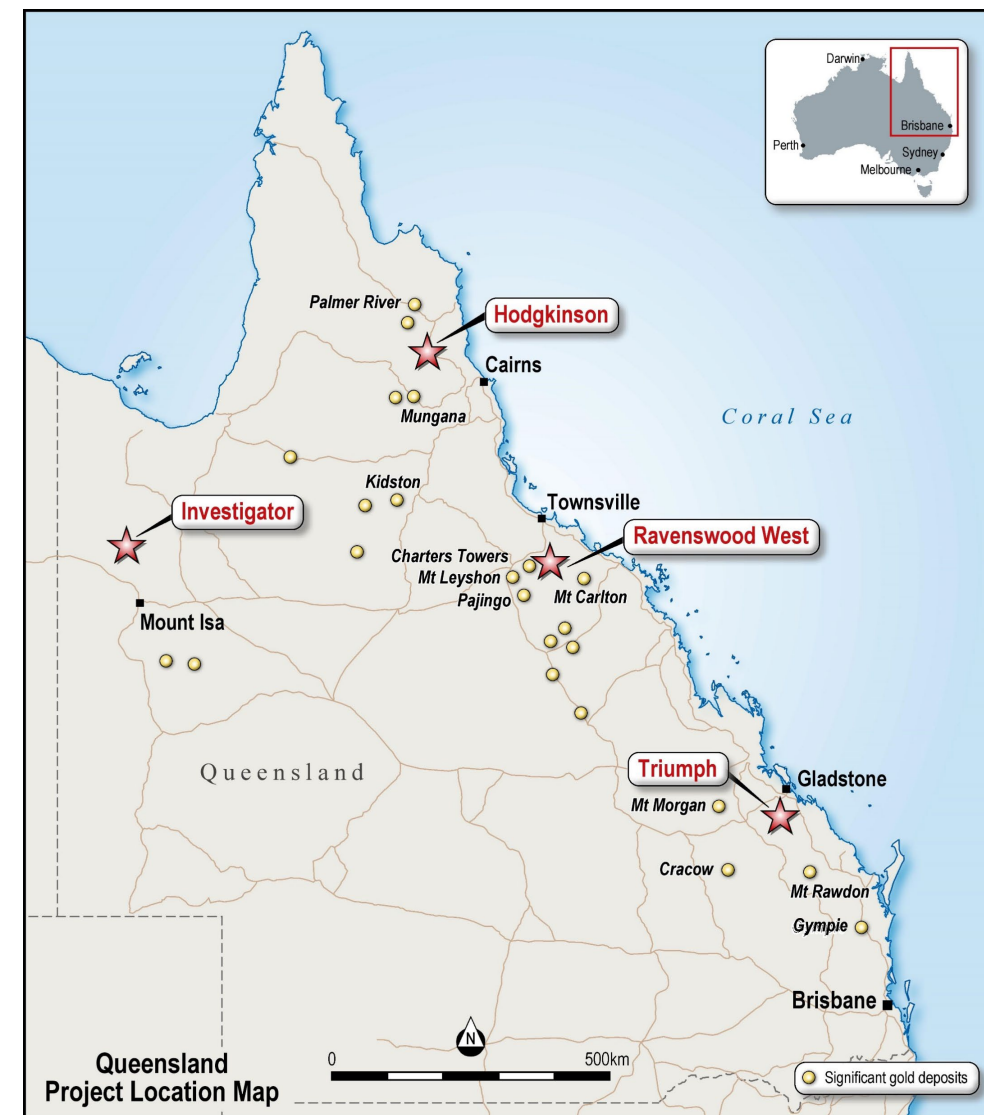
- Highly prospective structural environment along 3 major regional shears
- 6 granted EPM's covering 365 sqkm
- 5,500 line km airborne magnetic survey flown November 2020

## INVESTIGATOR COPPER PROJECT (100%)

- Located in the world-class Mt Isa Inlier
- Same stratigraphic and structural setting as the Capricorn Copper Mine
- 2 granted EPM's covering 115 sqkm
- First fieldwork completed Feb 2022

## RAVENSWOOD WEST Au, Cu, Ag, Mo & REE PROJECT (100%)

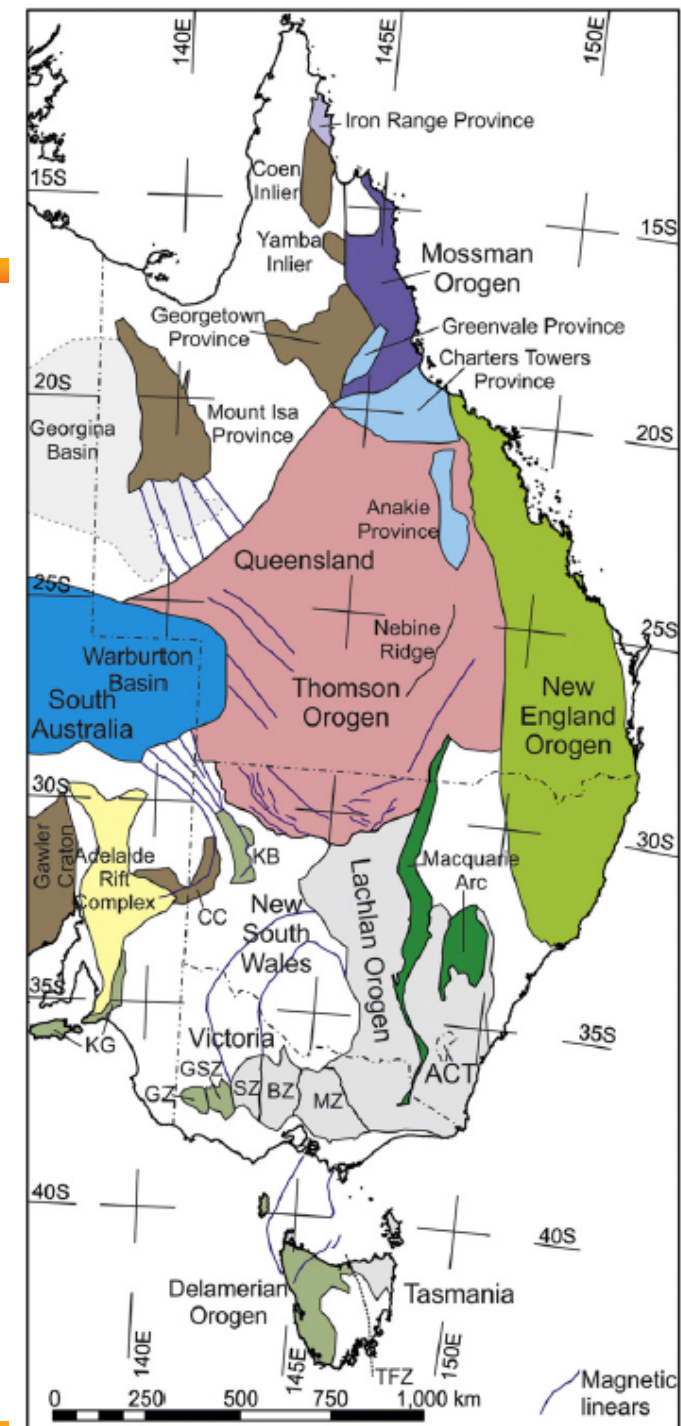
- Prospective for porphyry Cu-Au-Mo, intrusion-related Au and REE
- 6 granted EPM's spanning 446 sqkm, 2 EPMA 222 sqkm
- 15km long Cu-Au-Ag-Mo mineralised corridor
- Significant REE-Au anomalism at Elphinstone Creek



# Ravenswood Batholith Overview

- Situated within the Charters Towers Province
- Over 20Moz Au produced, more Ag
- Prospective for Au, Ag, Cu, Mo, Pb, Zn, REEs, & more?

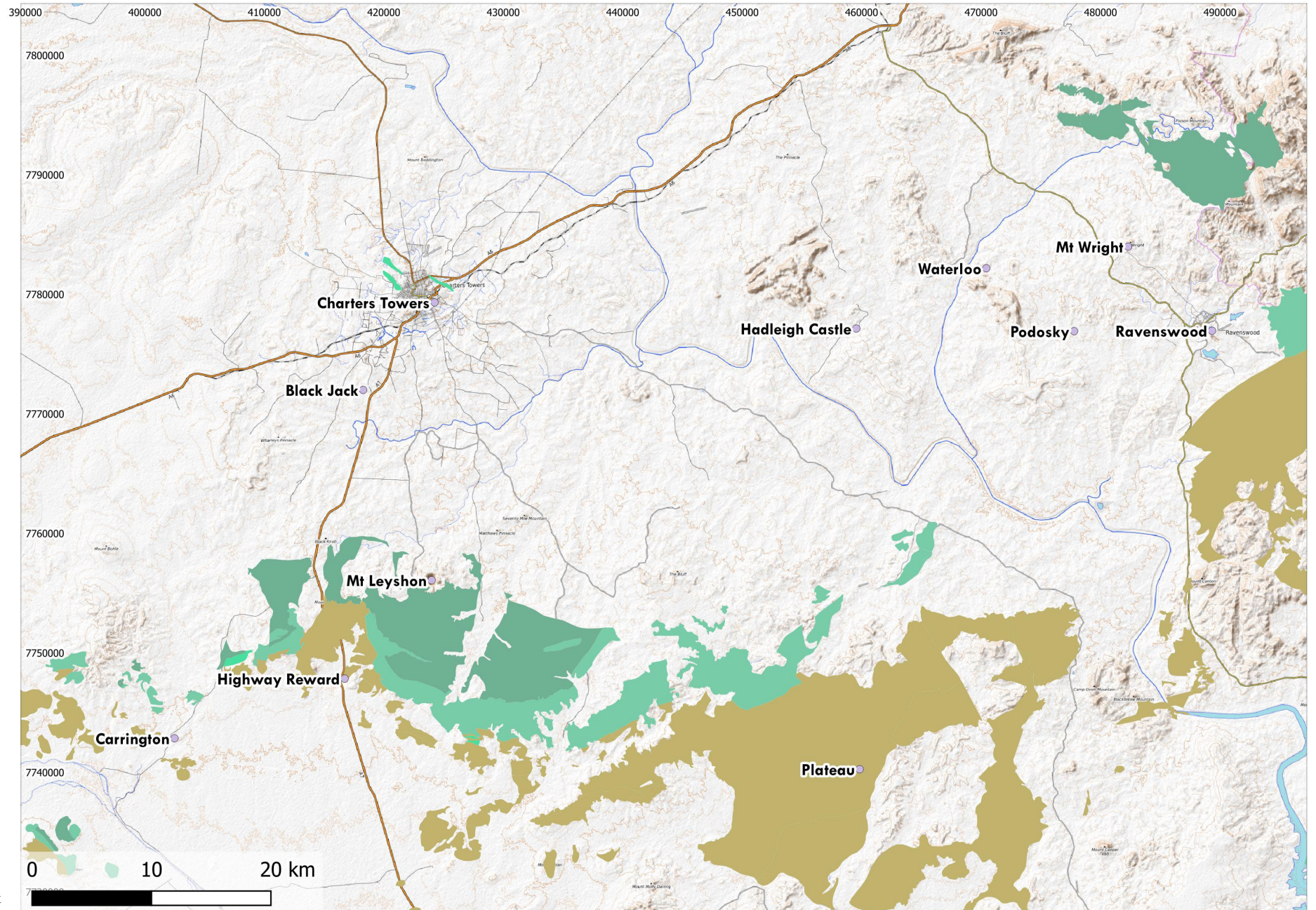
Deposit	Type	Commodity	Production / Resource
Ravenswood	Mesothermal	Au, Ag	4.0Moz Au
Charters Towers	Mesothermal	Au, Ag	6.5Moz Au
Mt Leyshon	IR Gold	Au, Ag	3.5Moz Au
Mt Wright	IR Gold	Au, Ag	1.0Moz Au
Hadleigh Castle	Mesothermal	Au, Ag	0.5Moz Au
Highway-Reward	VHMS	Cu, Au	3.6Mt @ 5.7% Cu
Thalanga	VHMS	Cu, Pb, Zn	>10Mt @ 2.5% Cu, 8% Zn, 3%Pb





