



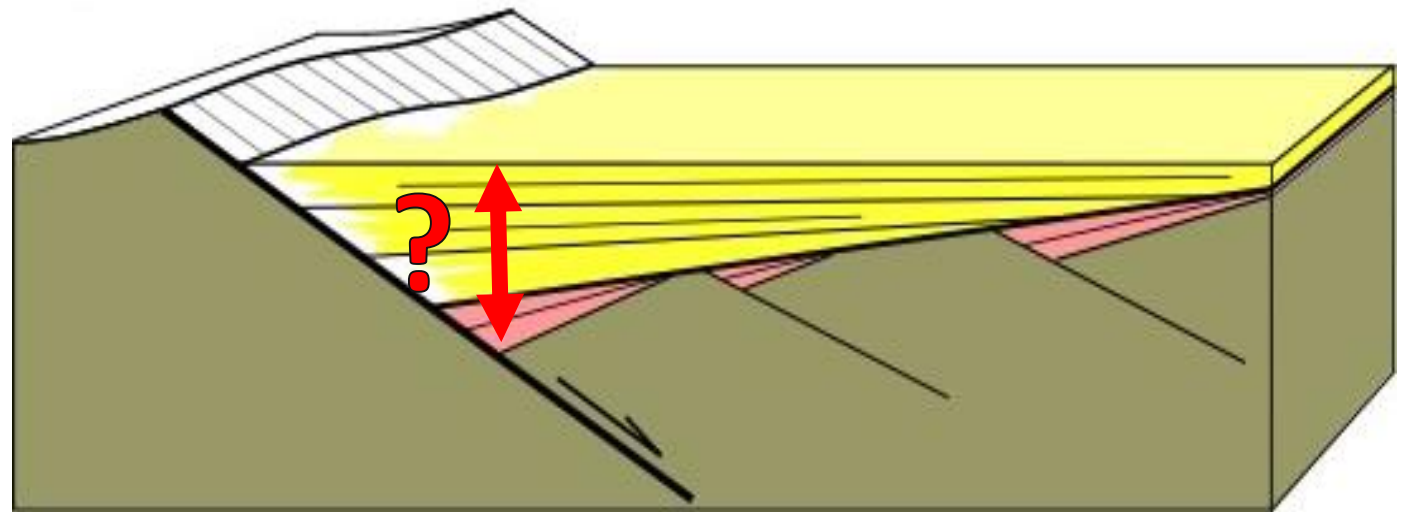
# Carnarvon Basin SEEBASE project

*How deep does the base of the basin go?*

Presented by

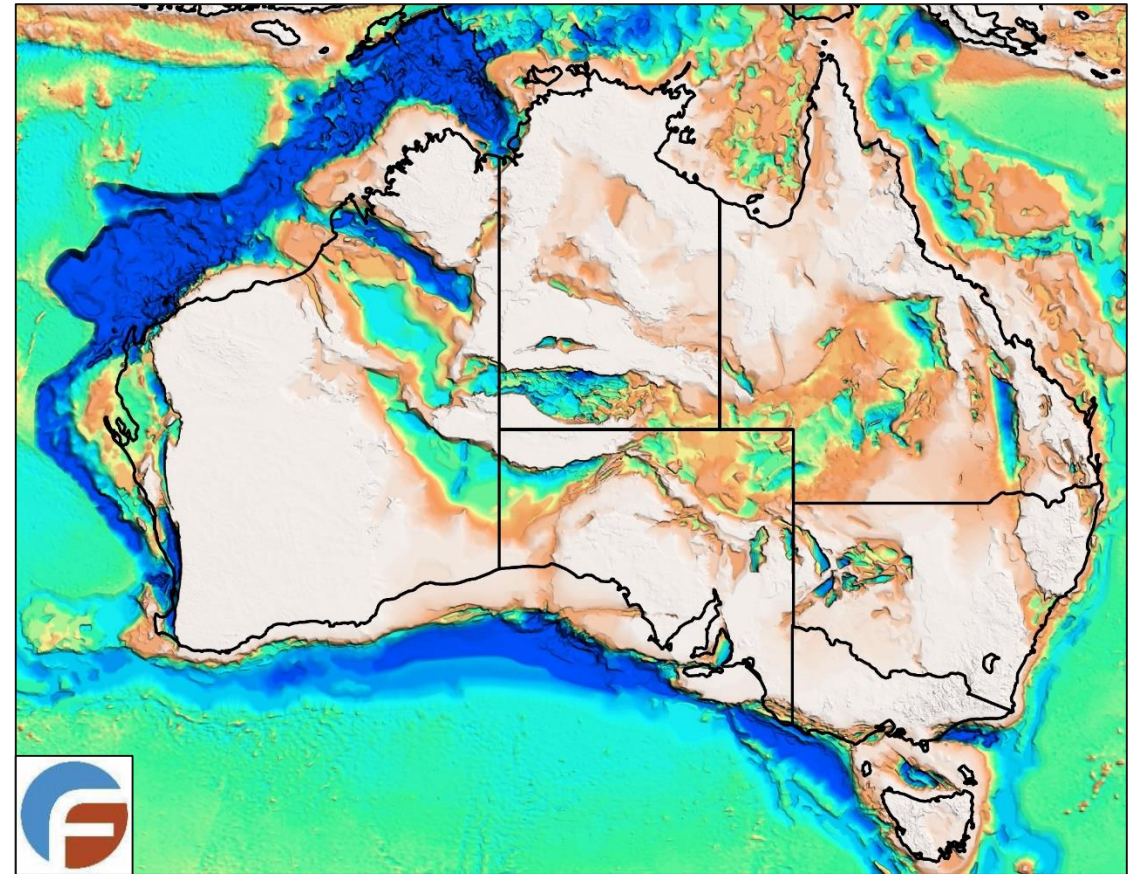
