Integrating landscapes with geochemistry in the central Gawler Craton region

Why the understanding of landscapes is important to improve the success of Mineral Exploration in regions under cover?

*Because it tells where to go, which media to sample and the source of the geochemical anomalies*

*Sheard et al. (2008)*
Landscape domains and the asymmetry of mineral discoveries

Modified from Gallant and Dowling (2003)

Murchison Province, Meekatharra goldfields
What we know: Landscape geochemistry is an efficient proxy in mineral exploration

Gonzalez-Alvarez et al. (2019)

Wilford et al. (2016)
Featureless landscapes,

Neotectonics

The Coompana Region

Gonzalez-Alvarez et al. (2018)
Noble et al. (2018)
Linking the geochemistry of basement and surface, >500 m cover


(2) Fluvial sandstones, erosional + permeable

(3) Transitional sedimentary facies (sandstones, siltstones and mudstones) With mixed up geochemical signatures.

(4) Geochemically impermeable limestones

(5) Surface geochemical anomaly associated to neotectonic active structures?
Mapping geochemical dispersion processes across scales: addressing variability

Gonzalez-Alvarez et al. (2016 and 2019)

Gawler workshop
Interpreted faults
2 Dominant Sets
One fractal dimension: $\sim 1.78$
log-normal length distribution

$R^2 = 0.99$
Mapping landscapes is essential to better target and detect the geochemical footprints of mineral systems in the cover at regional scale.

Sheard et al. (2008)