# Regional Geology

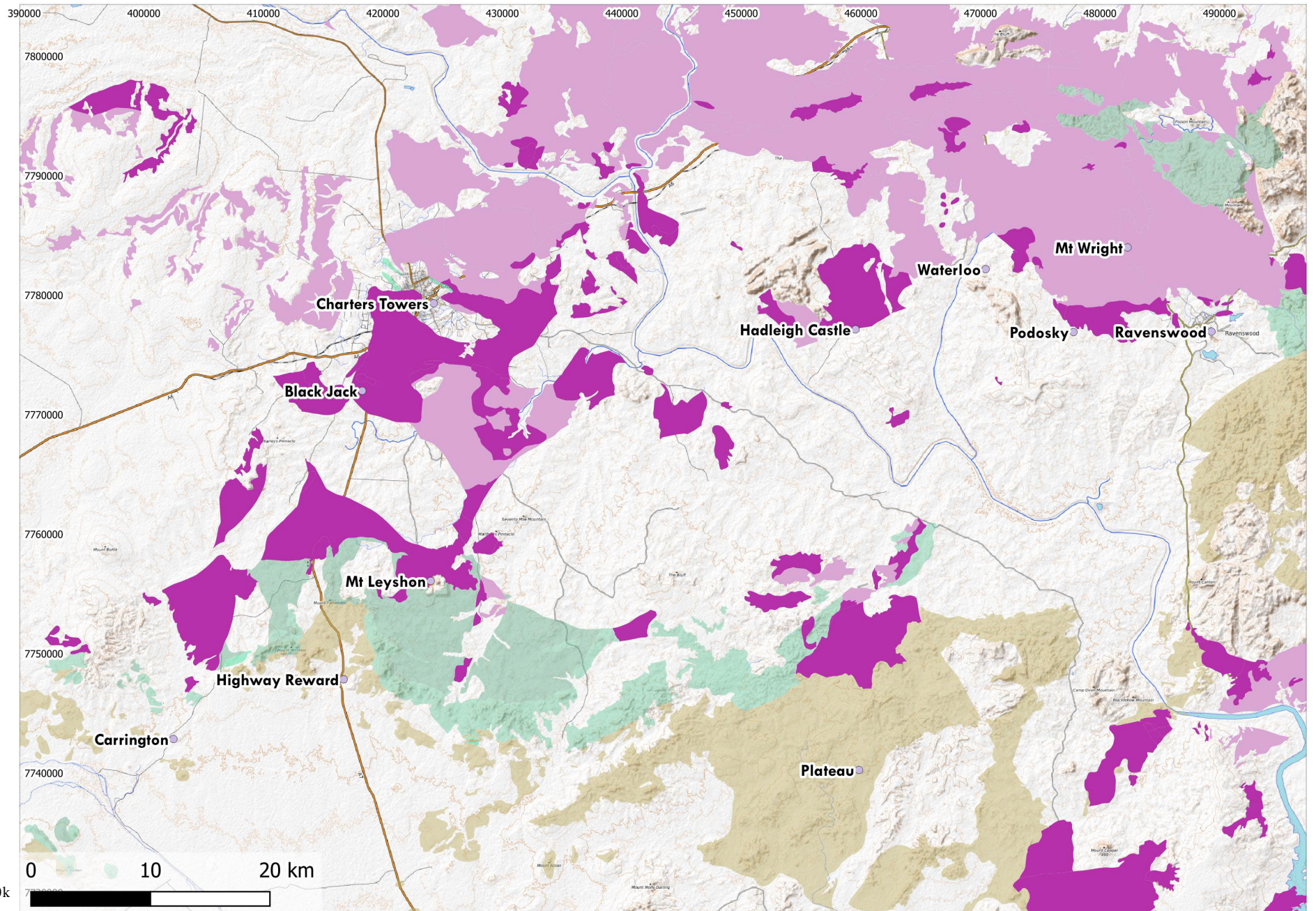
1. Cambrian to Early  
Ordovician  
Metamorphics,  
Sediments &  
Volcanics





# Regional Geology

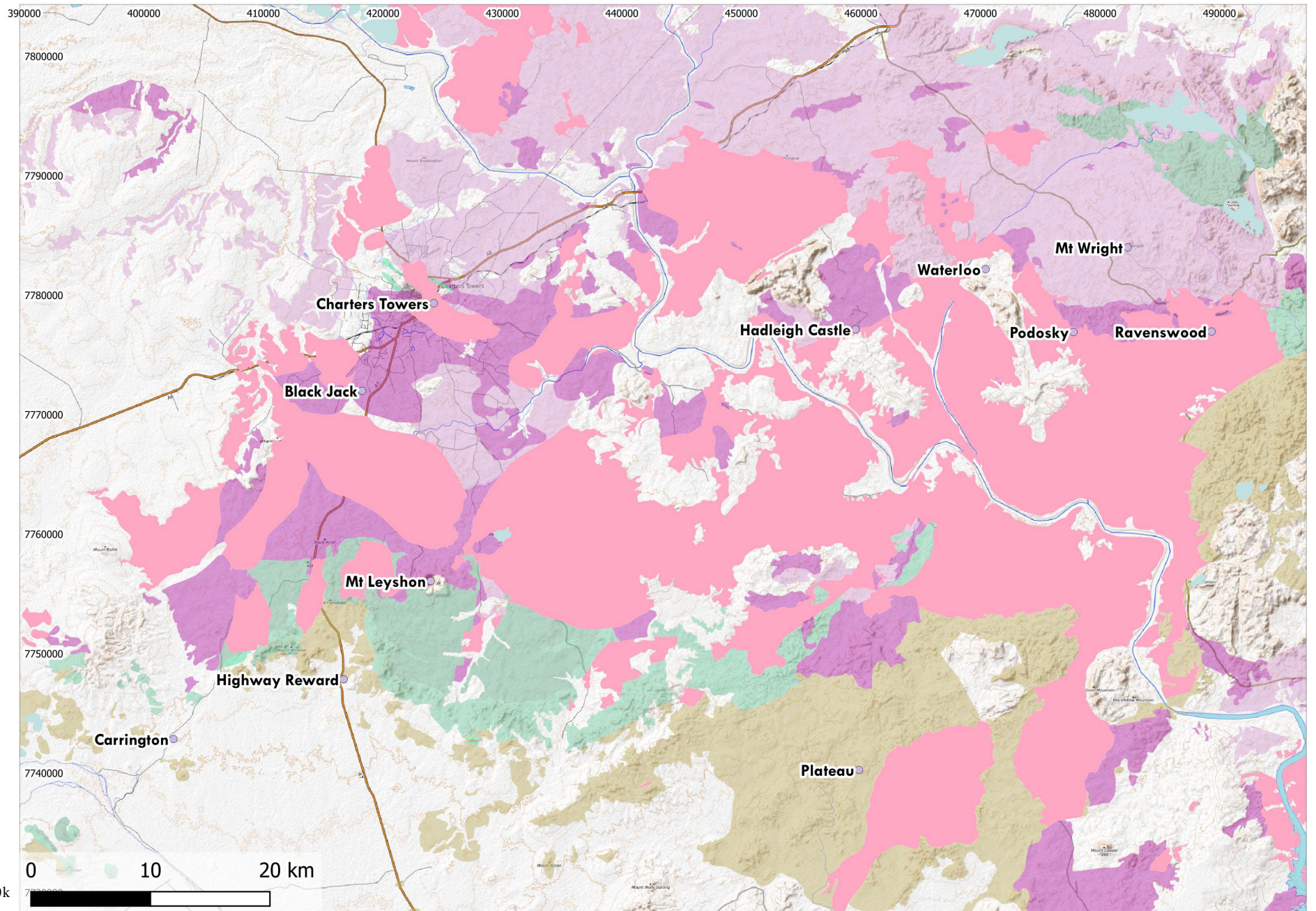
1. Late Cambrian to Early Ordovician Metamorphics, Sediments & Volcanics
2. Early to Mid Ordovician Intrusives (Macrossan Igneous Association)





# Regional Geology

1. Late Cambrian to Early Ordovician Metamorphics, Sediments & Volcanics
2. Early to Mid Ordovician Intrusives (Macrossan Igneous Association)
3. Mid Silurian to Early Devonian Intrusives (Pama Igneous Association)

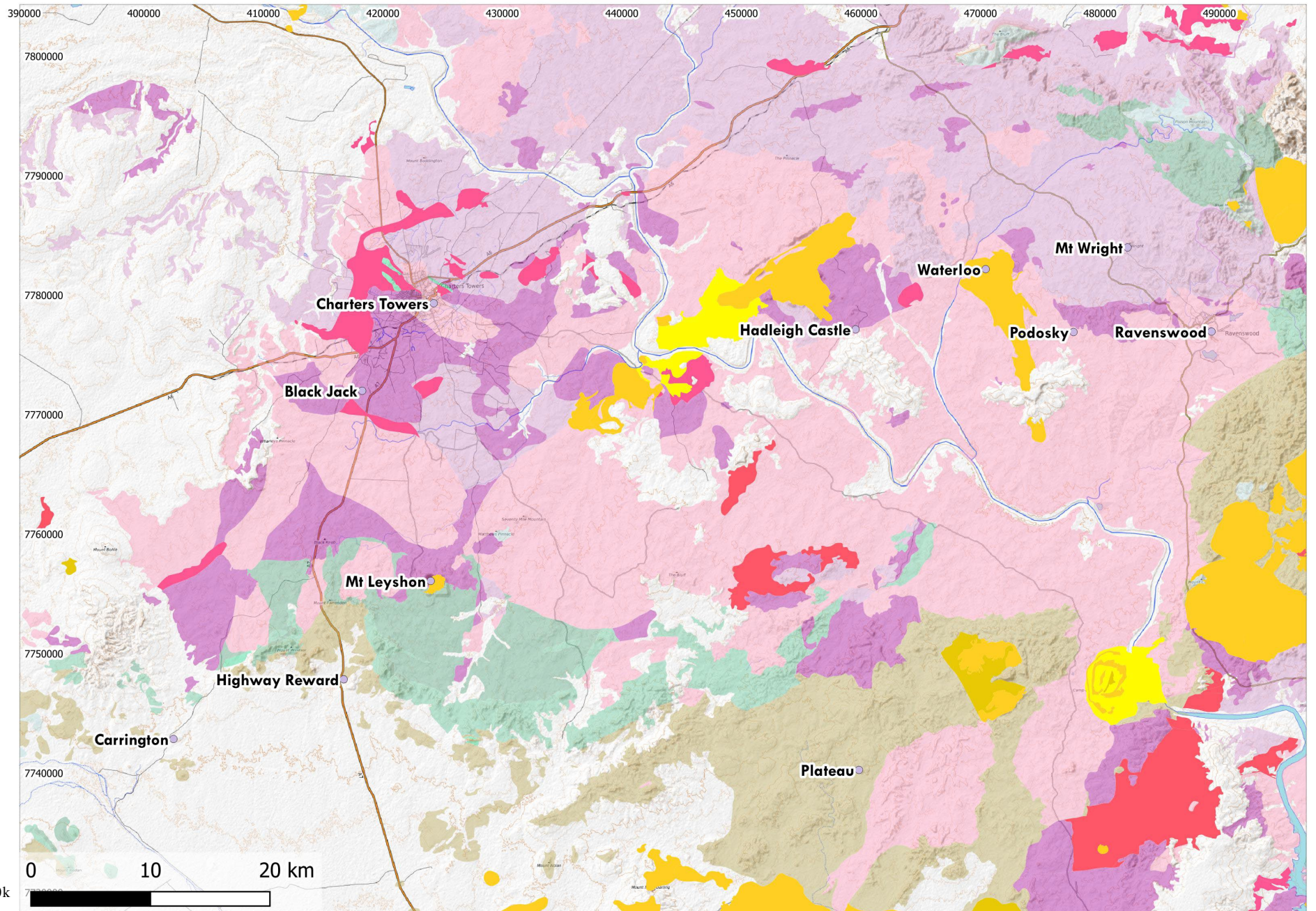




# Regional Geology

1. Late Cambrian to Early Ordovician Metamorphics, Sediments & Volcanics
2. Early to Mid Ordovician Intrusives (Macrossan Igneous Association)
3. Late Silurian to Early Devonian Intrusives (Pama Igneous Association)
4. Late Carboniferous to Early Permian (Kennedy Igneous Association)