**Charmaine Thomas**

**Energy Geoscience Group**



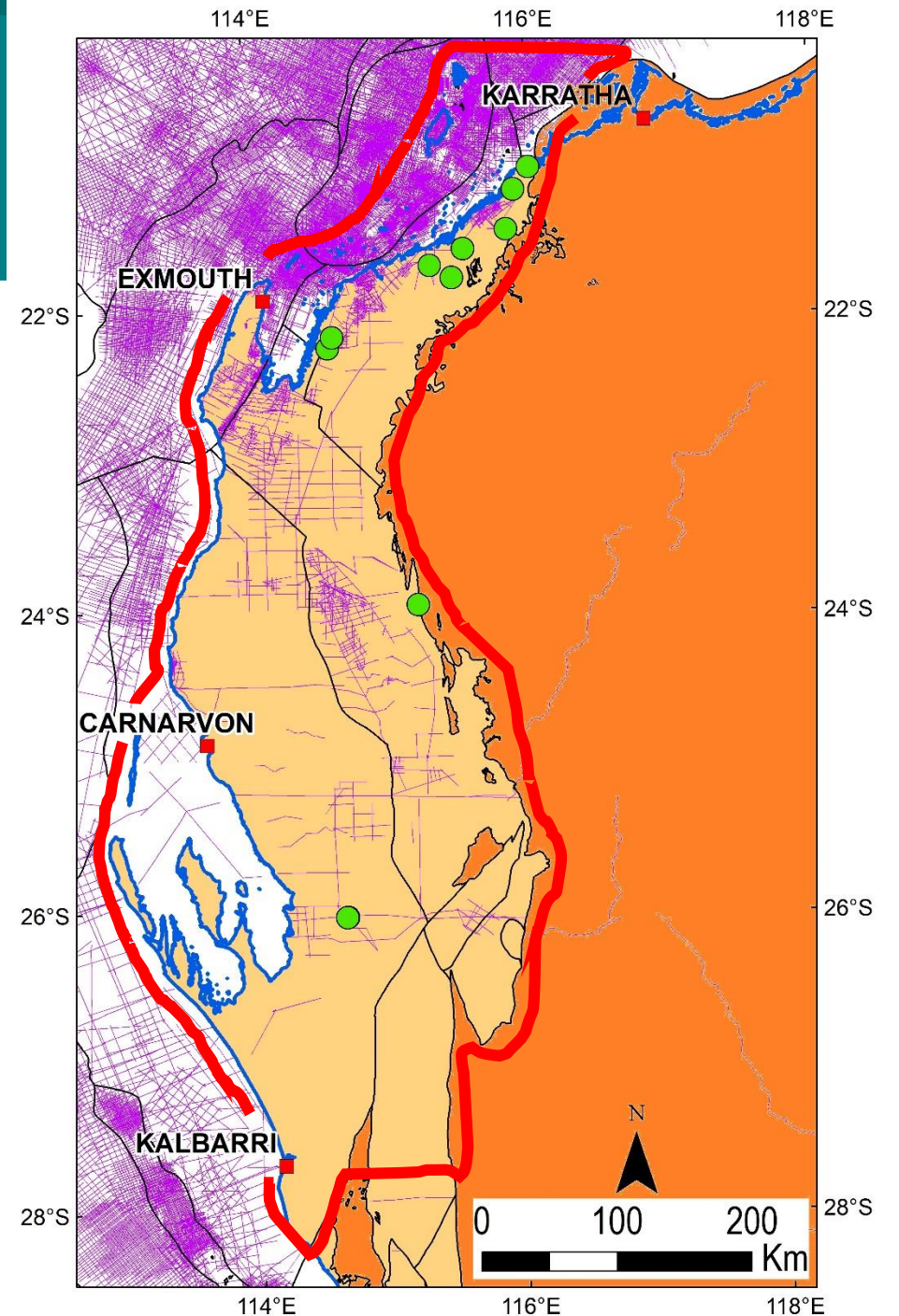
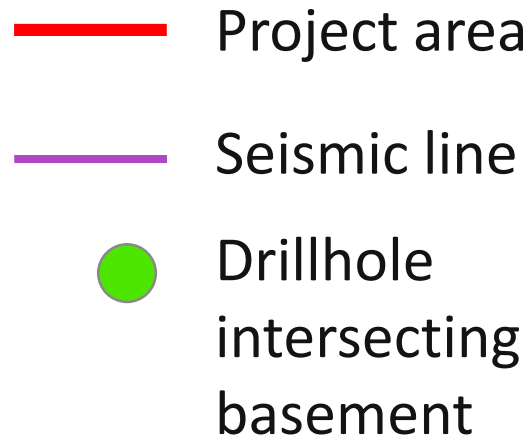
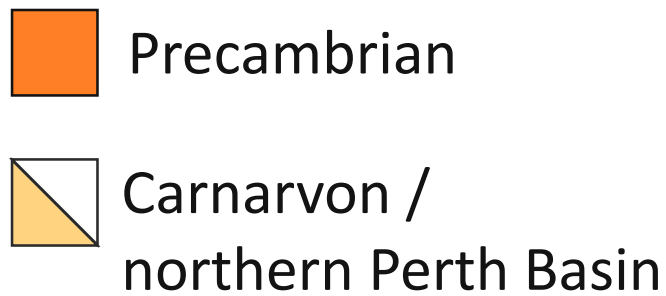
# What is SEEBASE?

