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Deep Exploration Challenges

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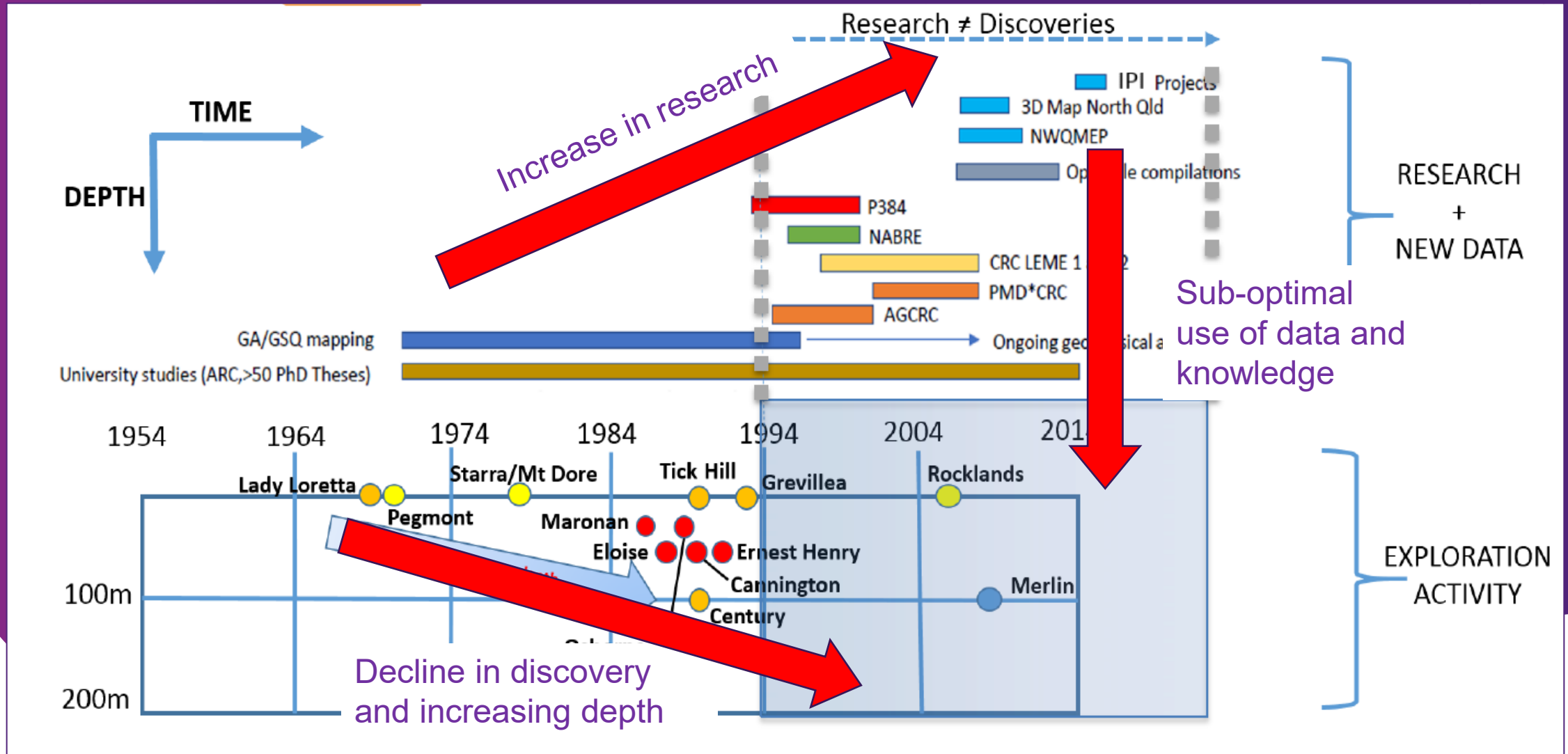
December 12, 2024







Current situation – NW Queensland = Mount Isa Block



Exploration – just how hard is it ?