Geological Survey of Queensland, 1:500k

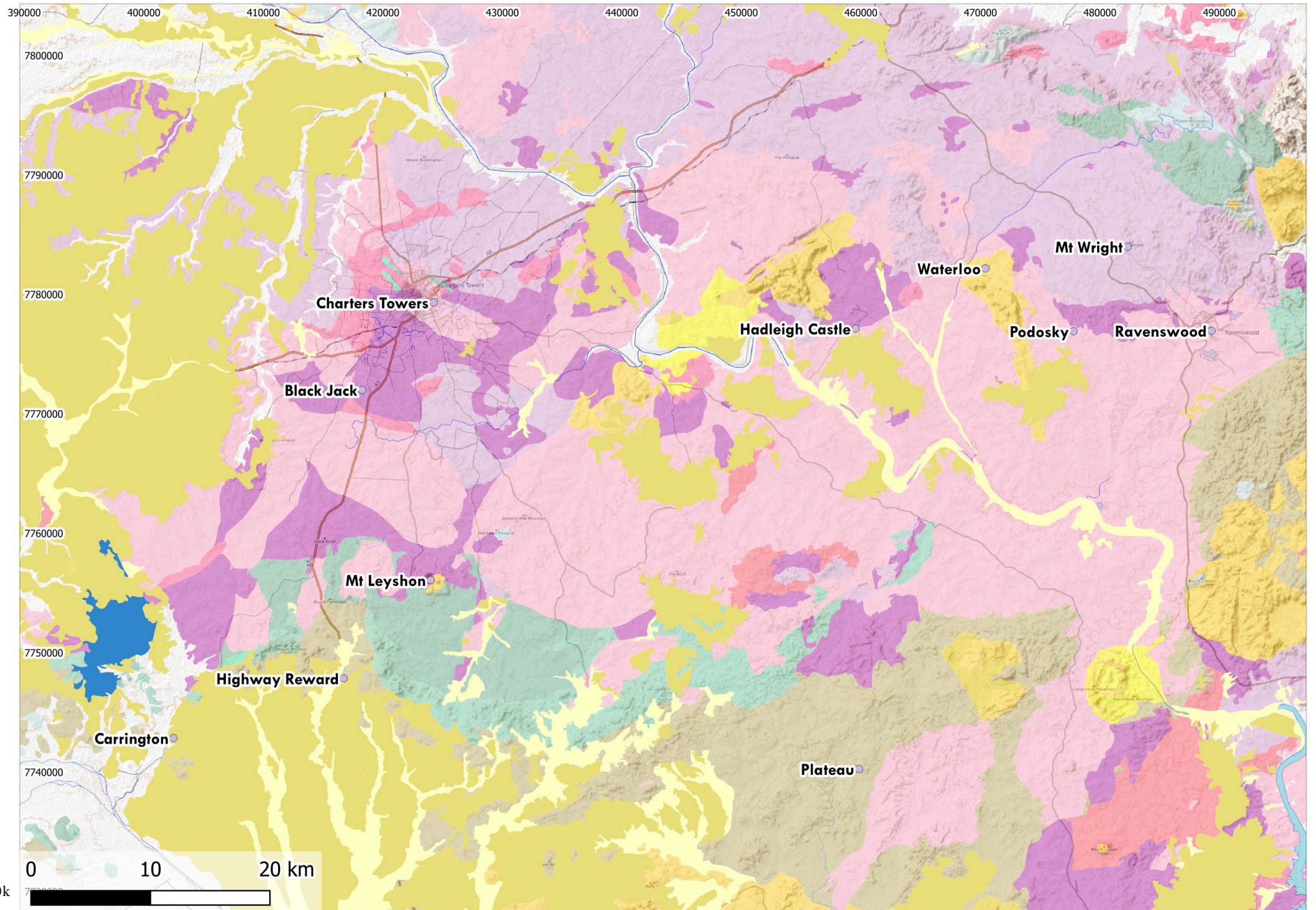




# Regional Geology

1. Late Cambrian to Early Ordovician Metamorphics, Sediments & Volcanics
2. Early to Mid Ordovician Intrusives (Macrossan Igneous Association)
3. Late Silurian to Early Devonian Intrusives (Pama Igneous Association)
4. Late Carboniferous to Early Permian (Kennedy Igneous Association)
5. Mesozoic & Cenozoic Sediments

Geological Survey of Queensland, 1:500k





# Regional Structure

D1 – NE-SW to N-S shortening

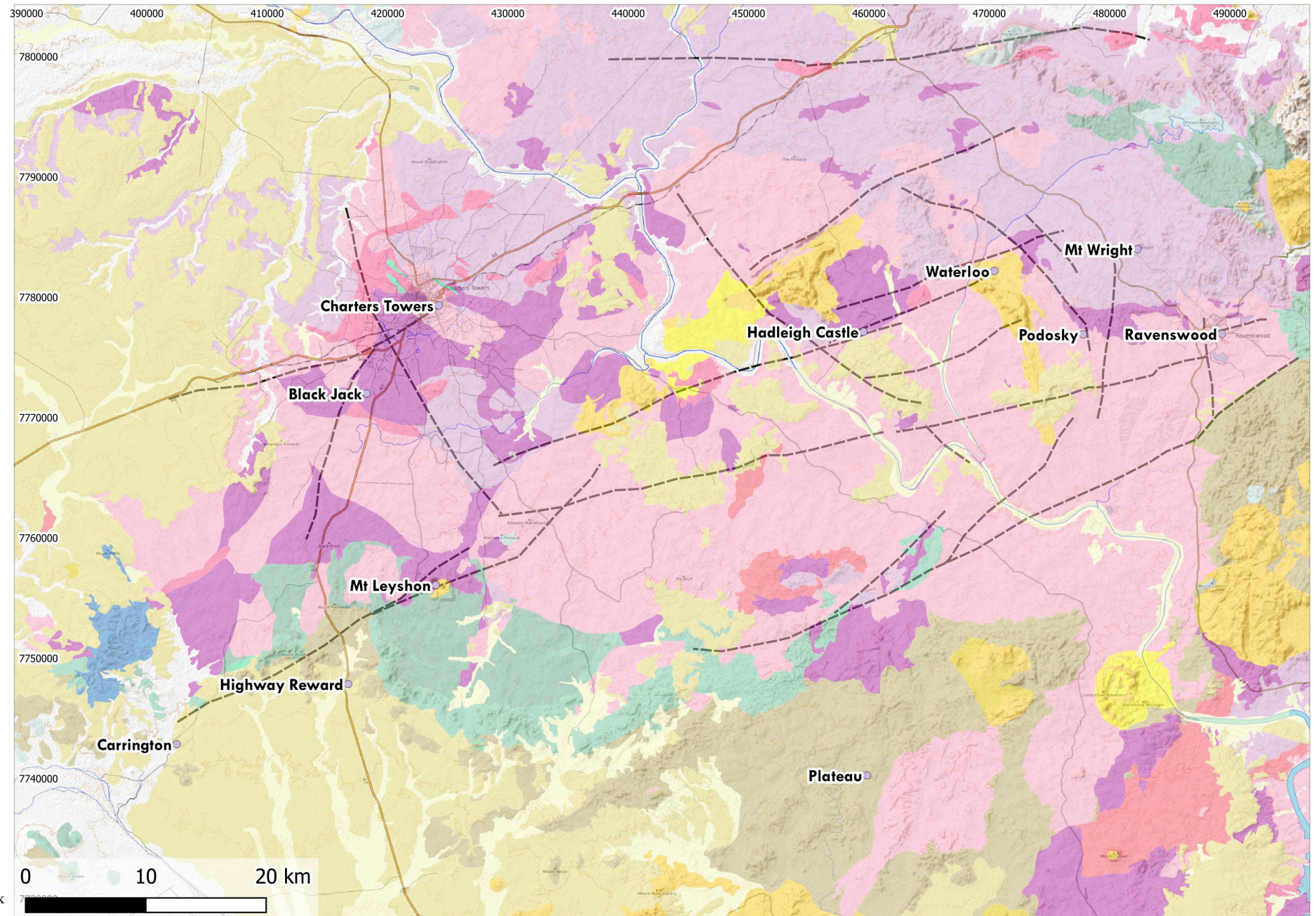
D2 – N-S shortening, Dextral NW-SE structures

D3 – Doming, N-S extension, mafics

D4 – NE-SW shortening, brittle reactivation

Mineralisation Ages:

- Silurian (CT, HC)
- Permo-Carb (RV, MW)

