

# Camooweal 2D Seismic Survey

Sally Edwards

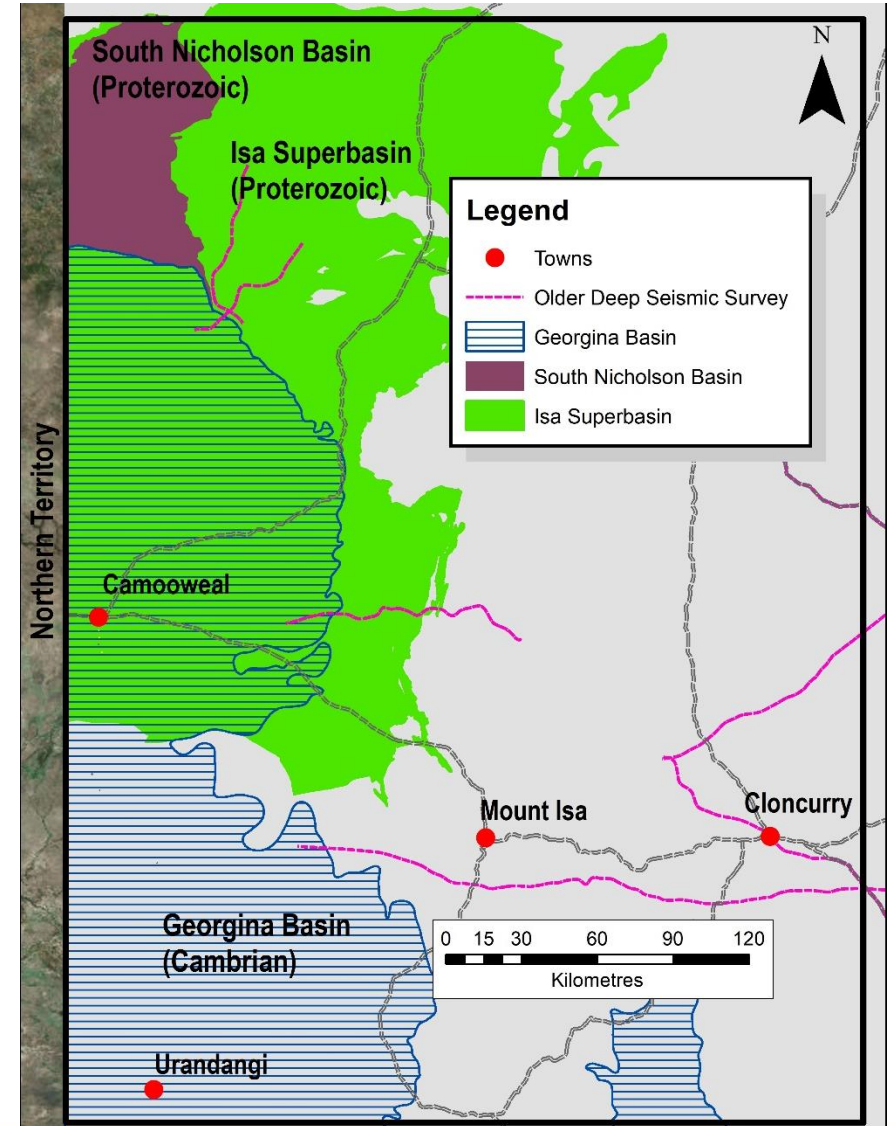
Geological Survey of Queensland

Department of Natural Resources, Mines and Energy



Acquisition on the Barkly Tablelands

# Old rocks, new potential?



# Outline

Overview of knowledge

- Data coverage pre-2017
- What we don't know

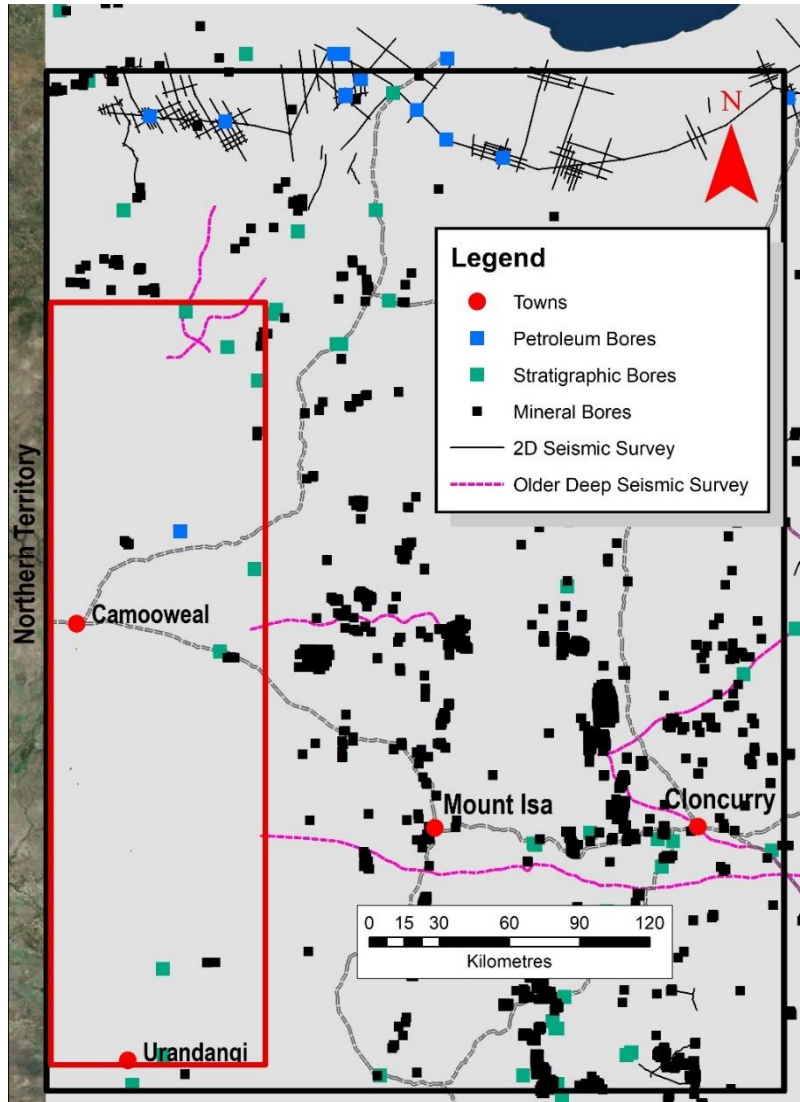
New data gathered 2017-2019

- GA's 2017 South Nicholson survey
- NWQ SEEBASE<sup>®</sup> model
- Field reconnaissance survey

Camooweal 2D Seismic Survey



# Data coverage pre-2017



Regionally good data coverage:

- Several old regional seismic lines (pre-2006)
- Large area we know little about