Drill the “bumps”? And yet,
substantial upgrades to resources
long after discovery

- Ernest Henry – “Ernie Junior” and “Bert” (Cu-Au)
- Homestake (Au)
- Kiruna – REE-bearing phosphate deposit (Fe oxide-apatite-REE)

Geophysics courtesy of Mawson Finland

0 1,000 m



From Evolution Mining Fact Sheet



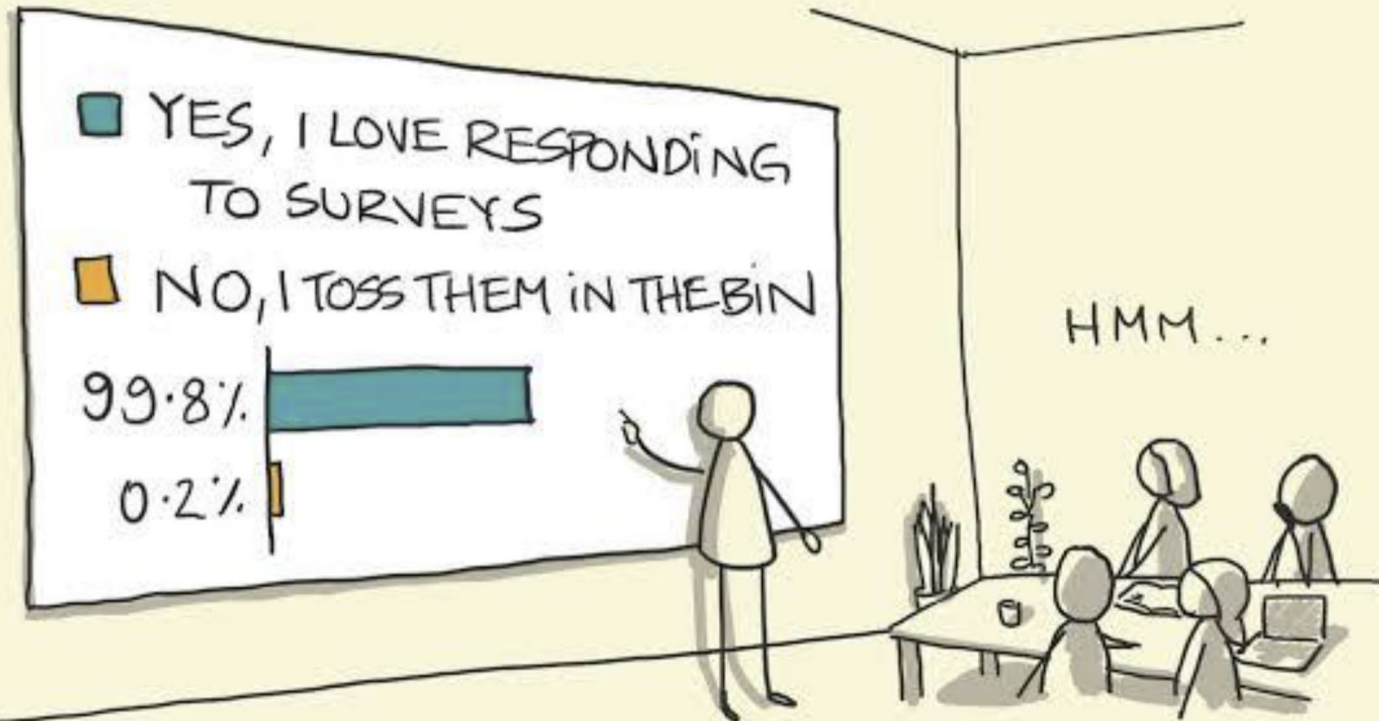
Kiruna (& Homestake) – major discoveries after long history of mining and near-mine exploration



In summary – in the exposed, “known”, or near mine volumes, what can we do??

- ✓ We can develop near-miss/hit criteria from understanding mine data (e.g. alteration modelling)
- ✓ Do we have directional data ?? Sometimes, and better with down-hole electrical geophysics
- ✓ We can train AI/ML systems using complex data regional modelling....
- ✓ **I would still rather train geologists & geophysicists !!**

SAMPLING BIAS



" WE RECEIVED 500 RESPONSES AND
FOUND THAT PEOPLE LOVE RESPONDING
TO SURVEYS "

sketchplanations

Who is choosing projects and what areas are being chosen ?