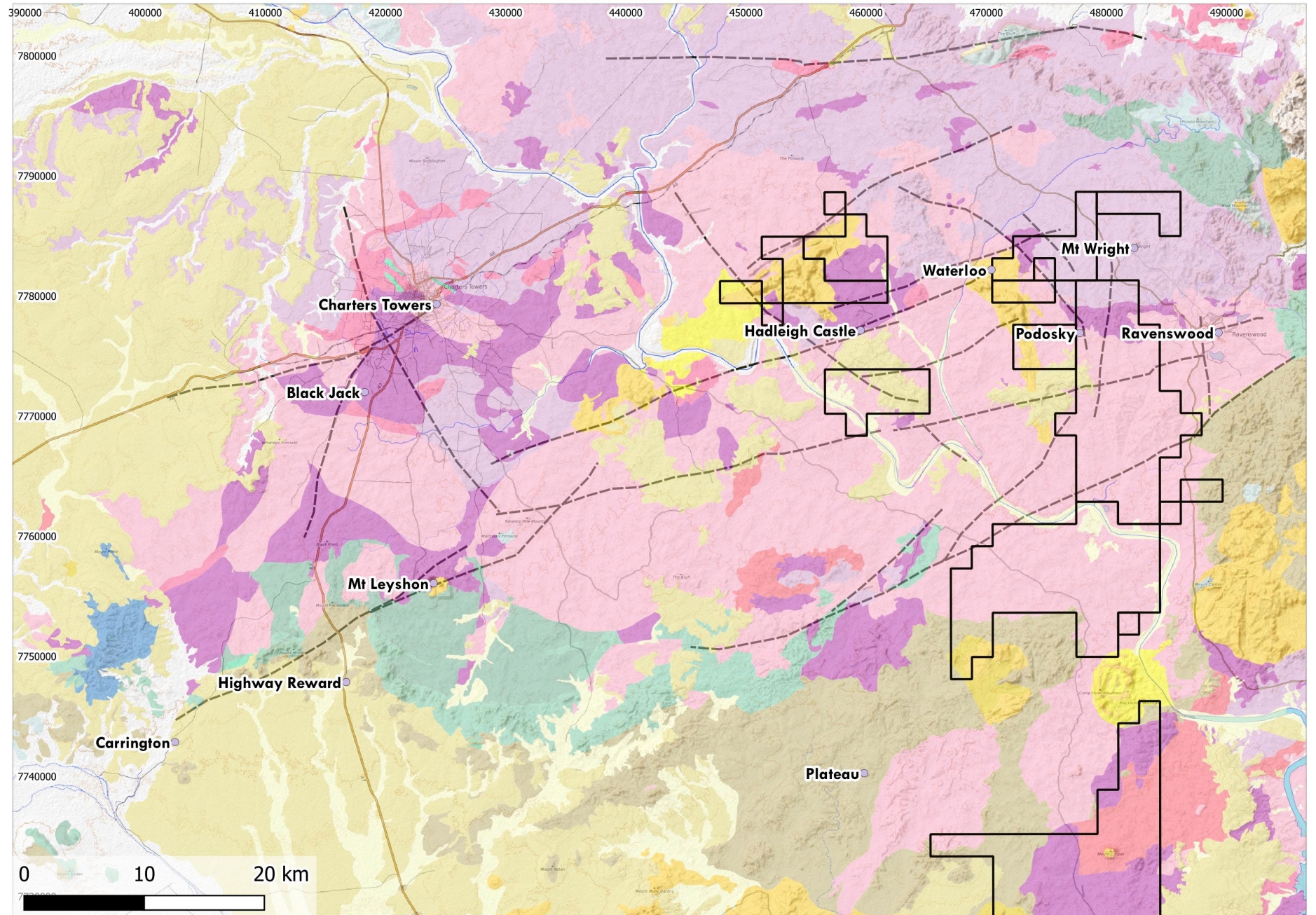




# SHN

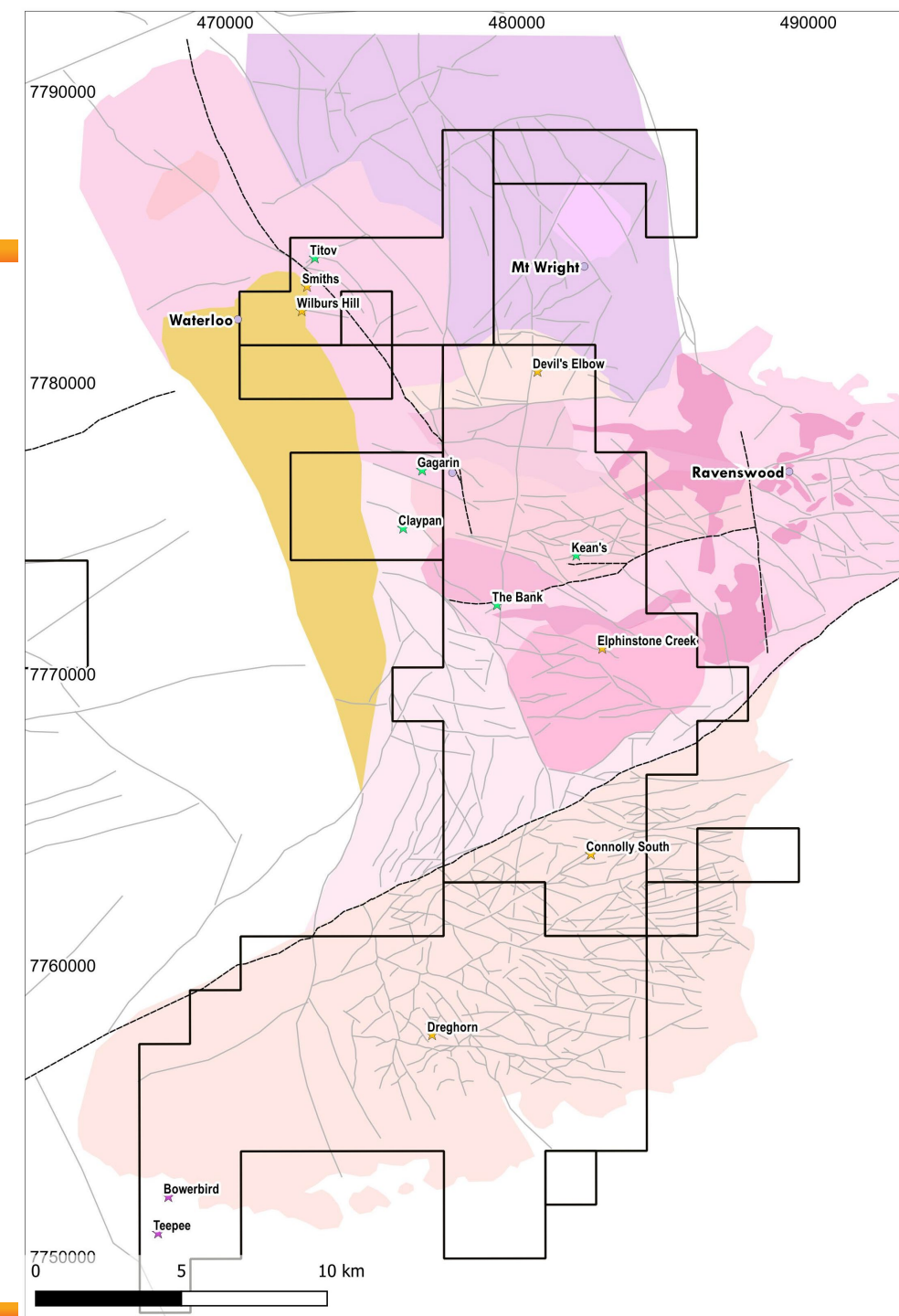
- SHN Tenure situated in eastern portion of Ravenswood Batholith
- Proximal to the Ravenswood and Mt Wright gold deposits
- Prospective for Au, Ag, Cu, Mo, REEs, Pb, Zn and more?

Geological Survey of Queensland,





# SHN Exploration

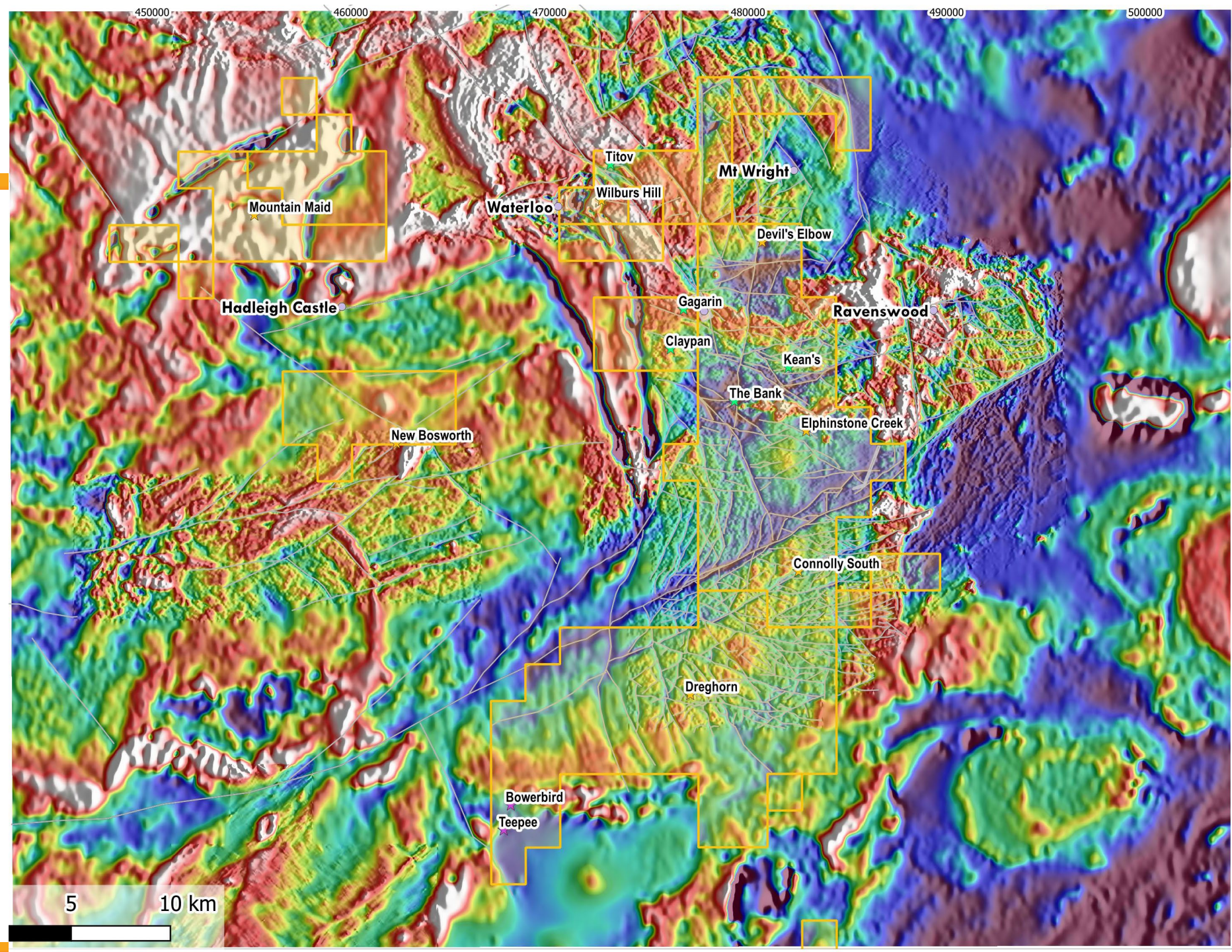




# Regional Data

Open File Magnetics  
(Reprocessed)

- High quality open-file magnetics data
- Delineation of structures & intrusives

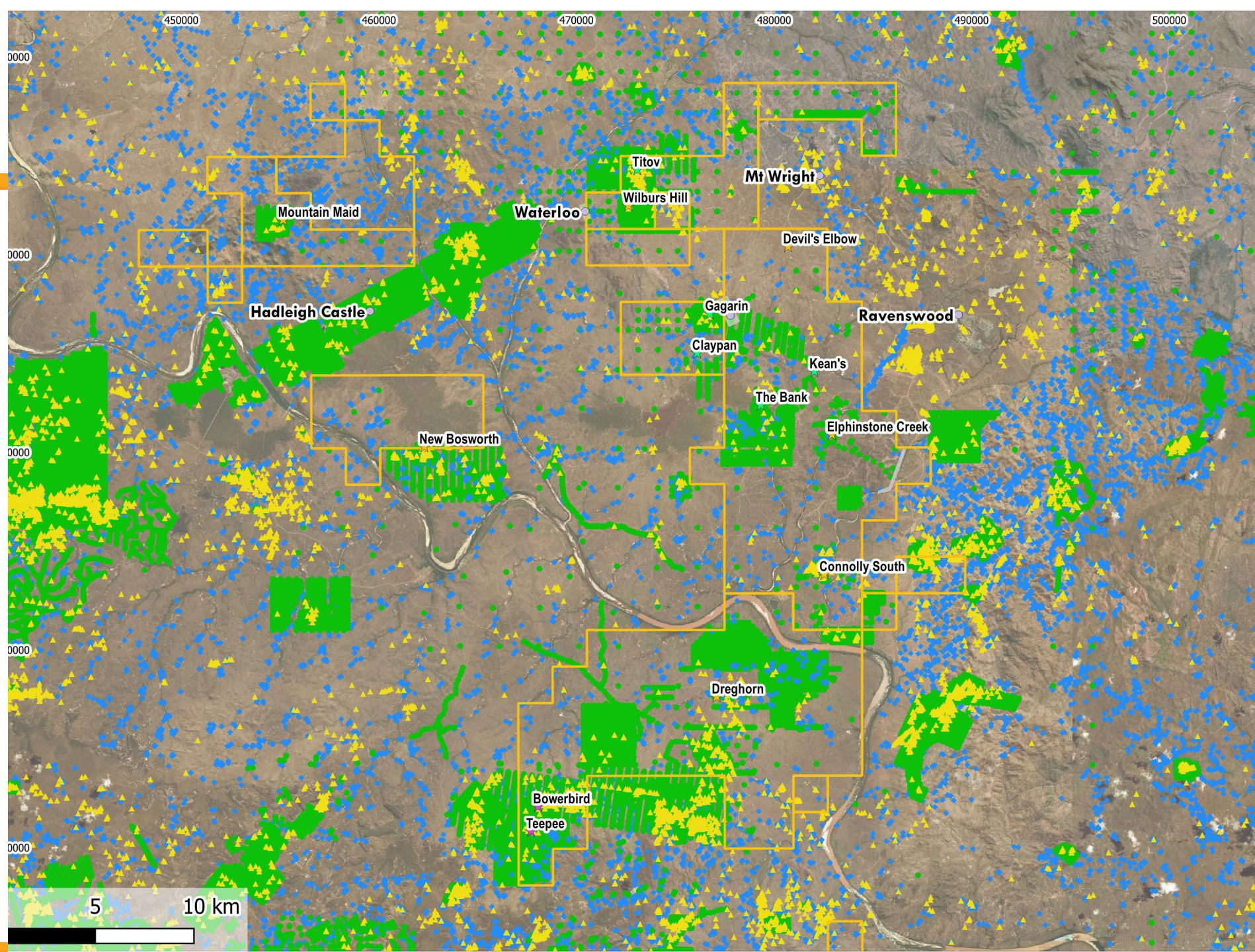




# Regional Data

Open File Geochem  
(GSQ)