- (Structurally **E**nhanced view of **E**conomic **B**ASEment) grid by Frogtech Geoscience
- Australia-wide map of 'economic' basement 'topography'
- Depth to basement always an uncertainty in any basin

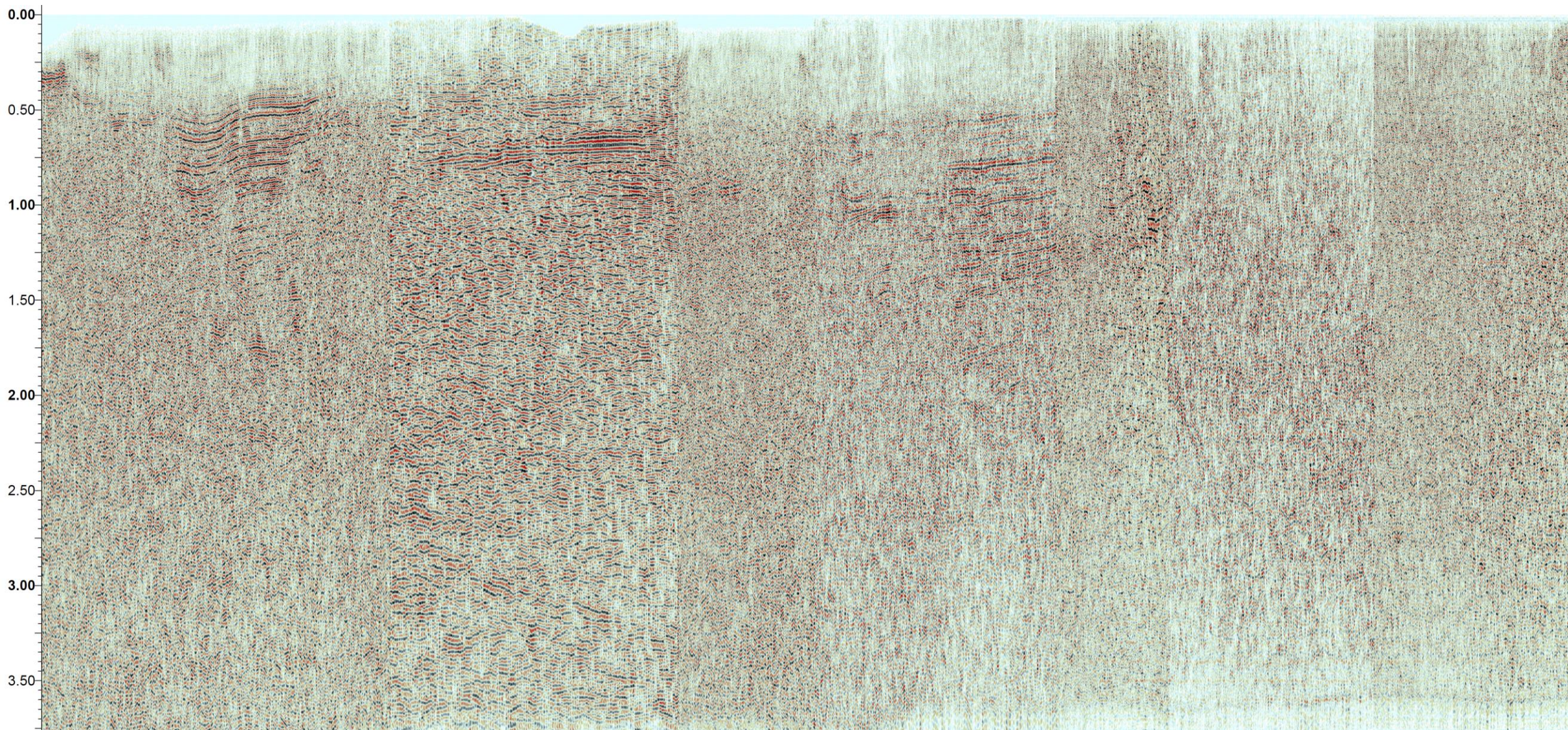


# Why the Carnarvon Basin?

- Very sparse and poor quality seismic especially onshore
- Few drillholes intersect basement
- Offshore, basement too deep to image

