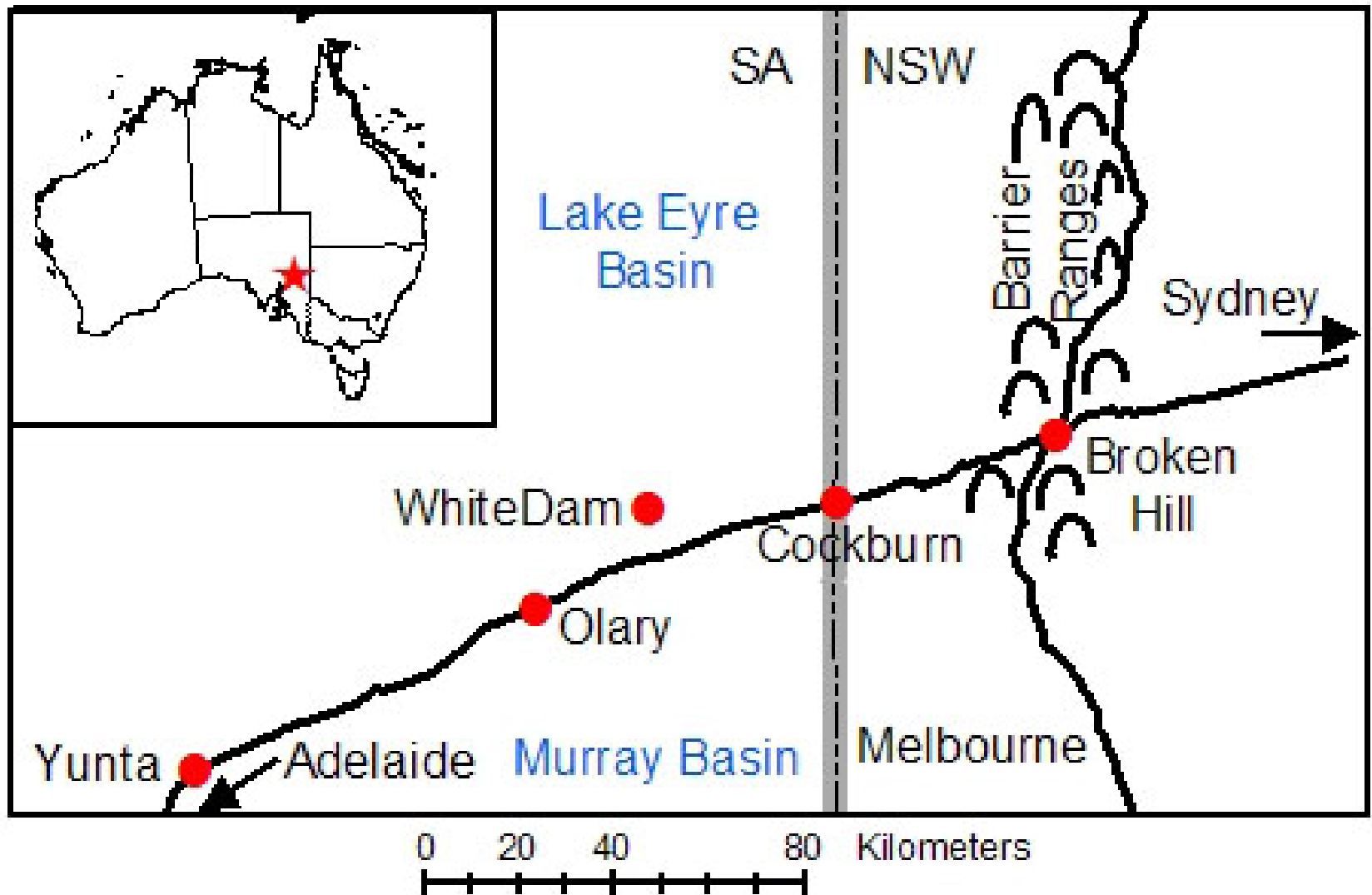


Soil Vs Biogeochemical expresion of mineralisation. White Dam SA

Aaron Brown & Steve Hill



We Have a Problem

- Up to 70% of Australia is covered in regolith
- At White Dam >1 m of cover was sufficient to conceal over ½ of a Au deposit with an estimated profit of \$22 Million

- Why does White Dam have such a poor geochemical expression?
- How many other “White Dams” have been missed under shallow cover?