- Large geochemical database (streams, soils, rocks)
- Validate data prior to use

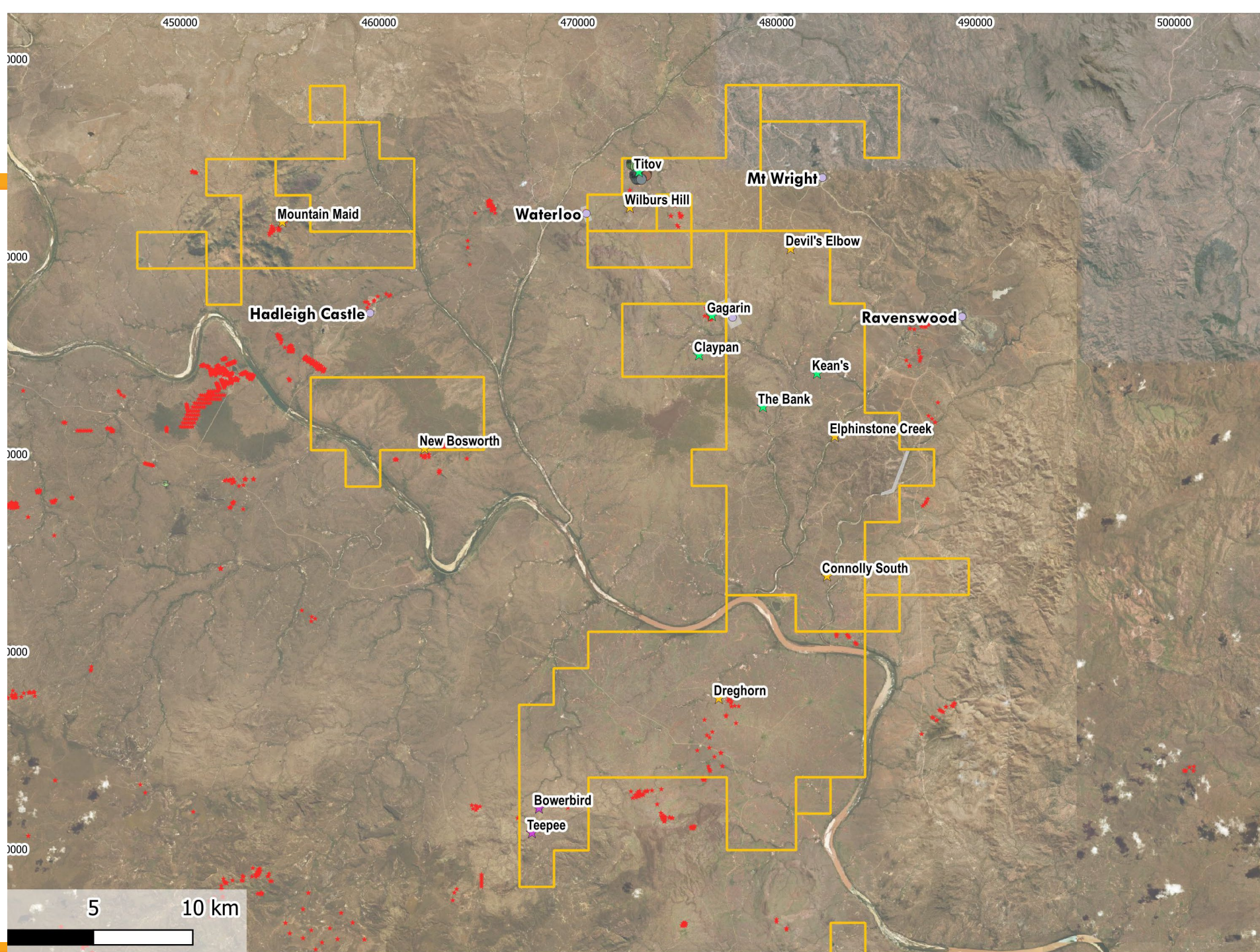




# Regional Data

## Open File Drilling (GSQ)

- Limited drilling across the batholith
- Additional holes typically in local grids or on MLs
- Highly underexplored at sub-surface (and >100m)
  - Approx one drill hole per 6km<sup>2</sup>

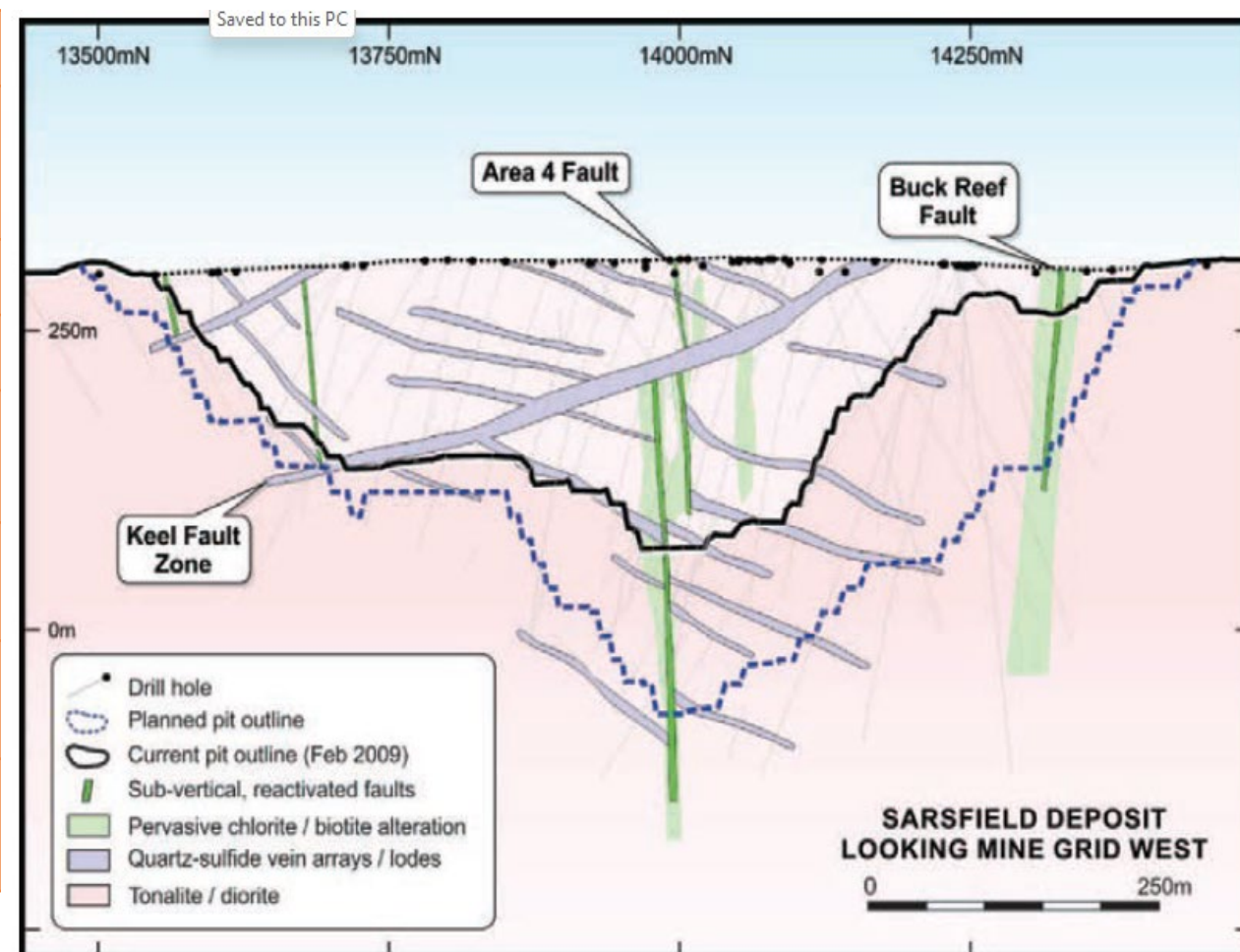




# Mesothermal Gold

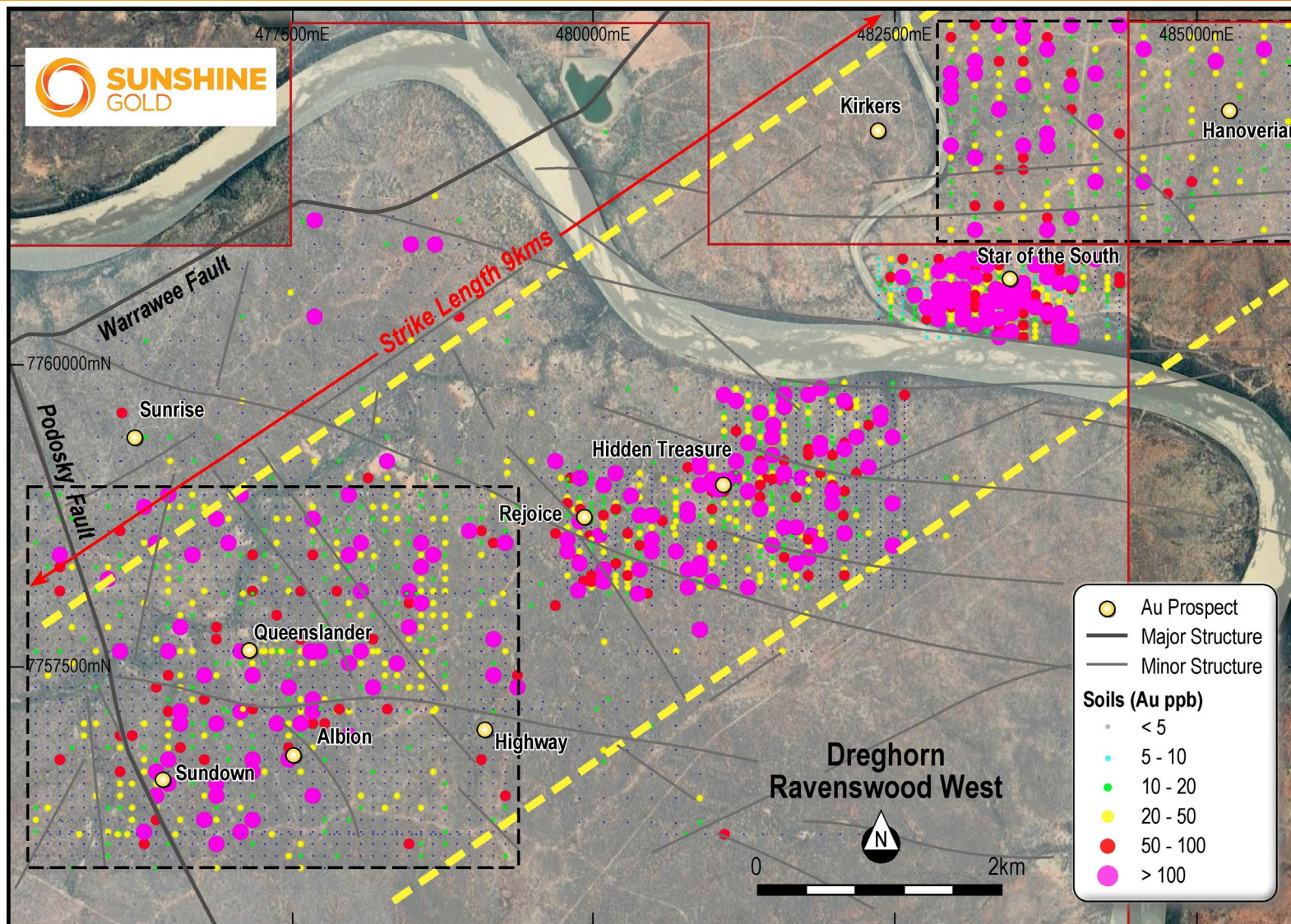
## Mesothermal

Examples	Ravenswood, Charters Towers, Hadleigh Castle
Host Rocks	I-type Granitoids
Host Rock Age	Silurian, lesser Ordovician
Mineralisation Style	Multi-stage Quartz Veins
Ore Assemblage	Au within qz+py-sp-po-cp veins
Alteration	Sericite, Chlorite, Carbonate
Exploration Methodologies	Mapping, Magnetics, Geochemistry, EM