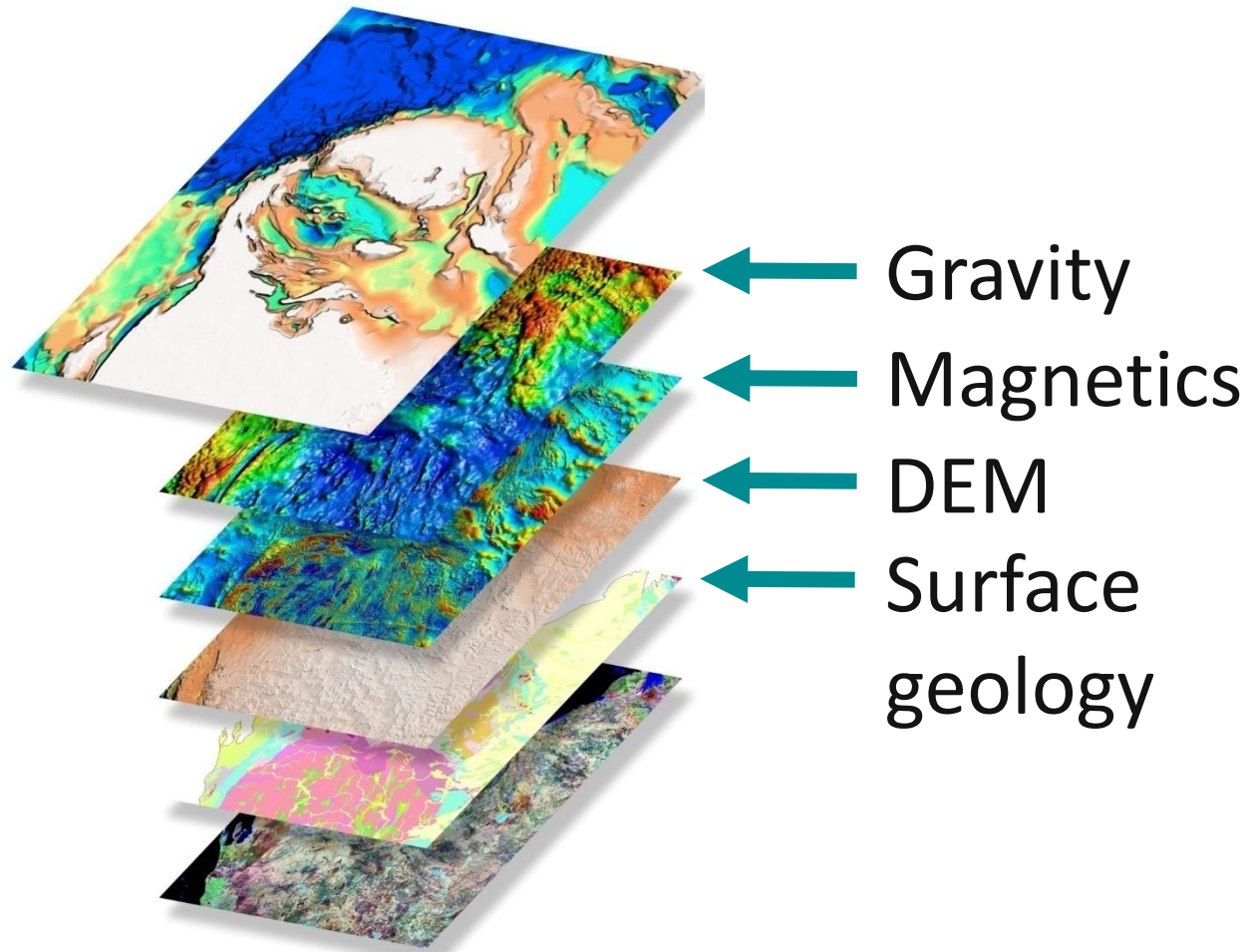






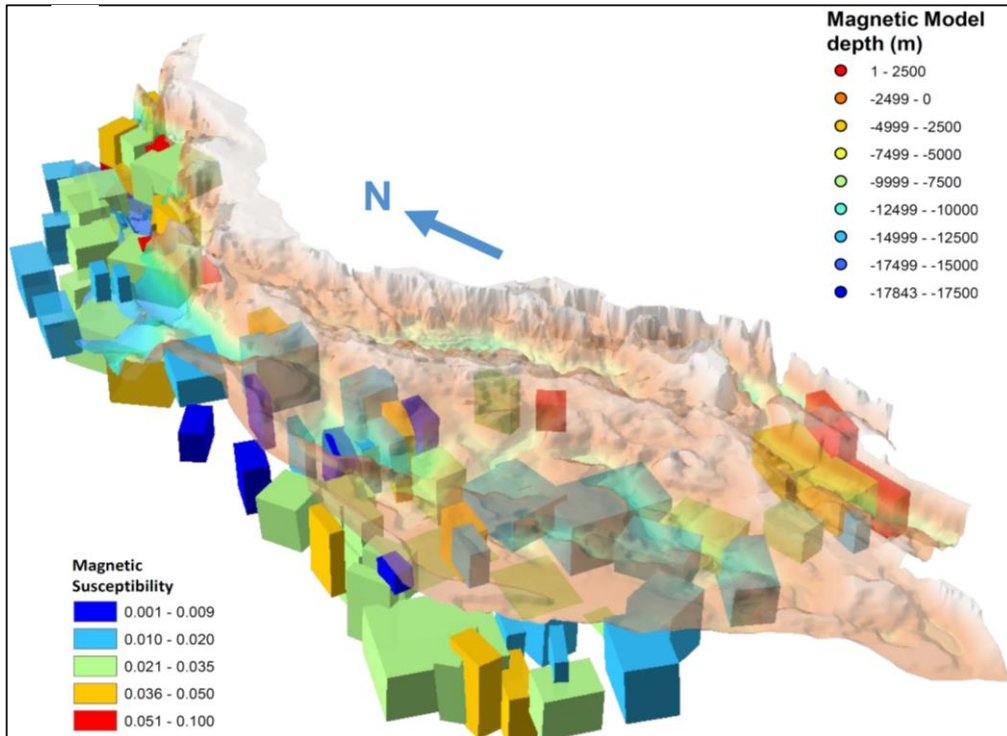


# SEEBASE construction overview

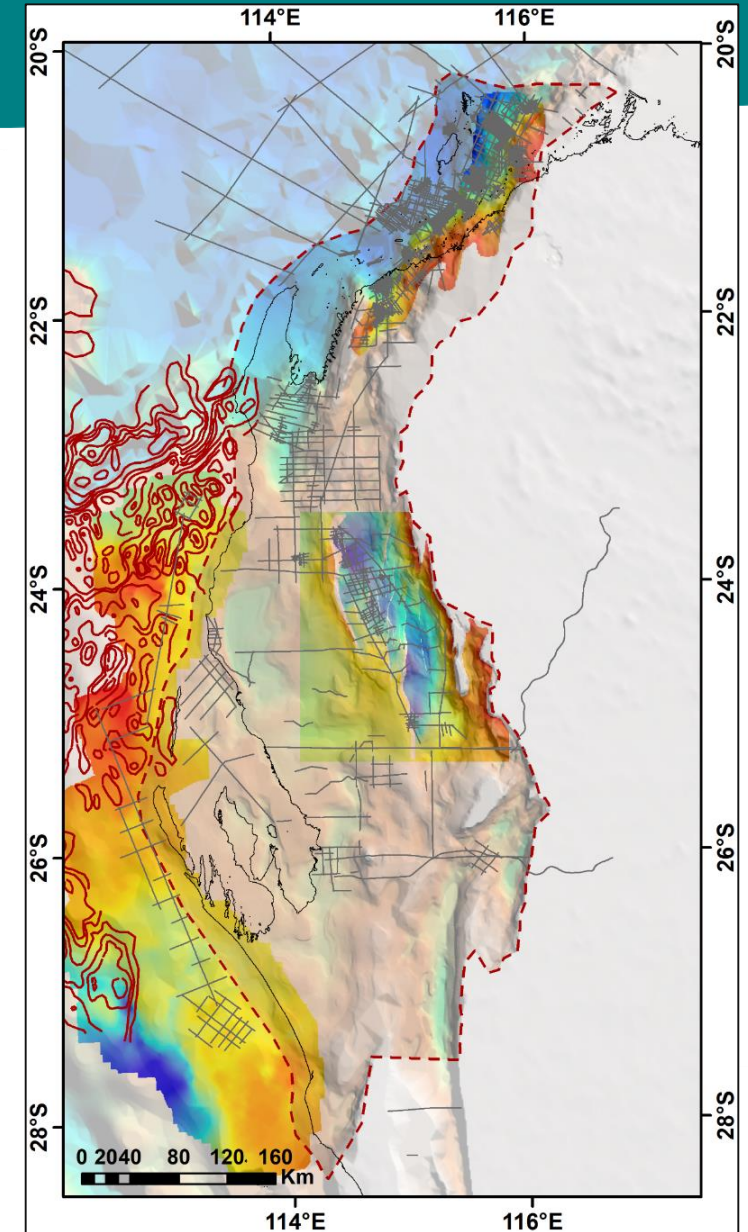