Red Box Area - sparse data

- 3 stratigraphic holes (~60m deep)
- 12 mineral holes (~600m deep)
- 1 petroleum well (~1000m deep)

# What we don't know

Geological uncertainty around:

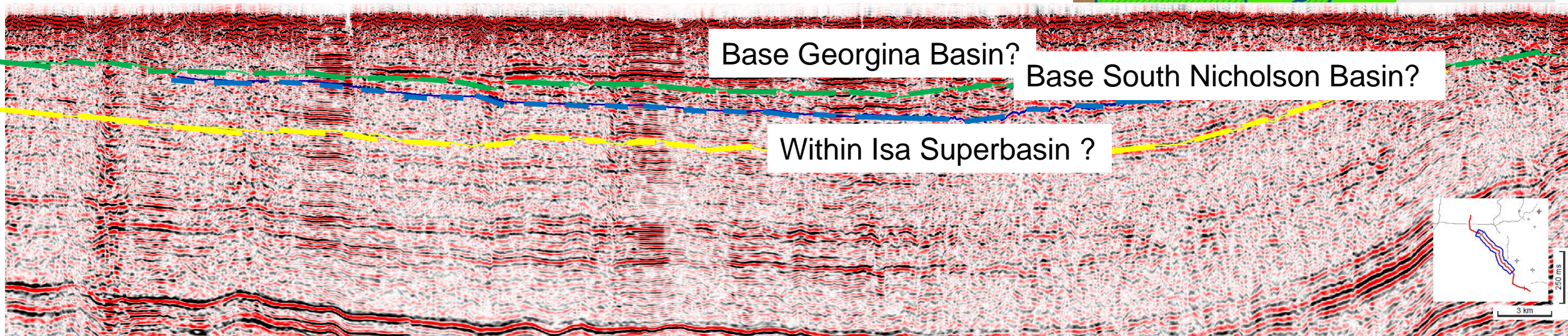
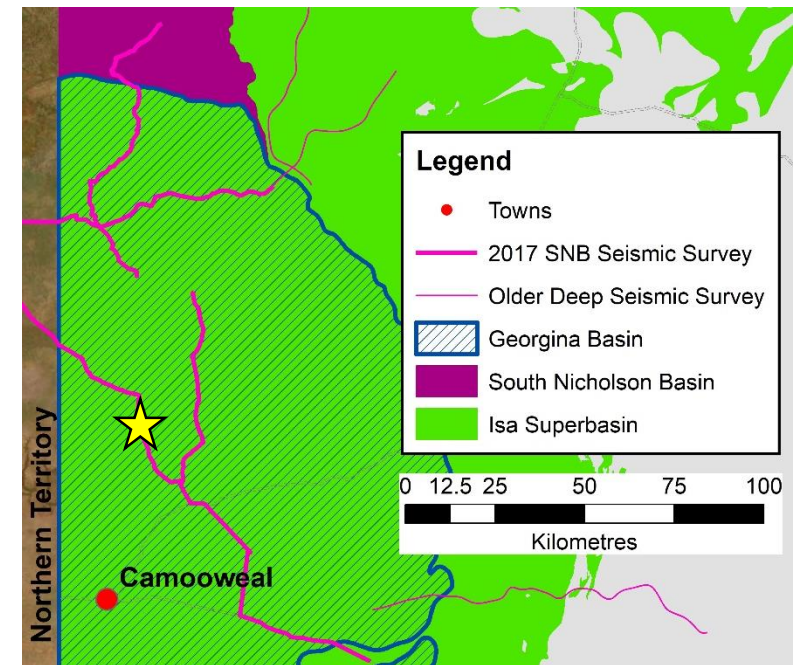
- Extent of aquifers in Georgina Basin
- Thickness of the sedimentary succession below Georgina Basin
- Extent of South Nicholson Basin (Littles Range Fault?)
- Extent of Isa Superbasin
- What's below the Isa Superbasin