Is there a pre-dominance of chalcophile metals in the mix – controlled perhaps by a strong knowledge base?

What is the best source of non-chalcophile(+siderophile) critical metals? For example, REE metals, perhaps heavy mineral sands with Ti, Zr, and monazite

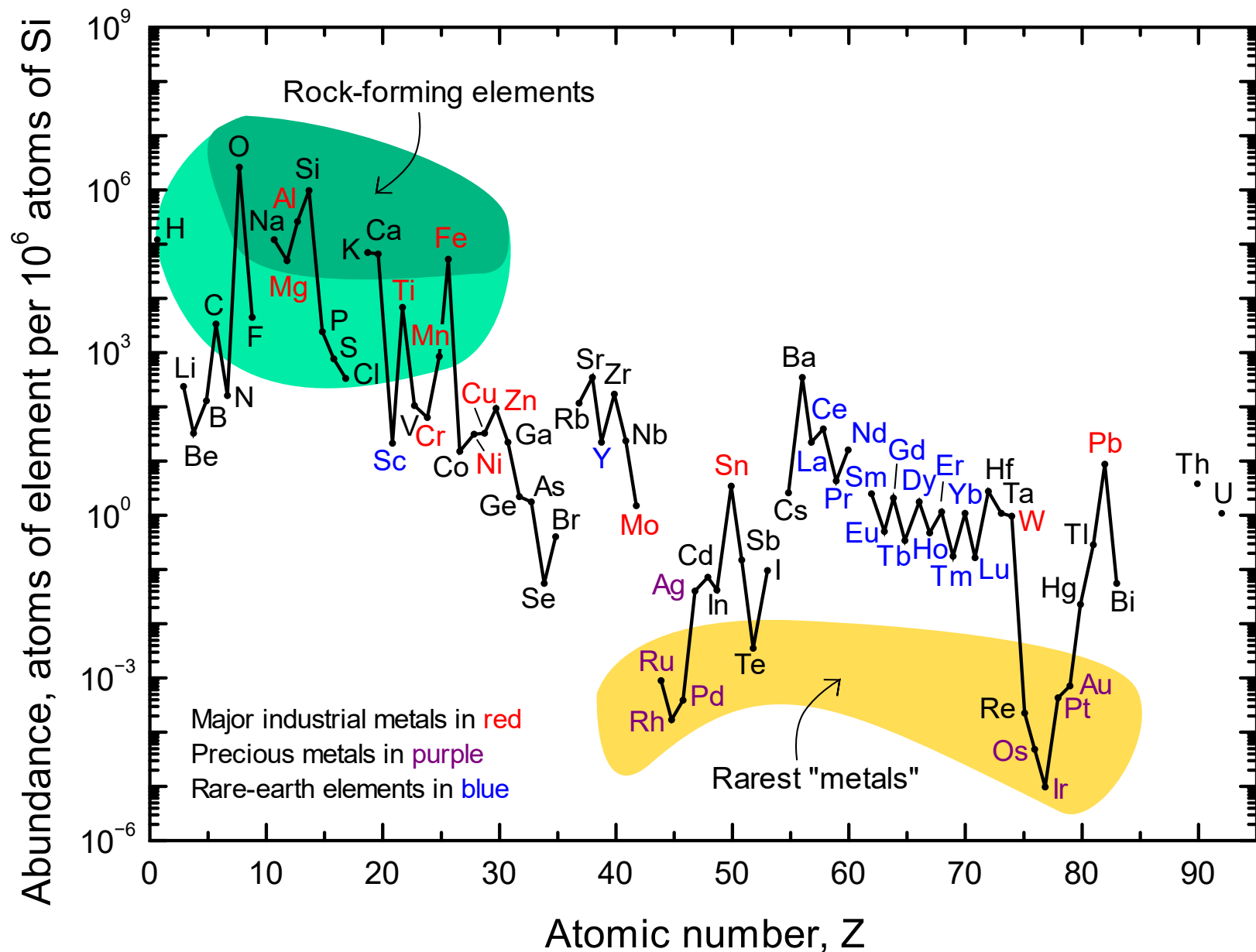
I would argue we need to move away from “hard-rock” sources and reconsider brines, sediment-hosted Cu (not if you are already in the Kupferschiefer !), heavy mineral accumulations and weakly bound cationic interactions....