Core datasets

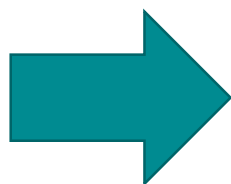
# SEEBASE construction overview



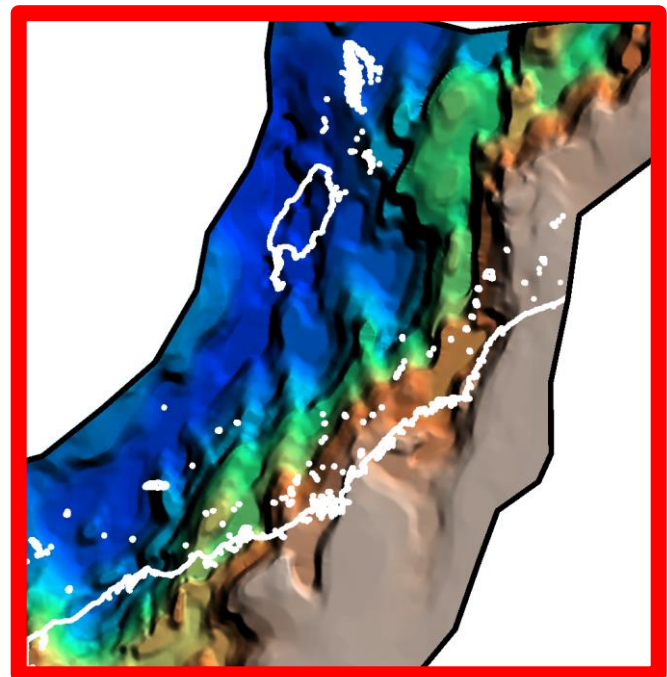
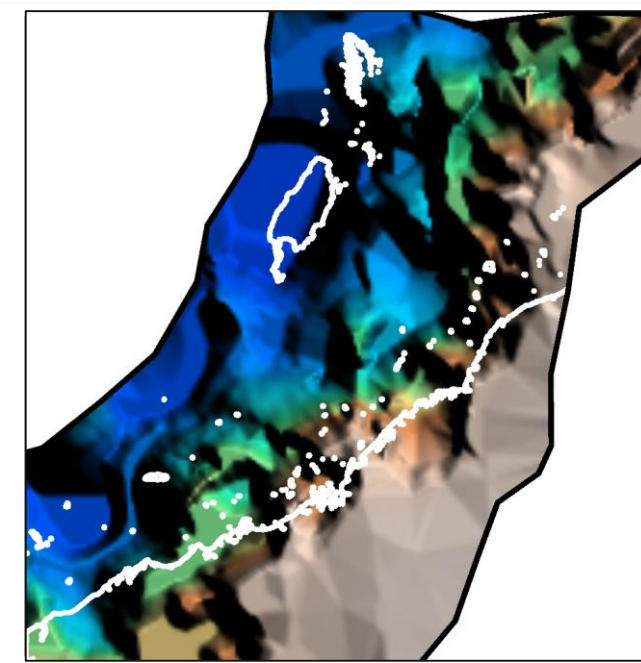