# Recent gathered data

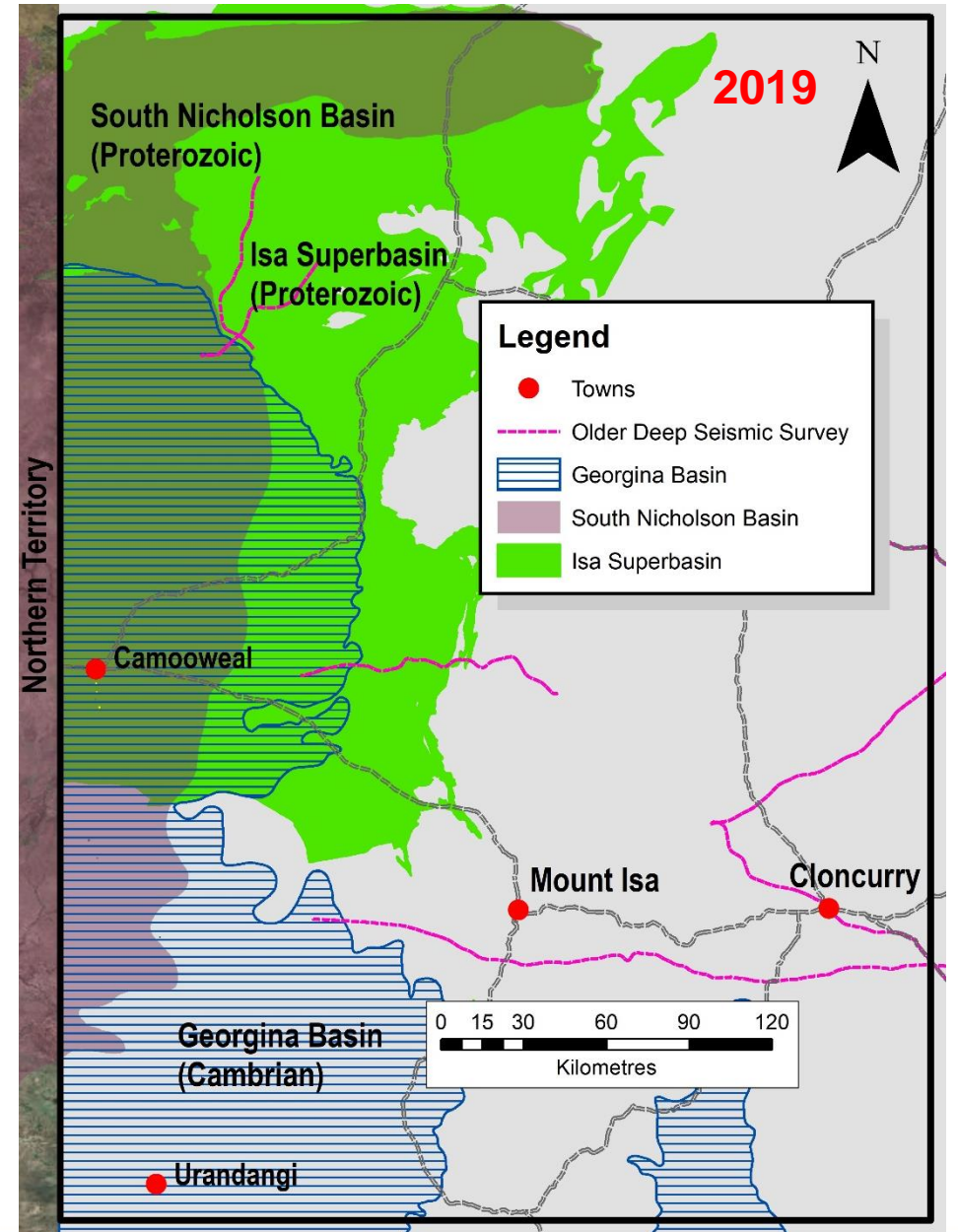
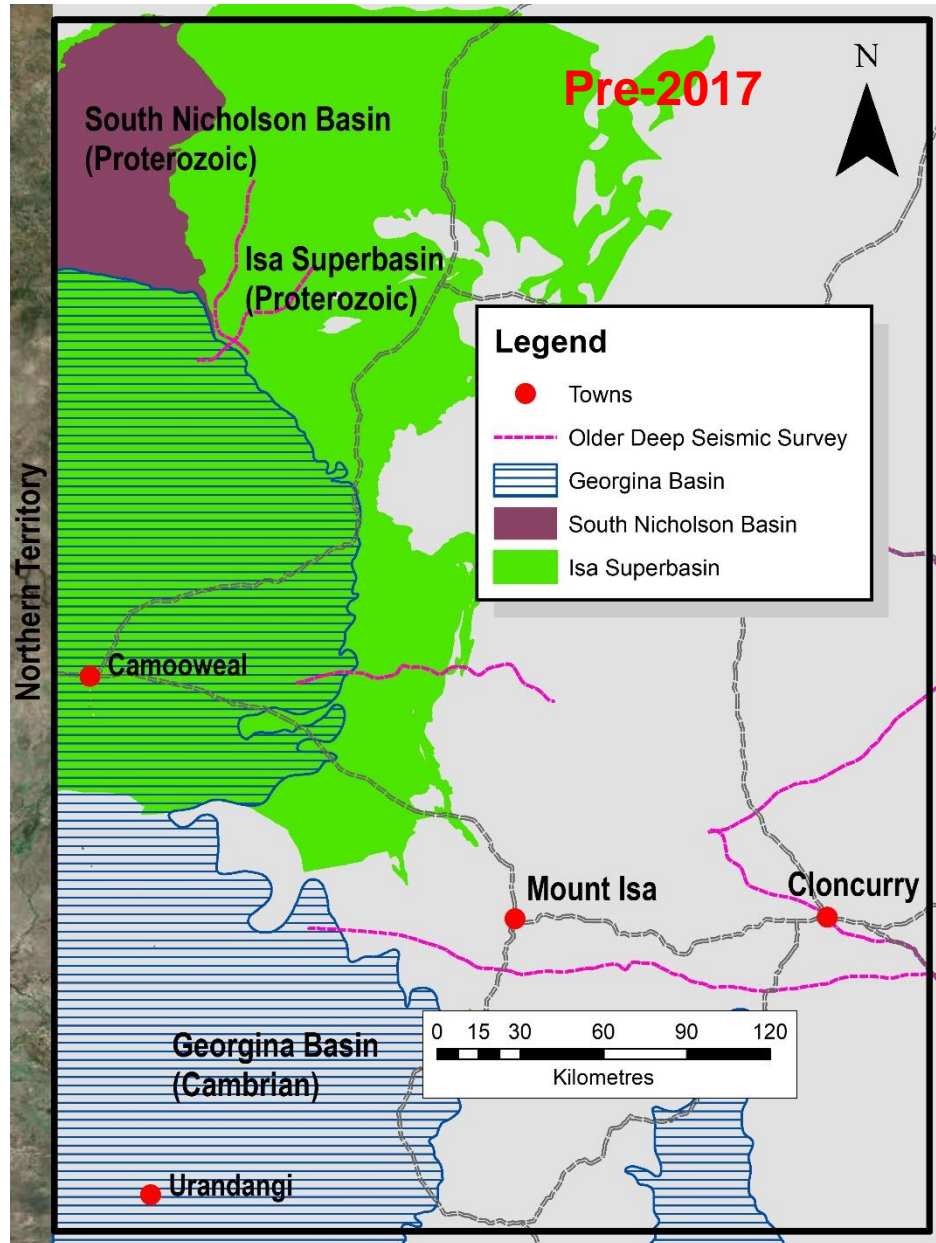
2017 South Nicholson Basin Seismic Survey

(star denotes where the Camooweal survey ties into the South Nicholson Basin survey)