# Mesothermal Gold - Dreghorn



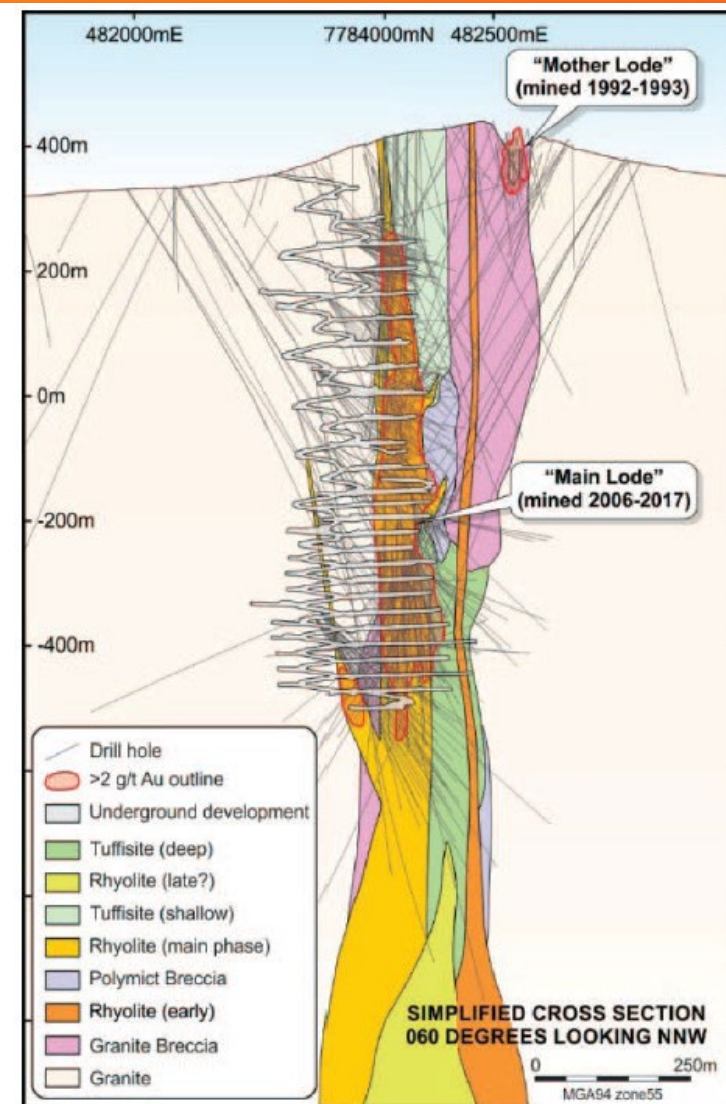
- Completed 2222 Soil Samples
  - Dreghorn
  - Dreghorn North
  - Ellen Boss
- Check mapping
- Reconnaissance drilling of 3358 metres
- Narrow, high-grade intervals, particularly on NW-trending structures





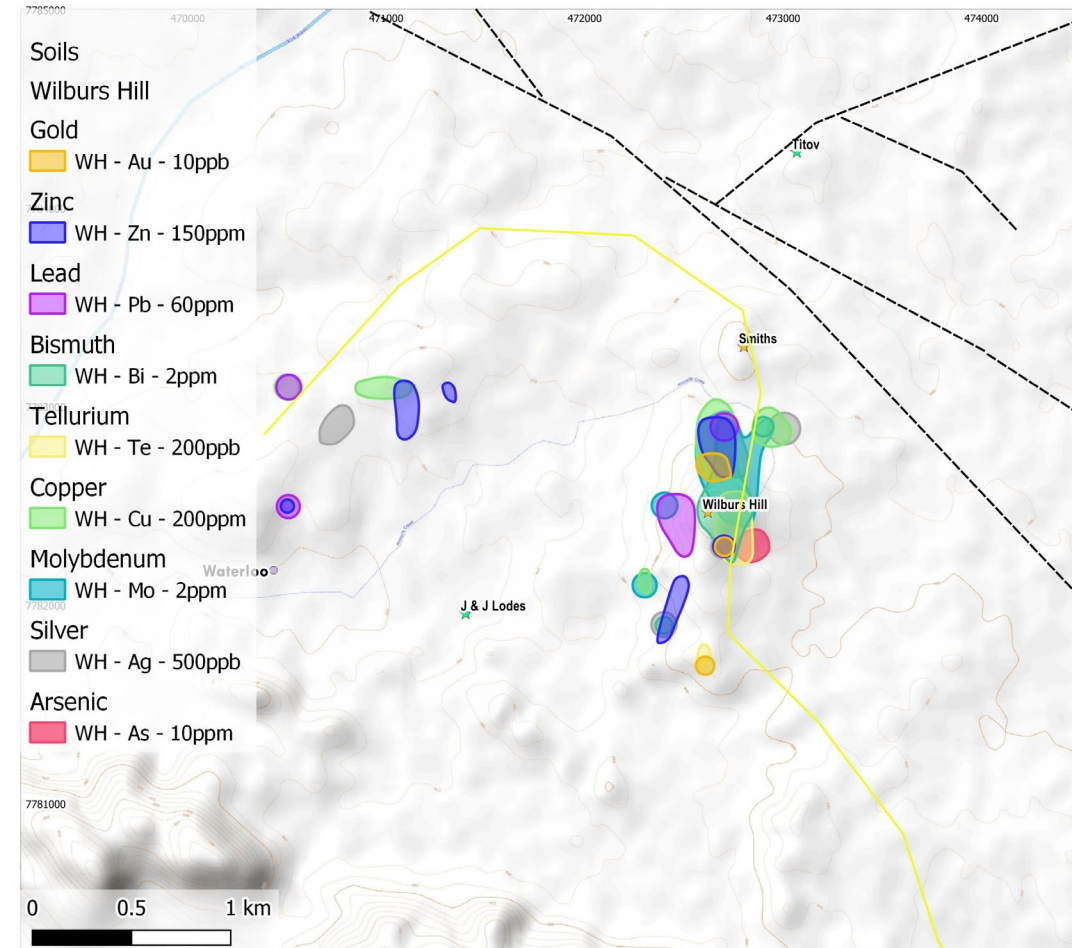
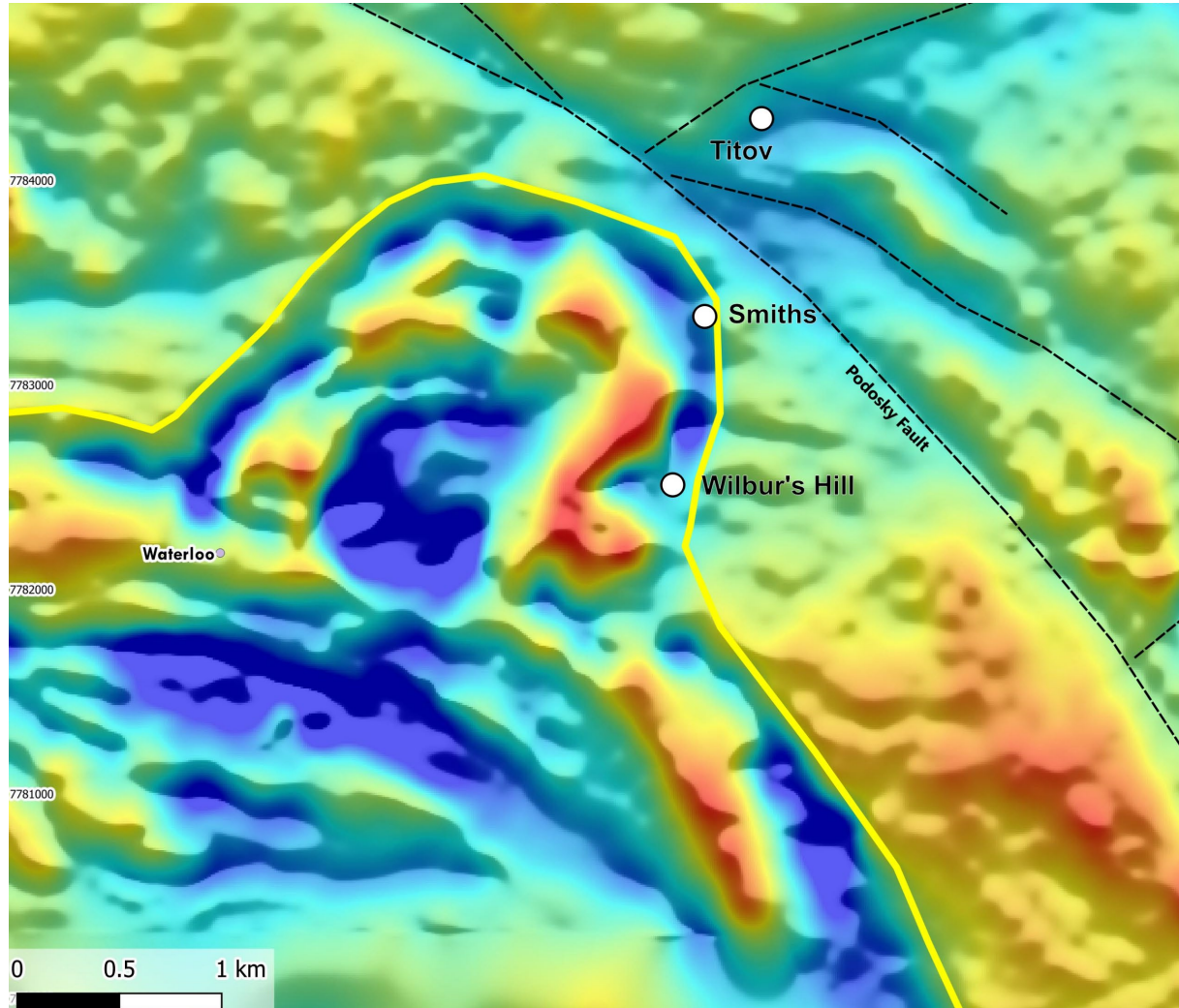
# Intrusion-Related Gold

Intrusion-Related Gold	
Examples	Mt Wright, Mt Leyshon
Host Rocks	Sub-Volcanic Rhyolite & "Tuffsite"
Host Rock Age	Carboniferous
Mineralisation Style	Fracture & Breccia hosted, Disseminated
Ore Assemblage	Marcasite-Pyrite
Metal Zoning	Vertically (BM>Py>Po)
Alteration	Muscovite-illite
Exploration Methodologies	Mapping, Geochemistry, Magnetics, IP-MT