What is Deep Exploration ?

I would argue that ... “it is exploration where there is no geochemical surface signal”

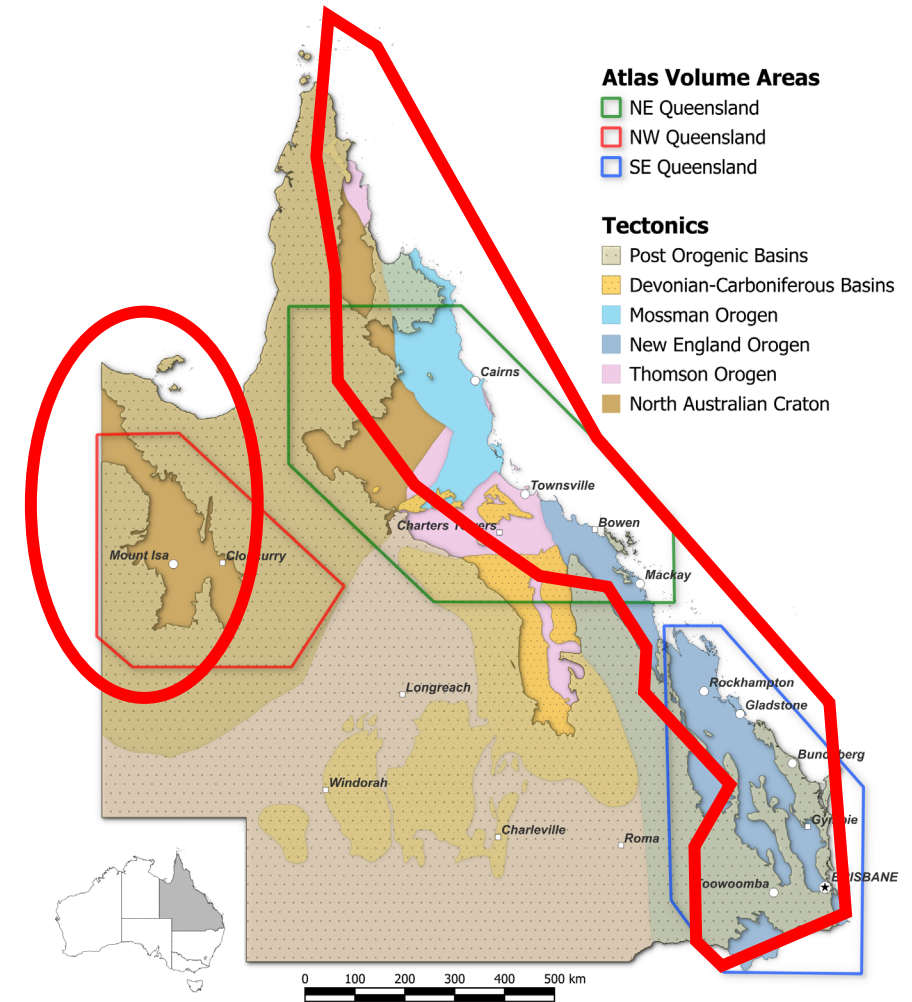