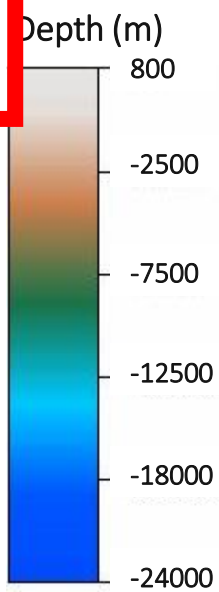
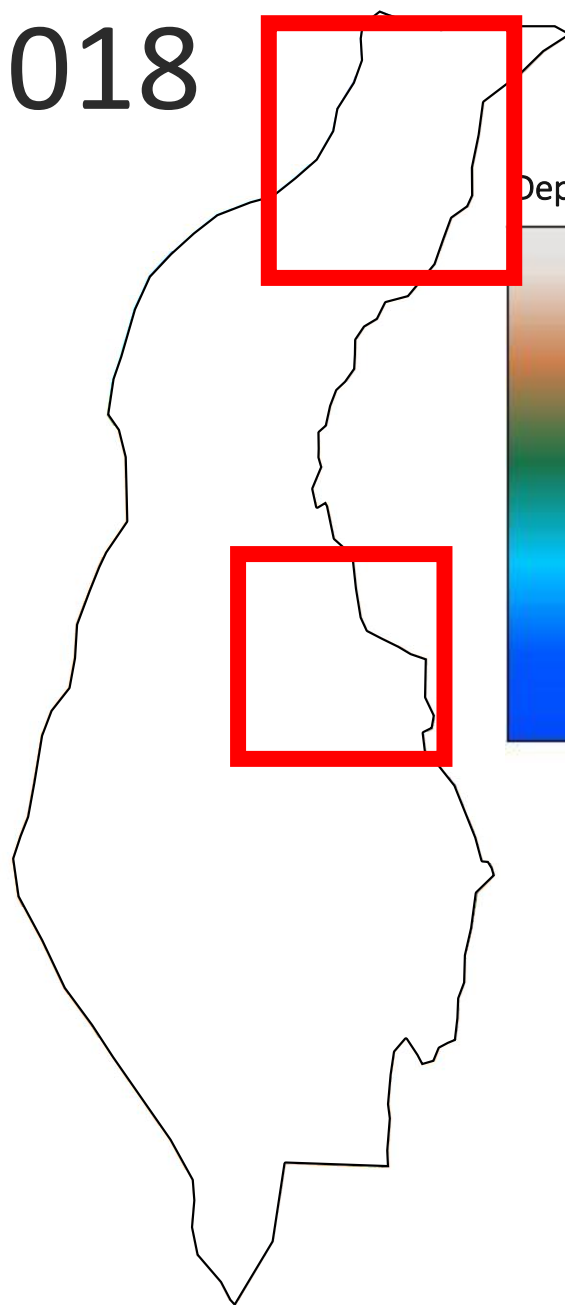
Depth to magnetic source modelling calibrated to GSWA seismic interpretations and drillholes