# Intrusion-related Gold – Wilbur's Hill



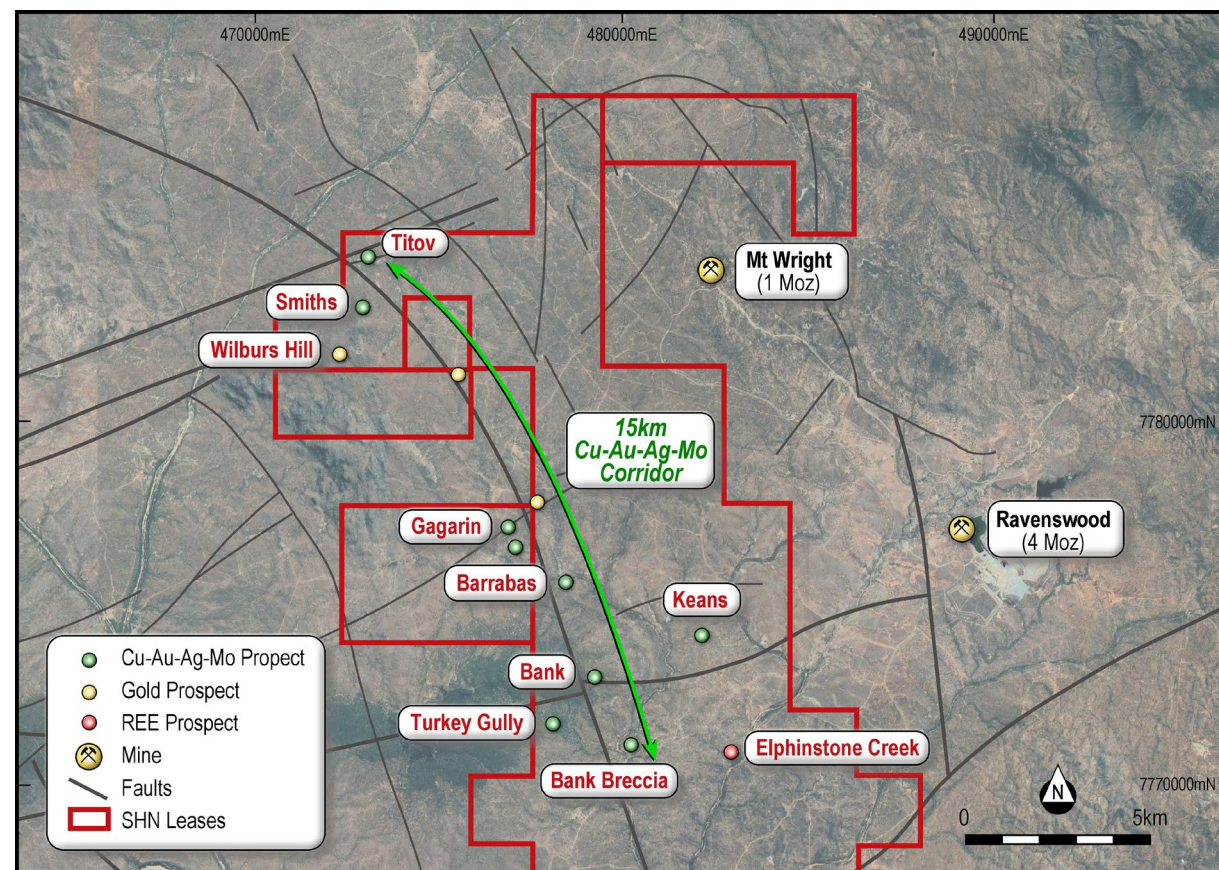


# Porphyry-related Cu-Mo-Ag-Au



## Porphyry-related Cu-Mo-Ag-Au

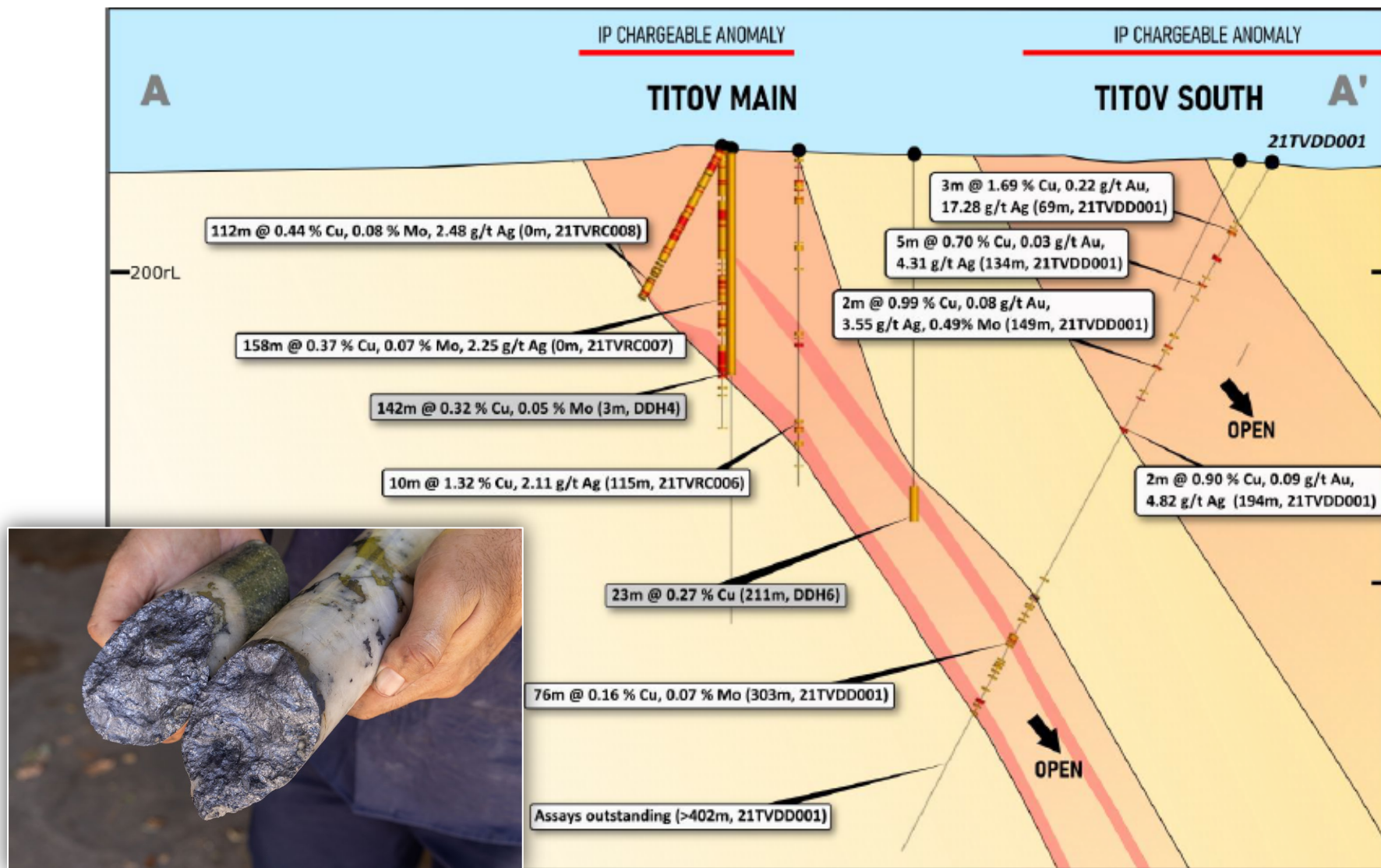
Examples	Titov, Keans, Bank
Host Rocks	Granitoids
Host Rock Age	Silurian, Ordovician?
Mineralisation Style	Disseminated, Vein-hosted
Ore Assemblage	Chalcopyrite-Molybdenite-Pyrite
Metal Zoning	Unknown
Alteration	Red Rock, K-Feldspar, Sericite, Chlorite
Exploration Methodologies	Mapping, Geochemistry, Magnetics, IP





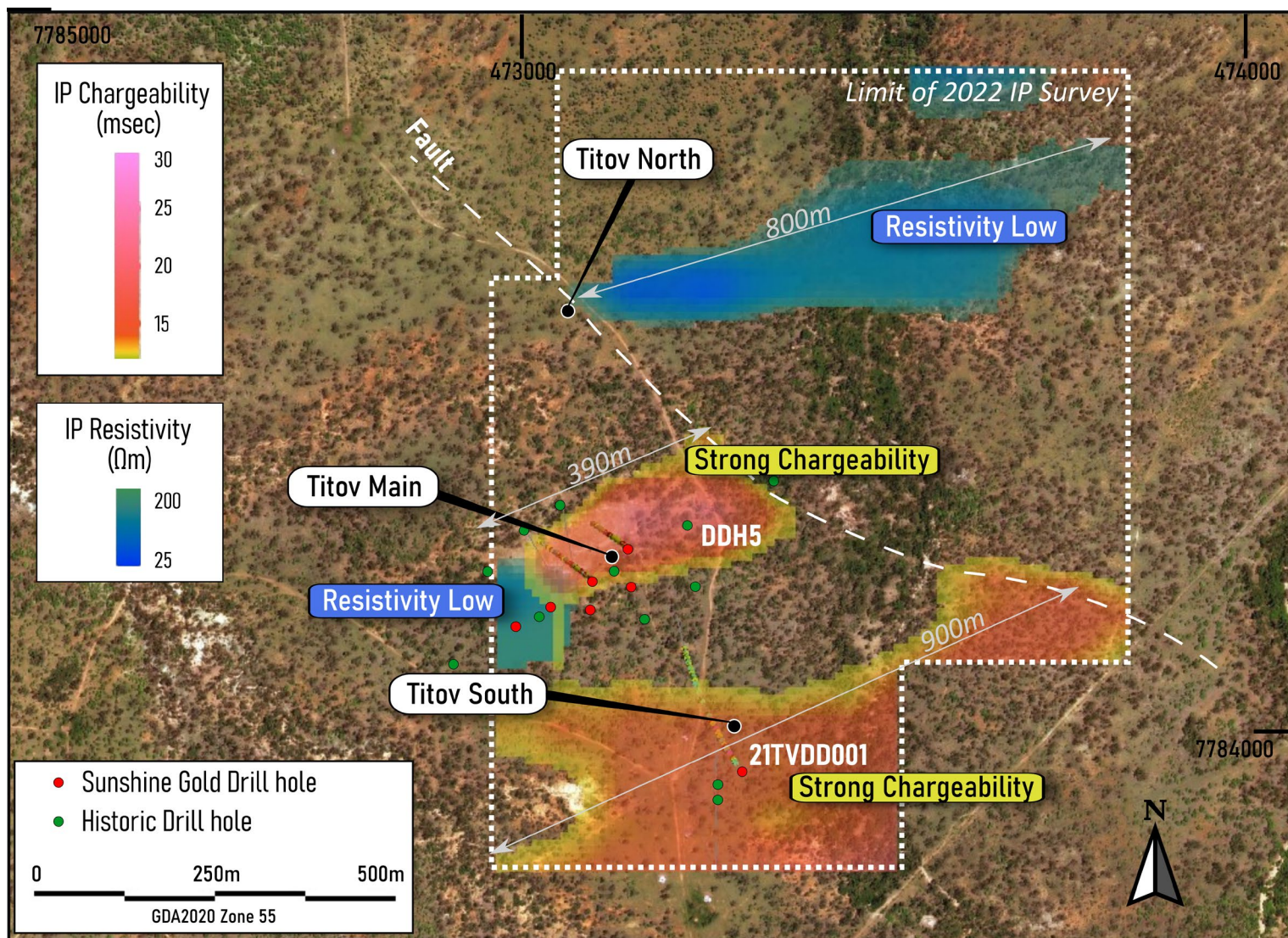
# Porphyry – Titov

- Drill tested by SHN in late 2021
- Eight RC holes completed for 1550m
- One diamond core hole for 501.5m
- Preliminary metallurgical test work completed
- Best reported intersection of 66m @ 2.10% CuEq (21TVRC004)





# Porphyry – Titov



- Future Activities include:
  - Extend IP survey
  - Drill test Eastern extension, Titov South and Titov North
  - Geochemical review to further understand alteration and mineralisation assemblages