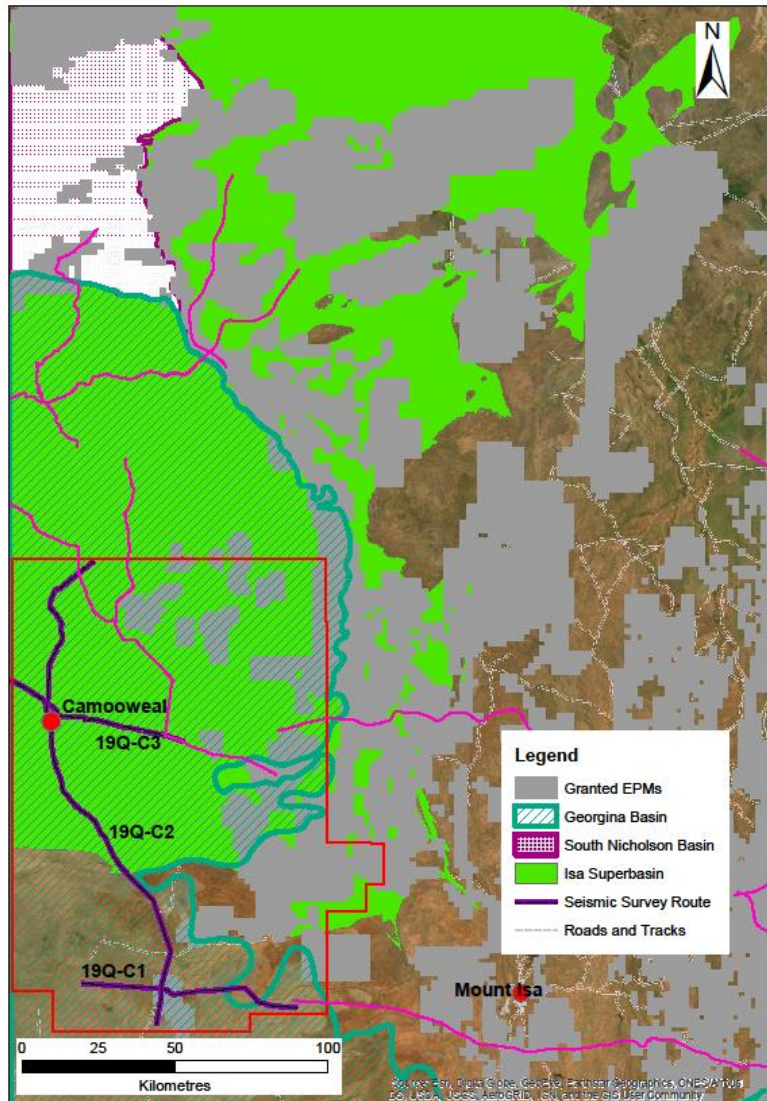


17GA-SN2



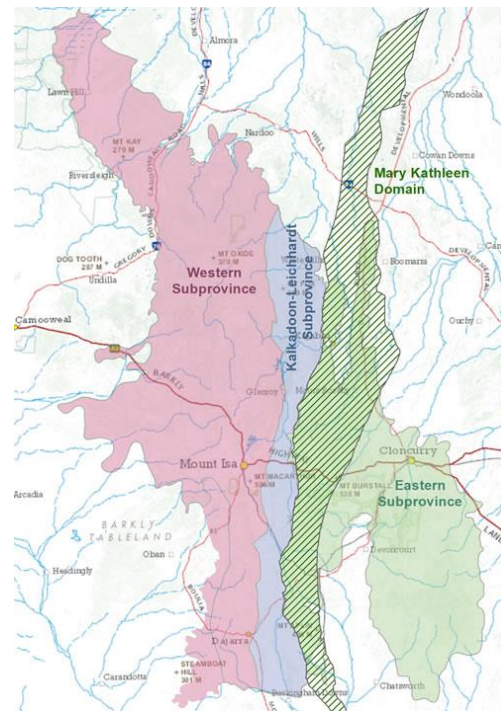


# Mineral Exploration



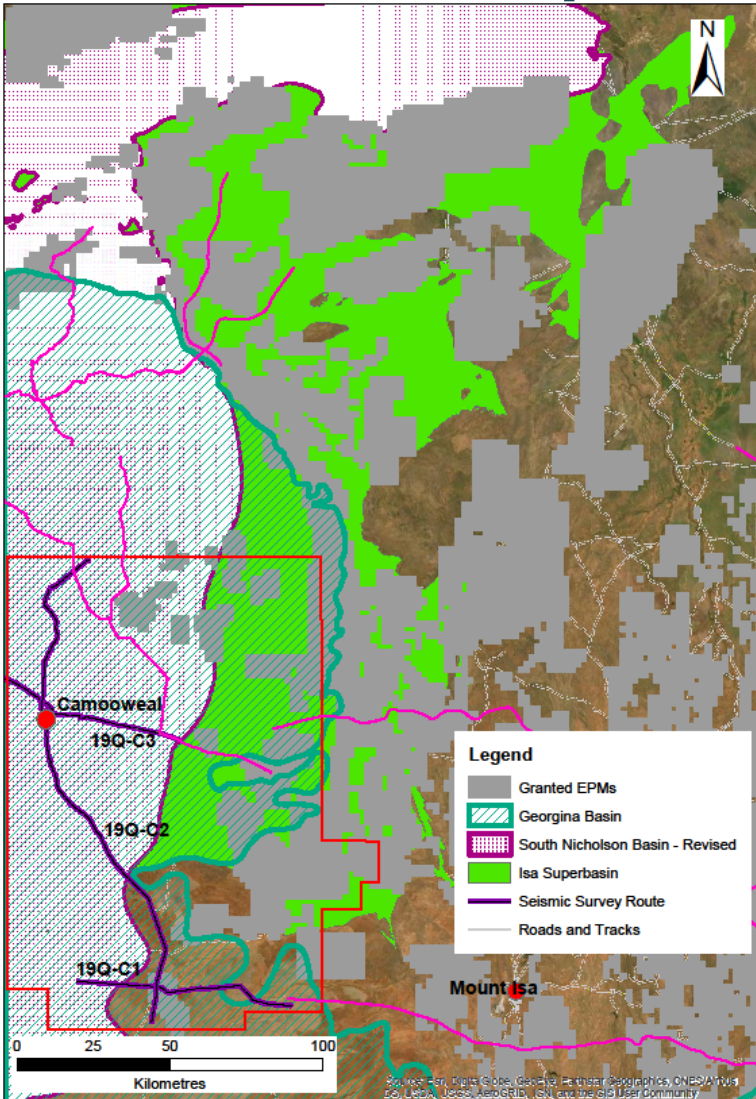
Permit coverage:

- Abundant coverage of Georgina Basin margin region by EPMs
- Limited elsewhere





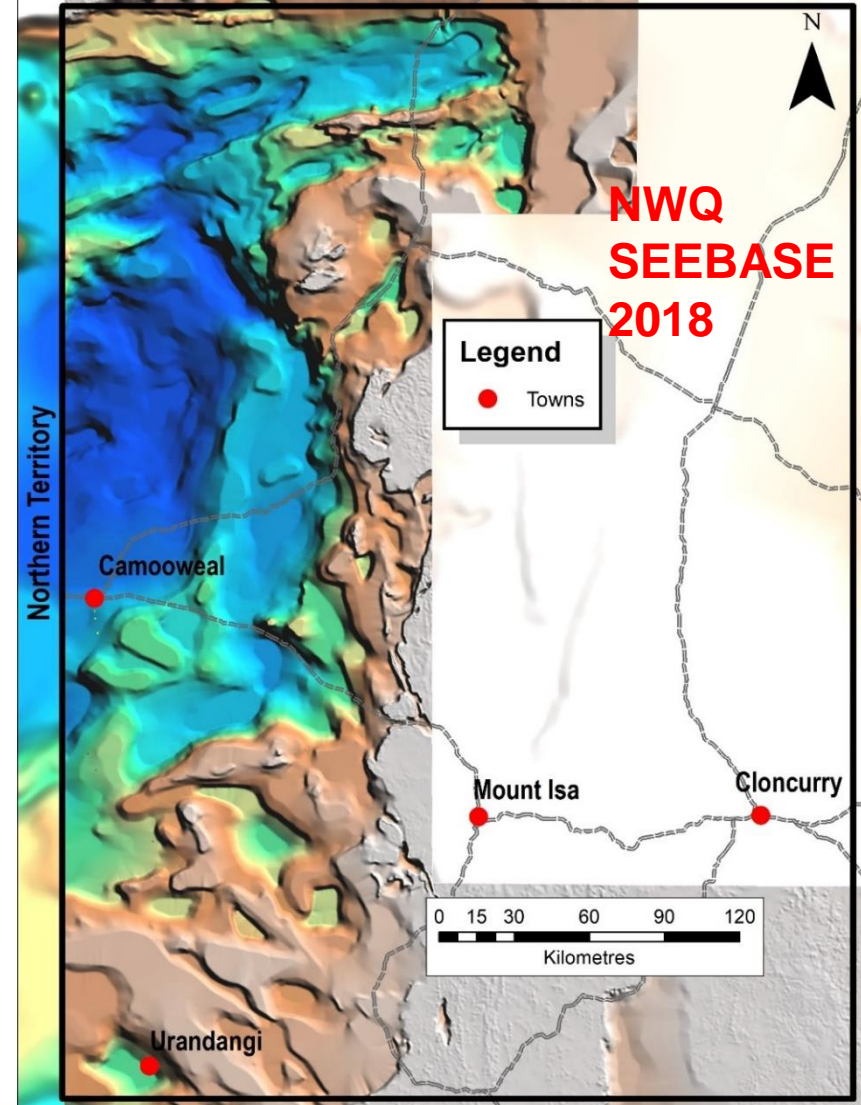
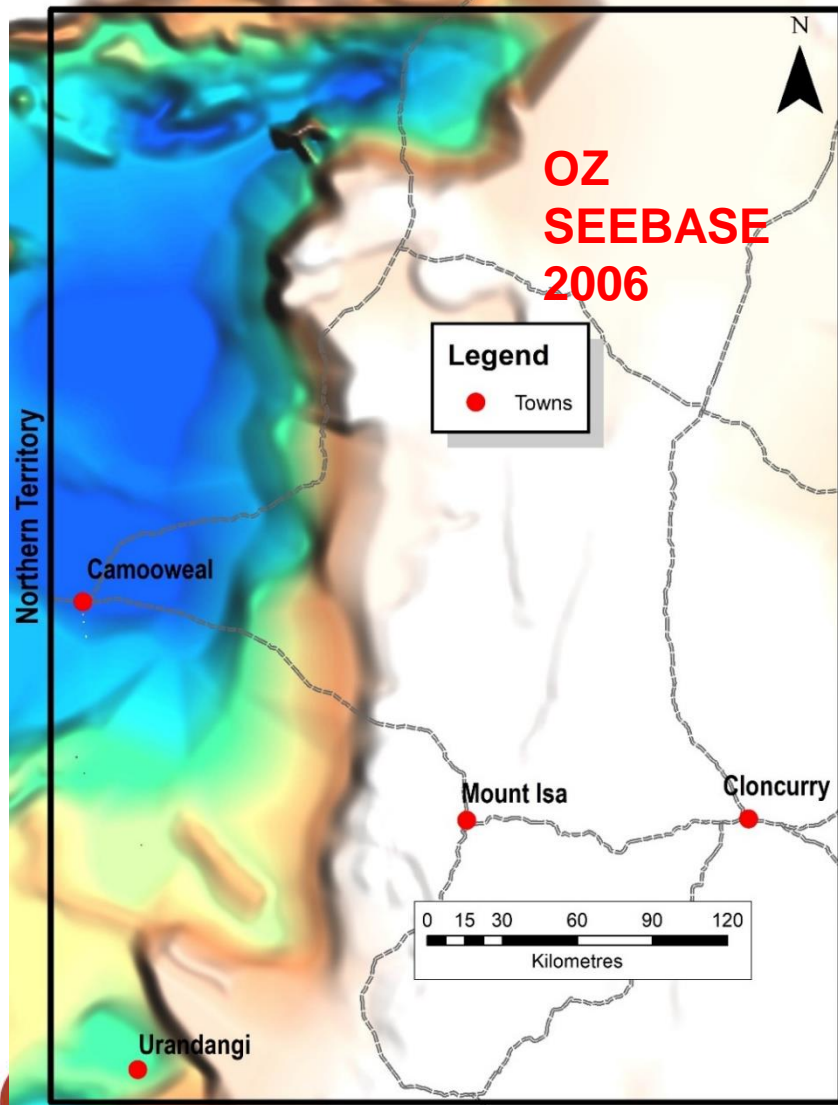
# Mineral Exploration



Permit coverage:

- Abundant coverage of Georgina Basin margin region by EPMs
- Limited elsewhere
- Revised extent of South Nicholson Basin - south of Little's Range Fault
  - New opportunities???