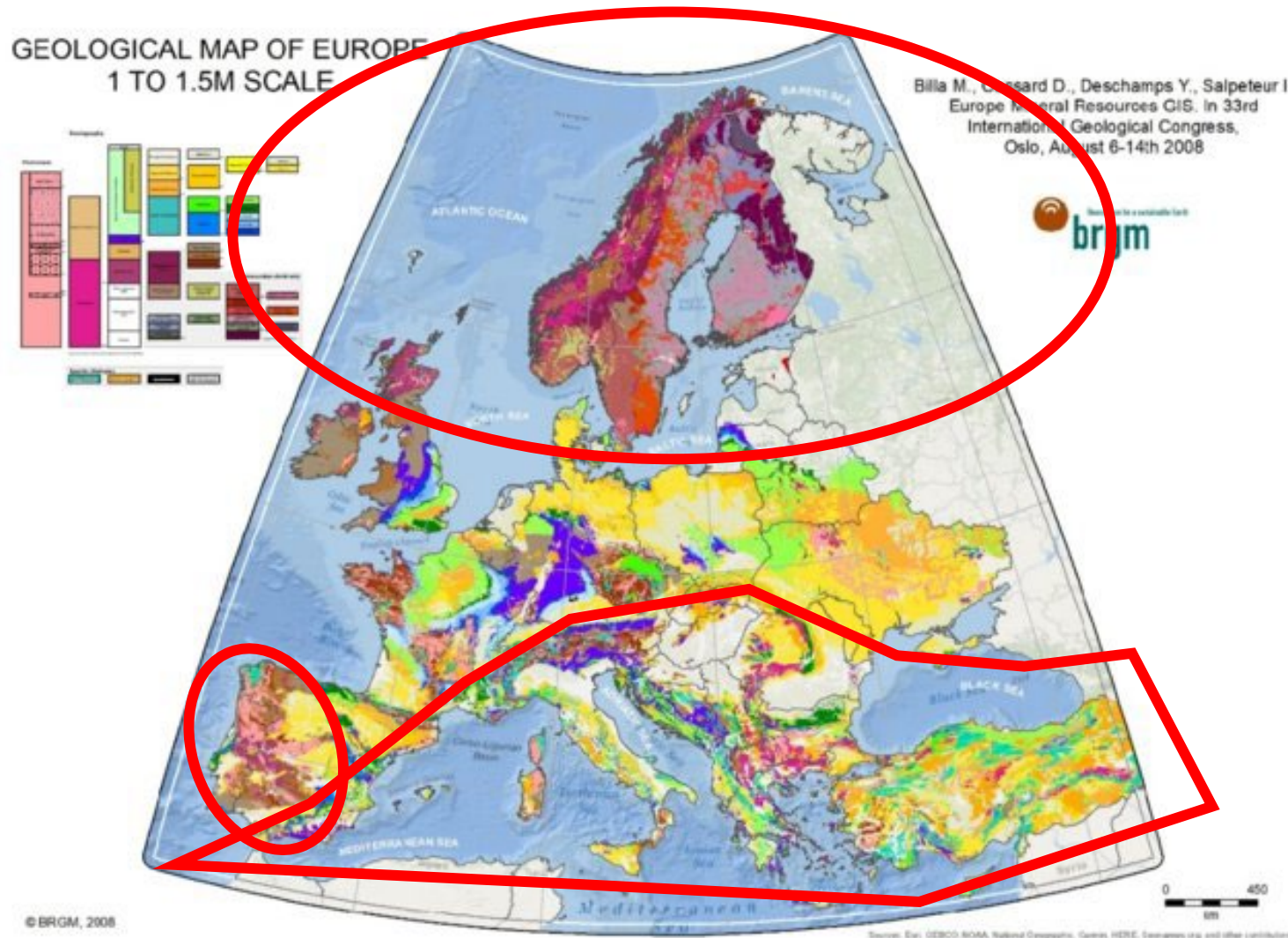


How are we going to look,
when the dispersion is
already starting from such
a low value?