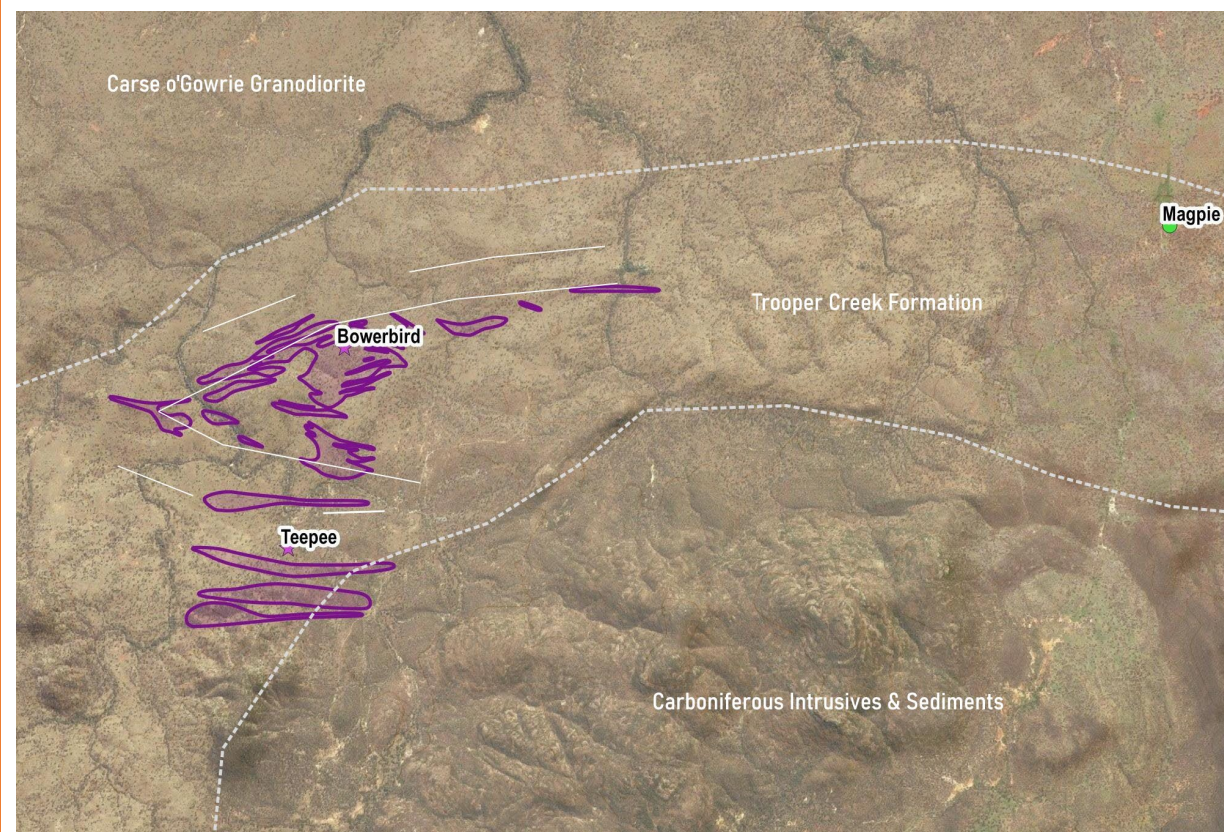




# VHMS – Base Metals

## Porphyry-related Cu-Mo-Ag-Au

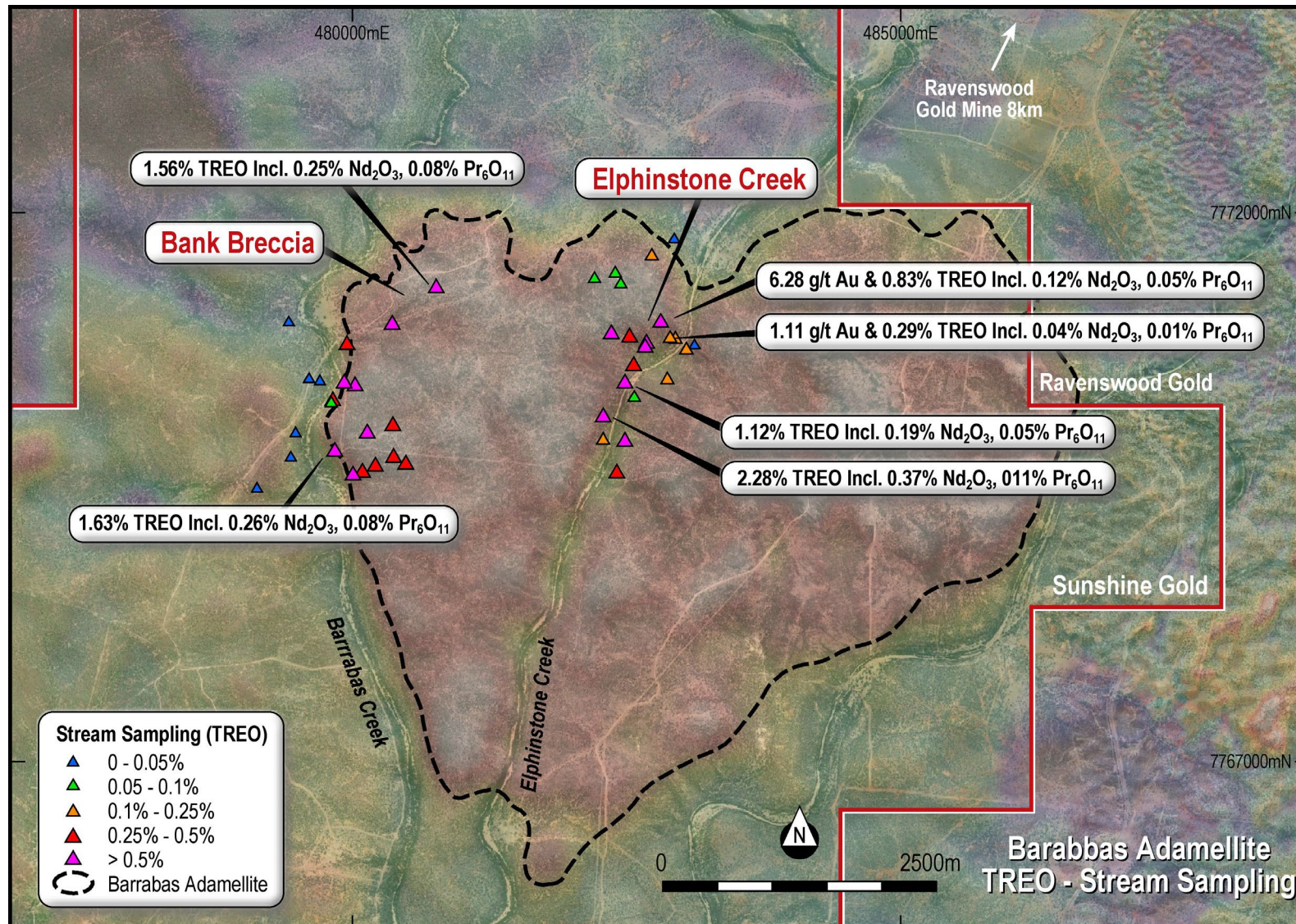
Examples	Magpie, Highway Reward
Host Rocks	Seventy Mile Range Group
Host Rock Age	Late Cambrian – Early Ordovician
Mineralisation Style	Massive Sulphides
Ore Assemblage	Pyrite-Chalcopyrite
Metal Zoning	Vertical Oxidation to Fresh; Pb-Zn-Ba halo (HR)
Alteration	Qz-Se-Py-Cl
Exploration Methodologies	Mapping, Geochemistry, RAB, EM



50ppm Pb in soil contours

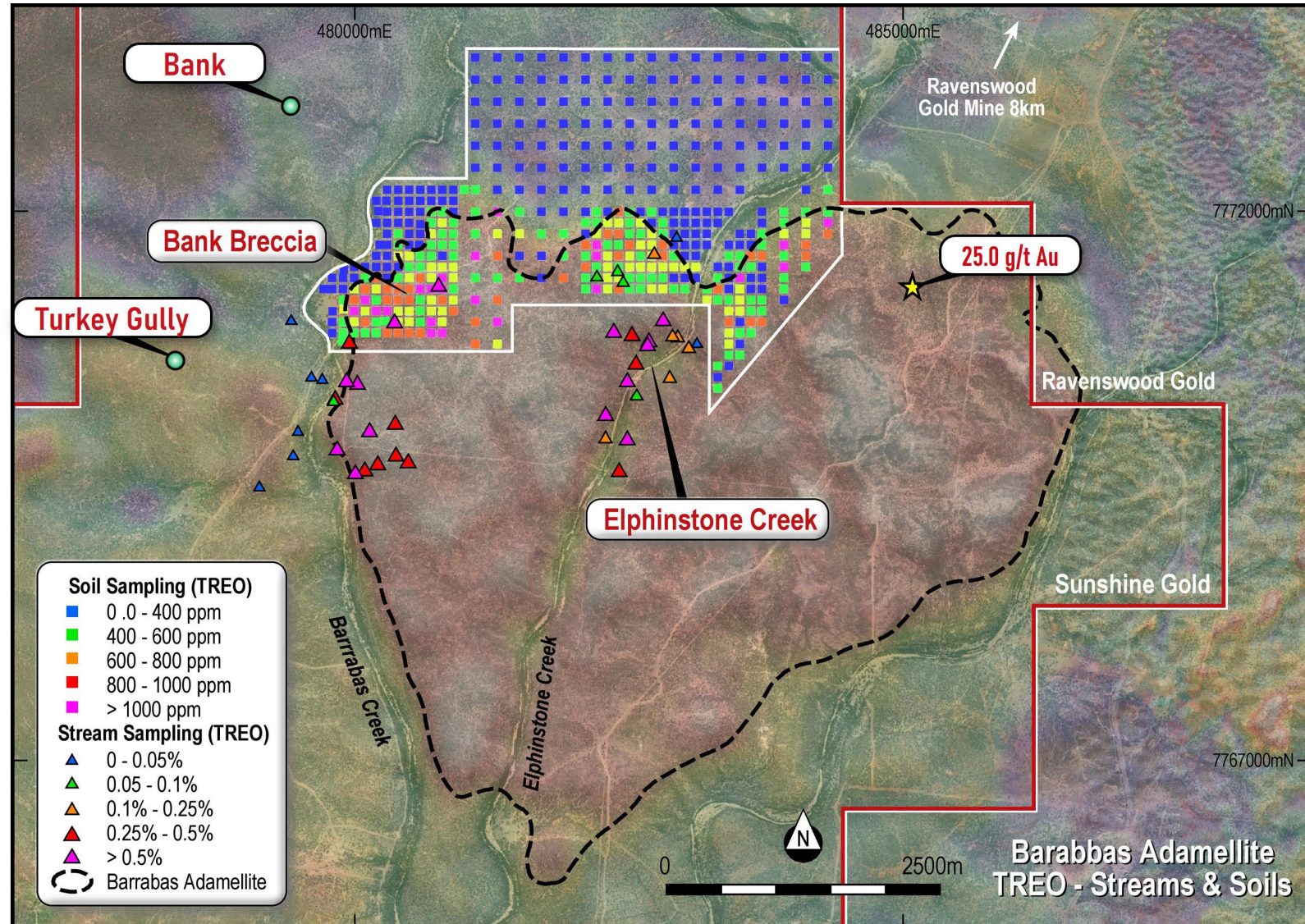


# Elphinstone Creek – Au, REEs





# Elphinstone Creek – Au, REEs





# Exploration in Ravenswood

- Sunshine Gold is actively exploring the Ravenswood Batholith
- Underexplored for a well-known and well-endowed region
- Use Open-File Exploration Datasets
- Model driven area – but think outside the box
- Assess for “21<sup>st</sup> Century” commodities





# References

- Beams, et.al., 2017, Polymetallic massive sulphide deposits of the Mount Windsor Subprovince
- Fergusson, et.al., 2015, Early Palaeozoic continental growth in the Tasmanides of northeast Gondwana and its implications for Rodinia assembly and rifting
- Kreuzer, 2005, Intrusion-Hosted Mineralization in the Charters Towers Goldfield, North Queensland: New Isotopic and Fluid Inclusion Constraints on the Timing and Origin of the Auriferous Veins
- Lisowiec & Morrison, 2017, Ravenswood and Mt Wright gold deposits
- Webb & James, 2001, The Application of Electrical Geophysics to Gold Exploration at Mt Wright, North Queensland,





Thank You

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