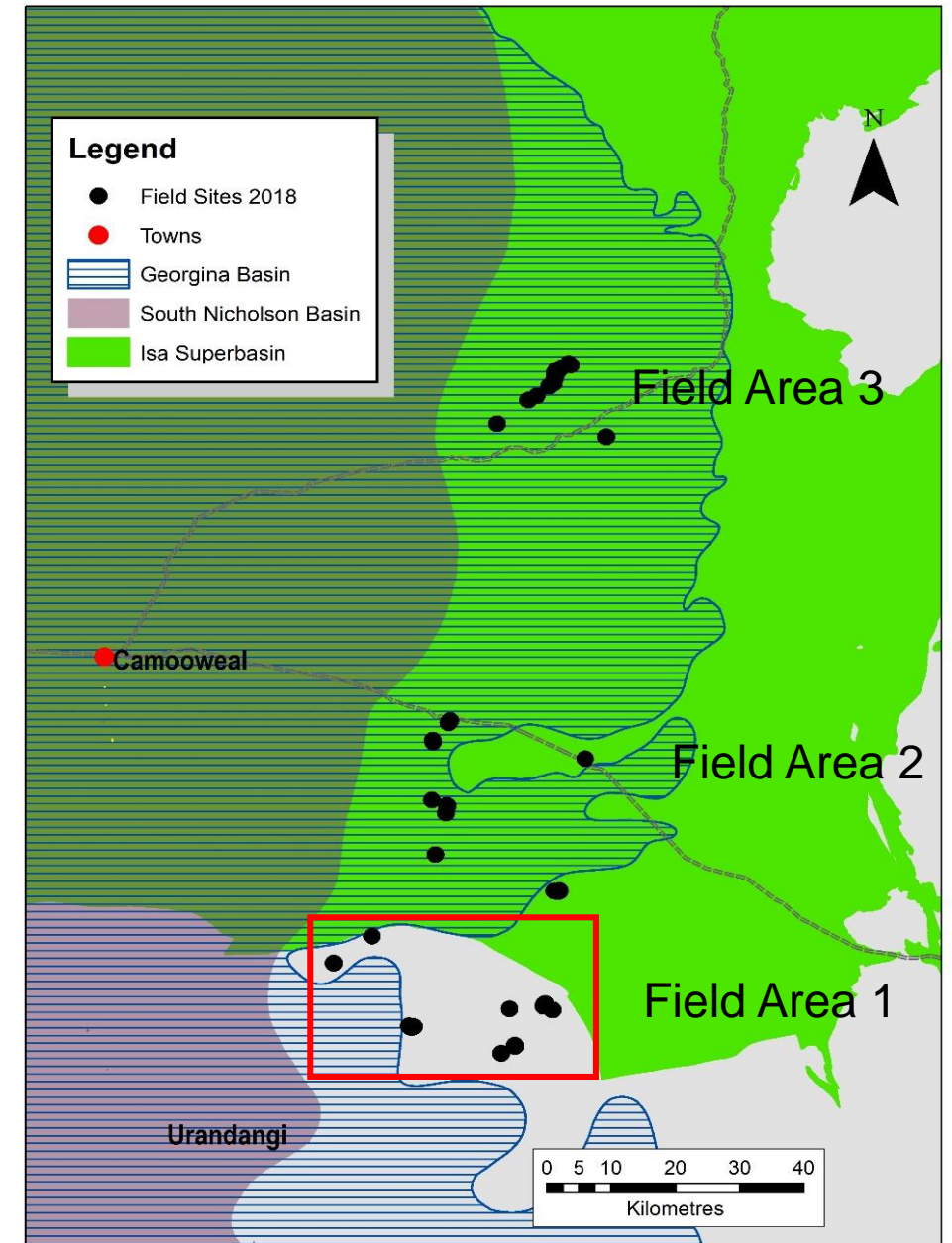
# SEEBASE<sup>®</sup> - basement model



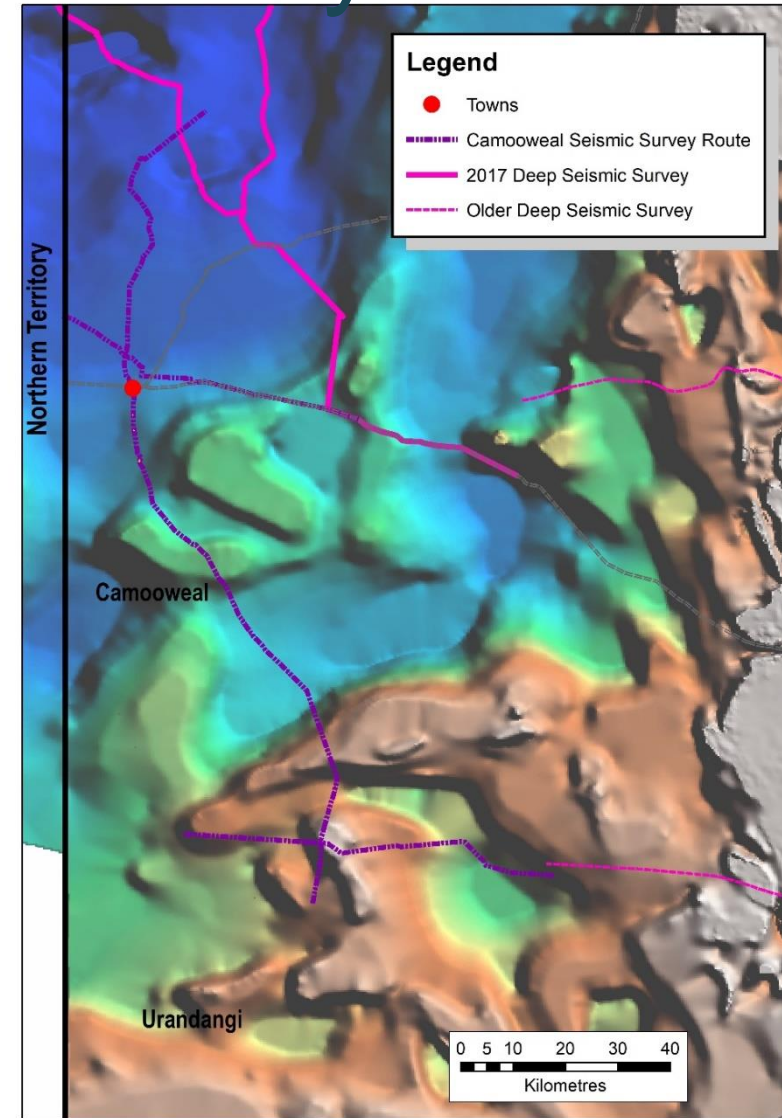
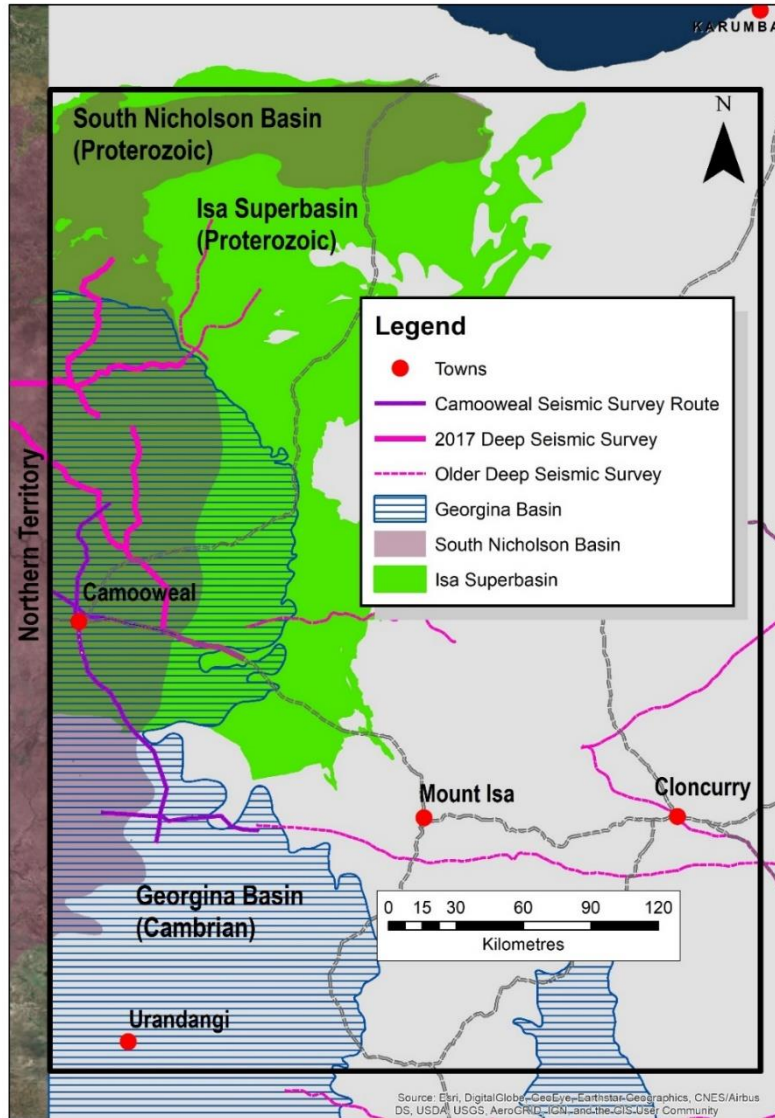
# Field Reconnaissance