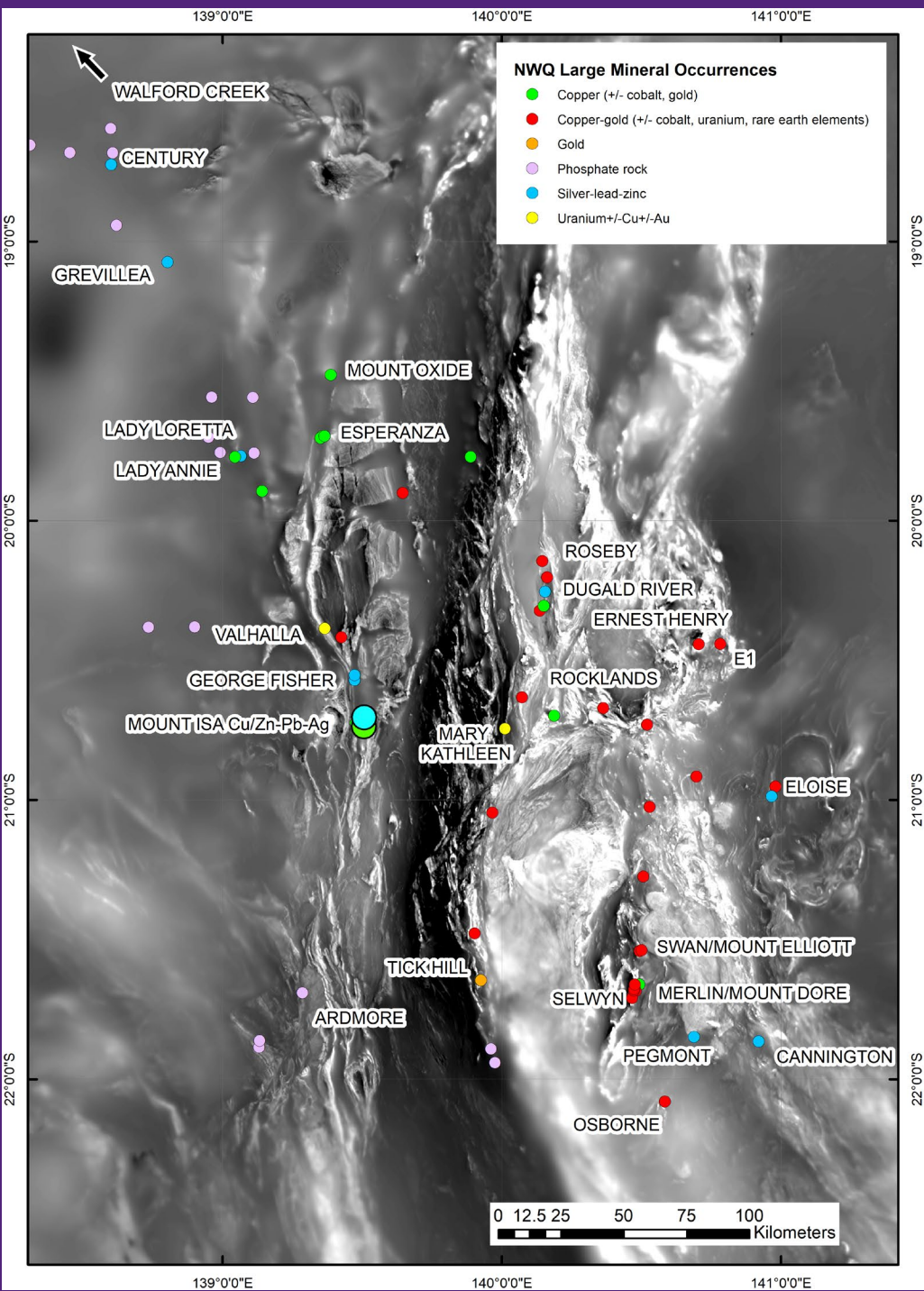
What is Deep Exploration?

GEOLOGICAL MAP OF EUROPE
1 TO 1.5M SCALE



Mount Isa Block

19 large scale deposits
in the Mount Isa Block



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Most of the block is under
cover

Going undercover.....

- Social acceptance?
- Regional geophysics (magnetics, gravity, deep electrical methods) – is this geodynamics, or exploration targeting?
- Dispersive signals ?
- A correlation with “known geology” - prospectivity
- What are the “near-hit” signals if we are drilling?



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Thank you

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