2005

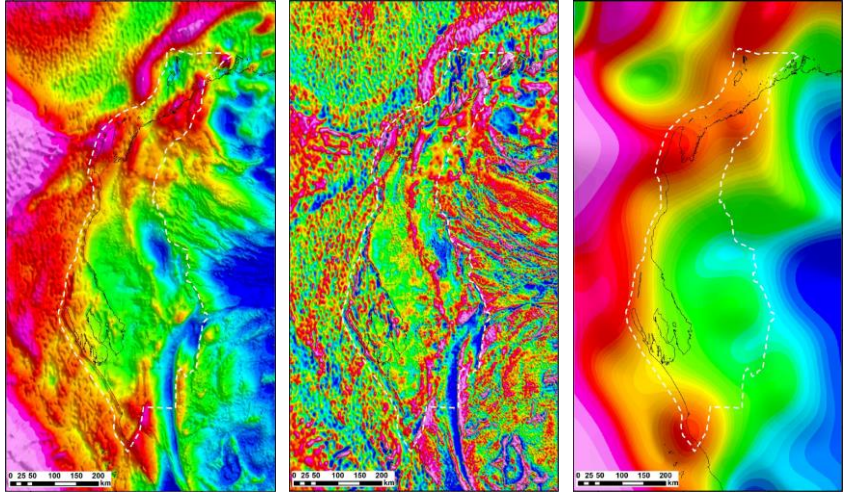


2018

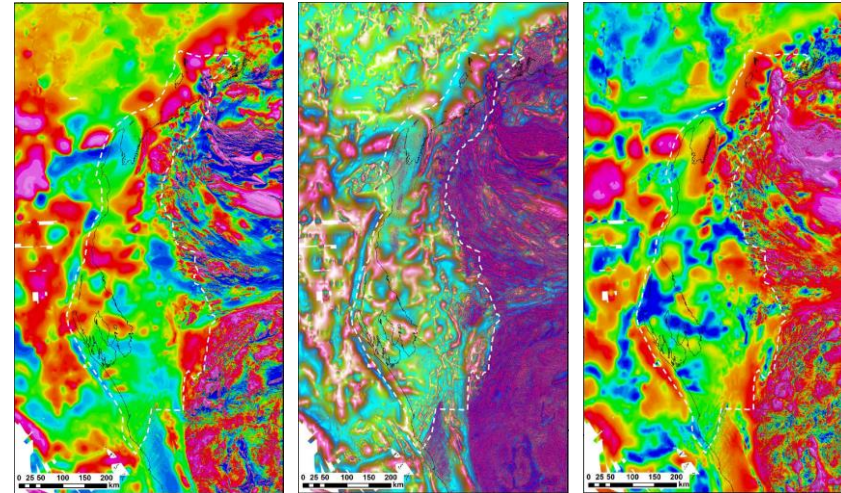




# Other included products...



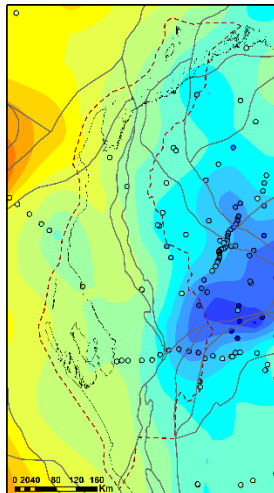
Gravity  
+ filtered



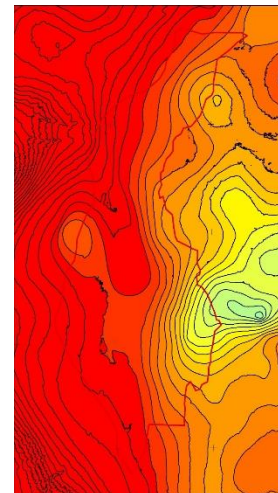
Magnetic  
+ filtered



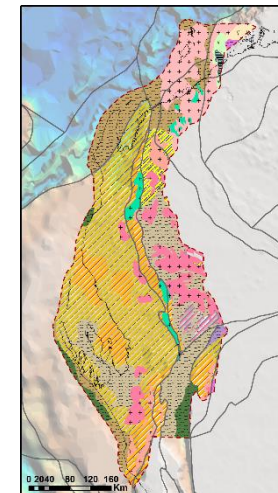
DEM



Crustal  
thickness



Depth to  
Moho

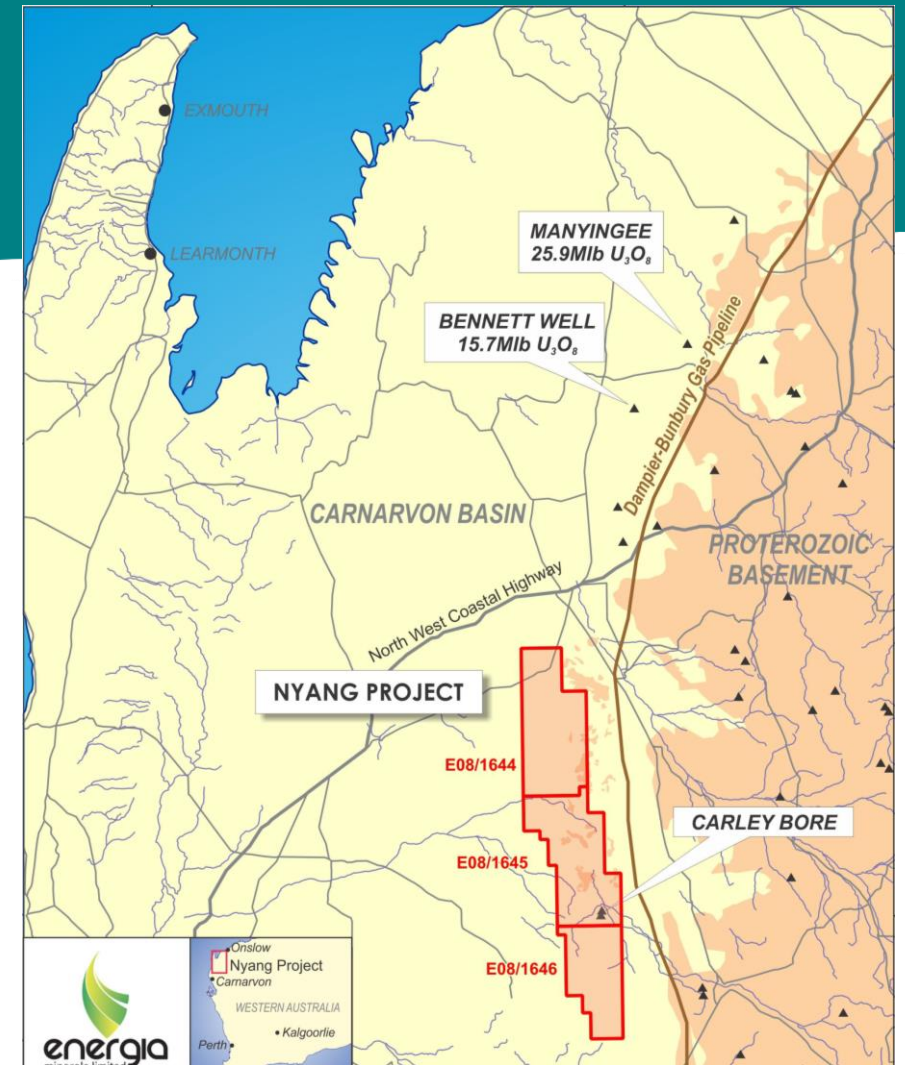


Interpreted  
basement  
lithology



# Who will use it?

- Can aid in exploration of:
  - Hydrocarbons
  - Geothermal energy
  - Groundwater
  - Base metals
  - Uranium (avoid basement!)



Only the central hole on this line was drilled (LYRM010). It revealed that there was a Proterozoic basement high occurring locally, with the hole terminating at 30m in granite. No Birdrong Formation was encountered with all of the overlying sediments being impermeable



# How can I get it?

## DMIRS eBookshop

- Report and ASCII grid free download
- ArcGIS USB package order form

The screenshot shows the DMIRS eBookshop website. At the top, there is a navigation bar with the Government of Western Australia logo and the text "Government of Western Australia Department of Mines, Industry Regulation and Safety eBookshop". A shopping cart icon shows "0 items". Below the navigation bar is a search bar with the text "Search keyword, title, author, locality" and a "Go" button. To the right of the search bar is a breadcrumb trail: "Home > Department of Mines, Industry Regulation and Safety Bookshop Homepage". Below the search bar is a "Categories" menu with the following items: Book series, Explanatory notes, Non-series books and articles, Geological map series, Regolith geochemical maps, Geophysical maps, Other maps and atlases, Data packages, 3D geology, Virtual tours, and Posters and flyers. To the right of the categories menu is a "Featured Books" section with the text "All books available as free PDFs". There are five book covers displayed, each with a title and a "Downloadable file" link. The books are: "Regional seismic interpretation and structure of the southern Perth Basin", "Petroleum geochemistry and petroleum systems of the Perth Basin", "Gemstones of Western Australia second edition", "The Cryogenian Aralka Formation, Amadeus Basin: a basinwide biostratigraphic correlation", and "Metamorphic history of the Mougoderra Formation, Yilgarn Craton, Western Australia".

<http://www.dmp.wa.gov.au/ebookshop/>