Field work confirmed

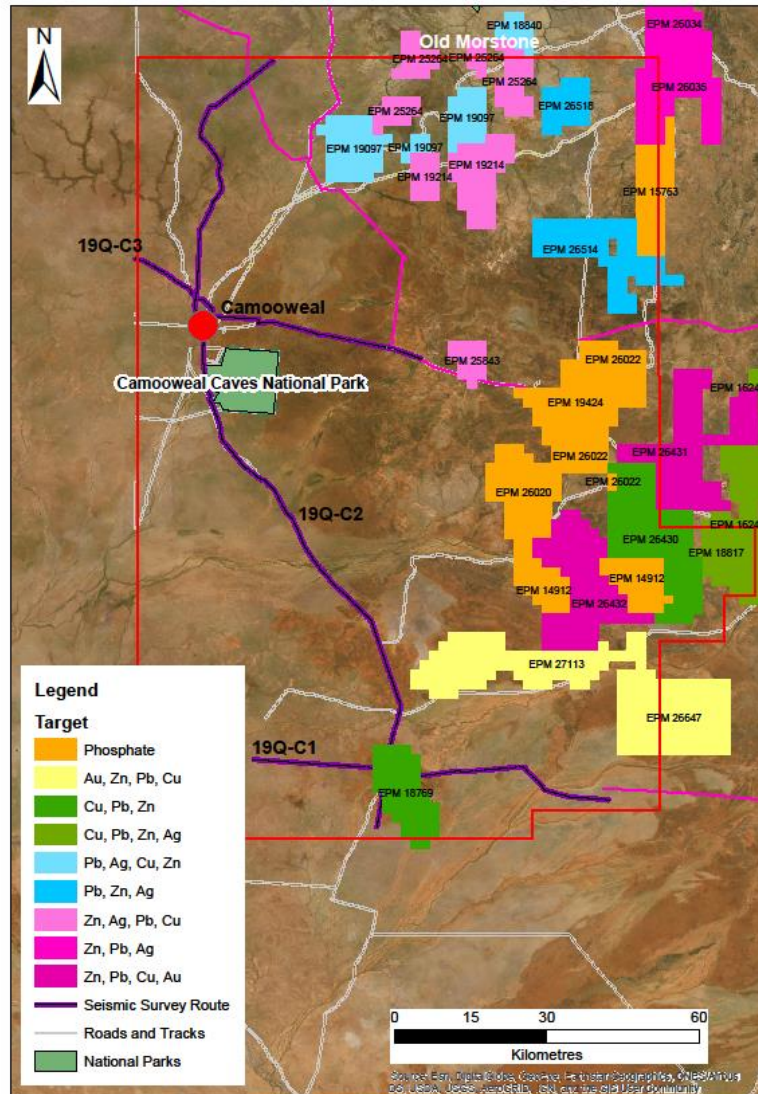
- Proterozoic formations in an area previously not included in a Proterozoic basin
  - re-define Proterozoic basin extent



# Camooweal 2D Seismic Survey



# Mineral Exploration in Survey Area



## Primary Targets

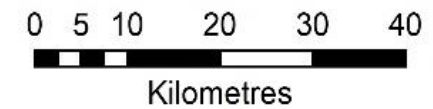
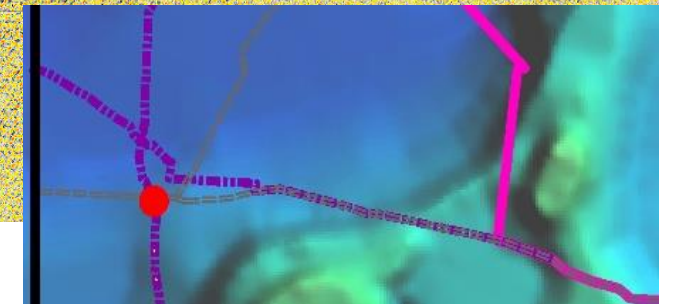
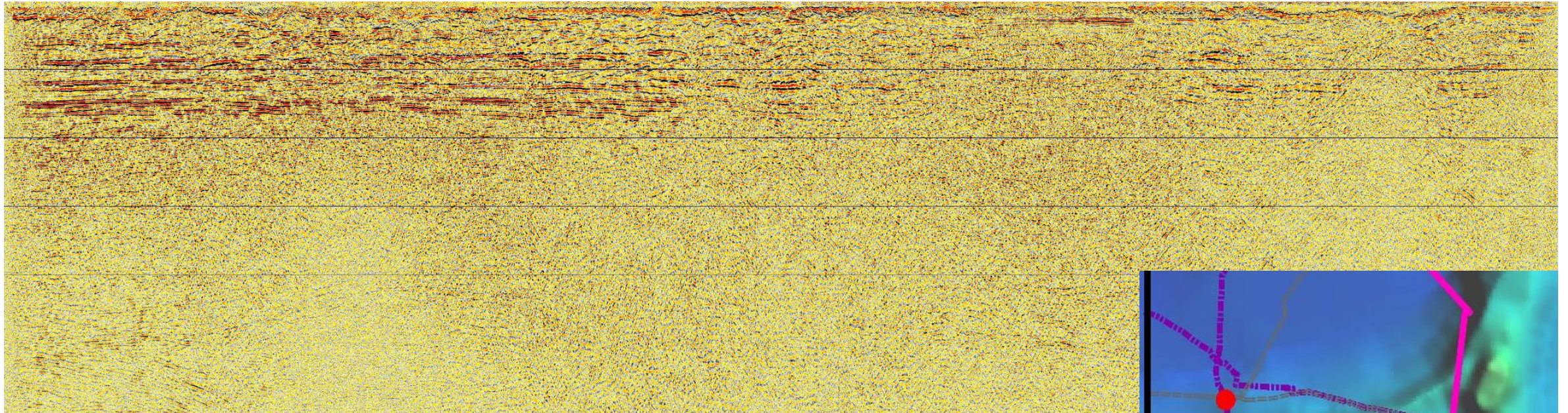
- Gold (Yellow)
- Phosphate (Orange)
- Copper (Green)
- Lead (Blue)
- Zinc (Pink)

Various combinations of Cu, Pb, Ag and Zn form the secondary targets

# Line 19Q-C3 6secs field stack

West

East



Shallow reflectors strong to 2 seconds, then patchy  
Poor reflectors at depth, some deep structure ????

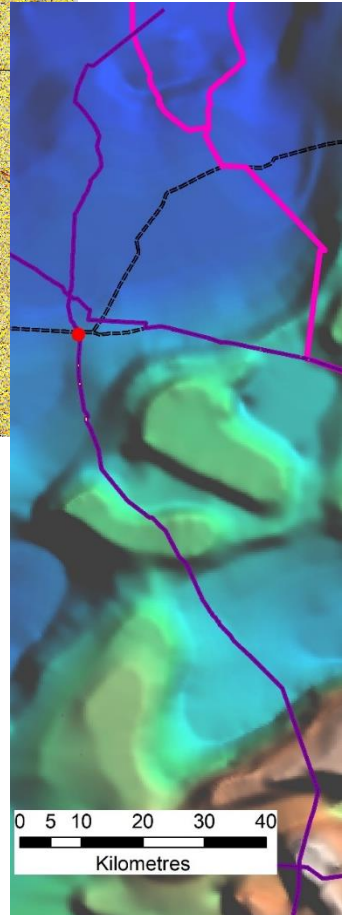
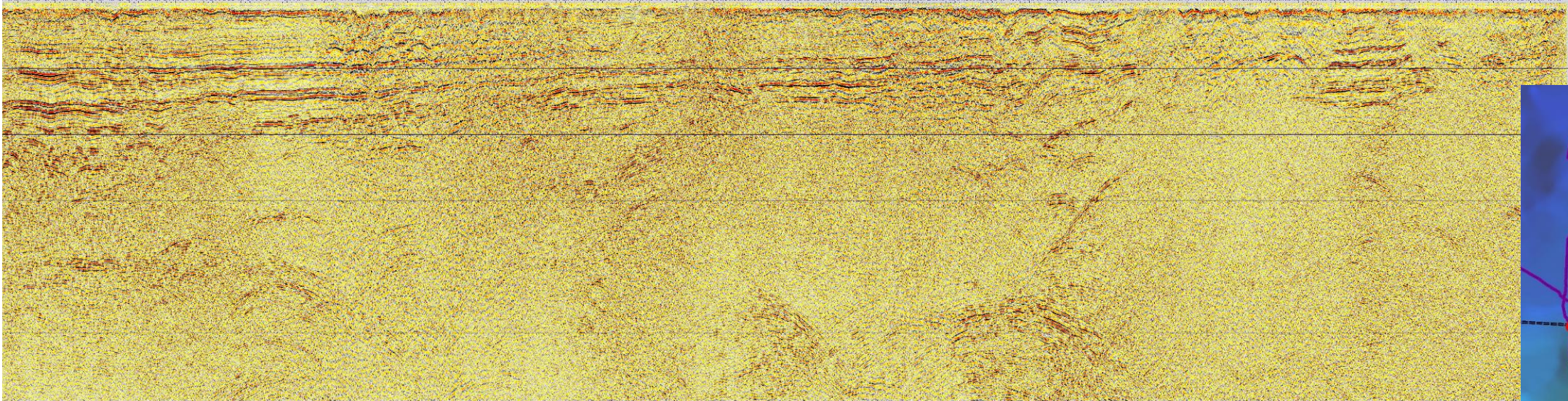
Recording overprinted by earthquake offshore Broome on 14 July



# Line 19Q-C2 6secs field stack

North

South



Base Georgina strong reflector visible (~600m)

Train track reflectors visible (Isa Superbasin)

Deep crustal reflectors visible

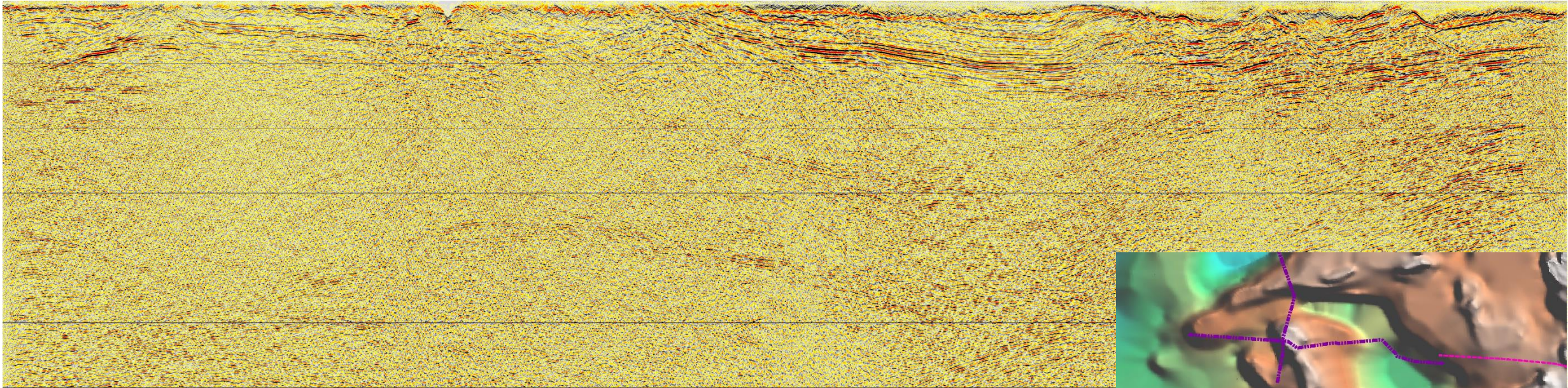
Not quite a match with the SEEBASE<sup>®</sup> model



# Line 19Q-C1 6secs field stack

West

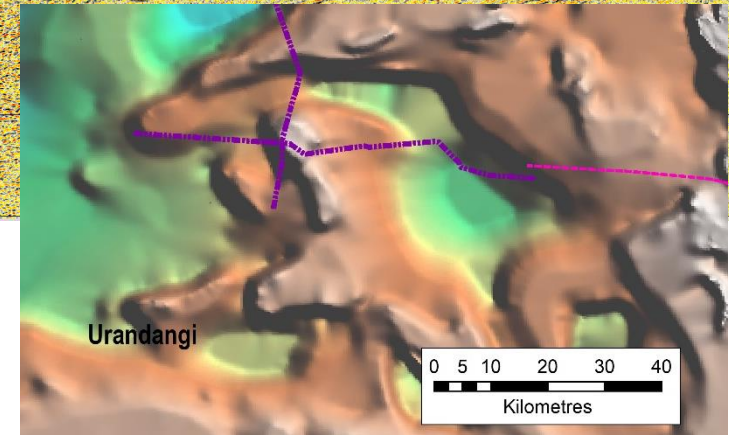
East



Base Georgina visible, highly structured to east

Good match with SEEBASE<sup>®</sup> model

Recording overprinted by Tennant Creek earthquake 1<sup>st</sup> August





# Conclusions

## In Summary

- Since 2017 several new datasets for NWQ produced
  - Deep (20secs TWT) Seismic surveys (SNB, Camooweal)
  - NWQ SEEBASE®
- Building a comprehensive dataset for region
- Camooweal seismic data available early next year



For more information contact:

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