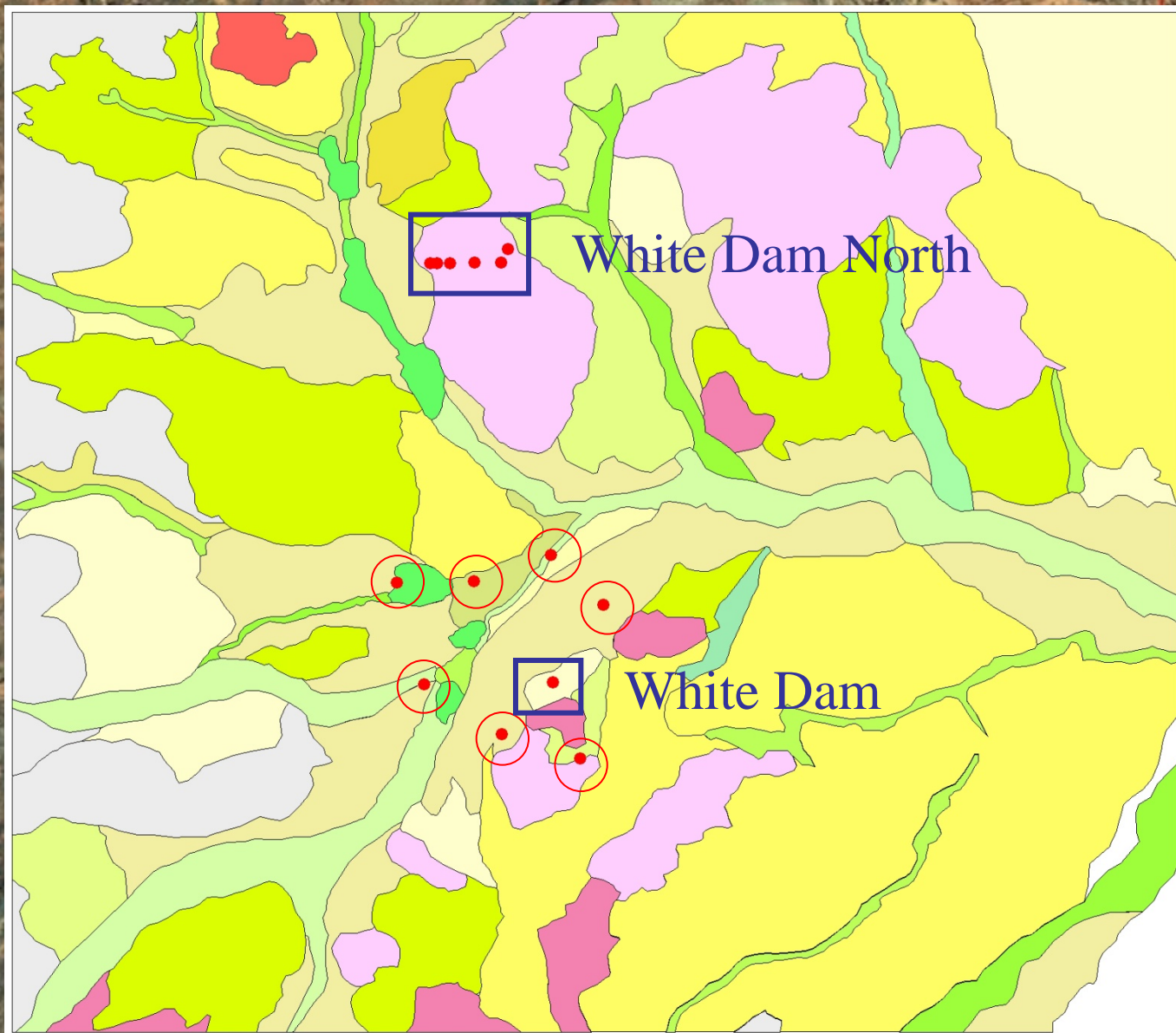


Our Approach

- 1:2000 regolith-landform mapping to provide context
- Surface Dispersion Mapping
- Re-sampling soils with emphasis on a consistent sampling media
- Biogeochemical sampling, bladder saltbush
- Subsurface sampling from costeans. 3 sample media

Exploration History

- Aberfoyle Resources discover anomalous Au in White Dam area
- Follow up geochemical sampling by MIM at 400 m , and then 100 m grids generated a number of anomalous Au results
- MIM used basic “Regolith” map to help plan sampling strategy
- Sampled -80# on erosional rises, and 3 kg samples for BLEG from depositional areas









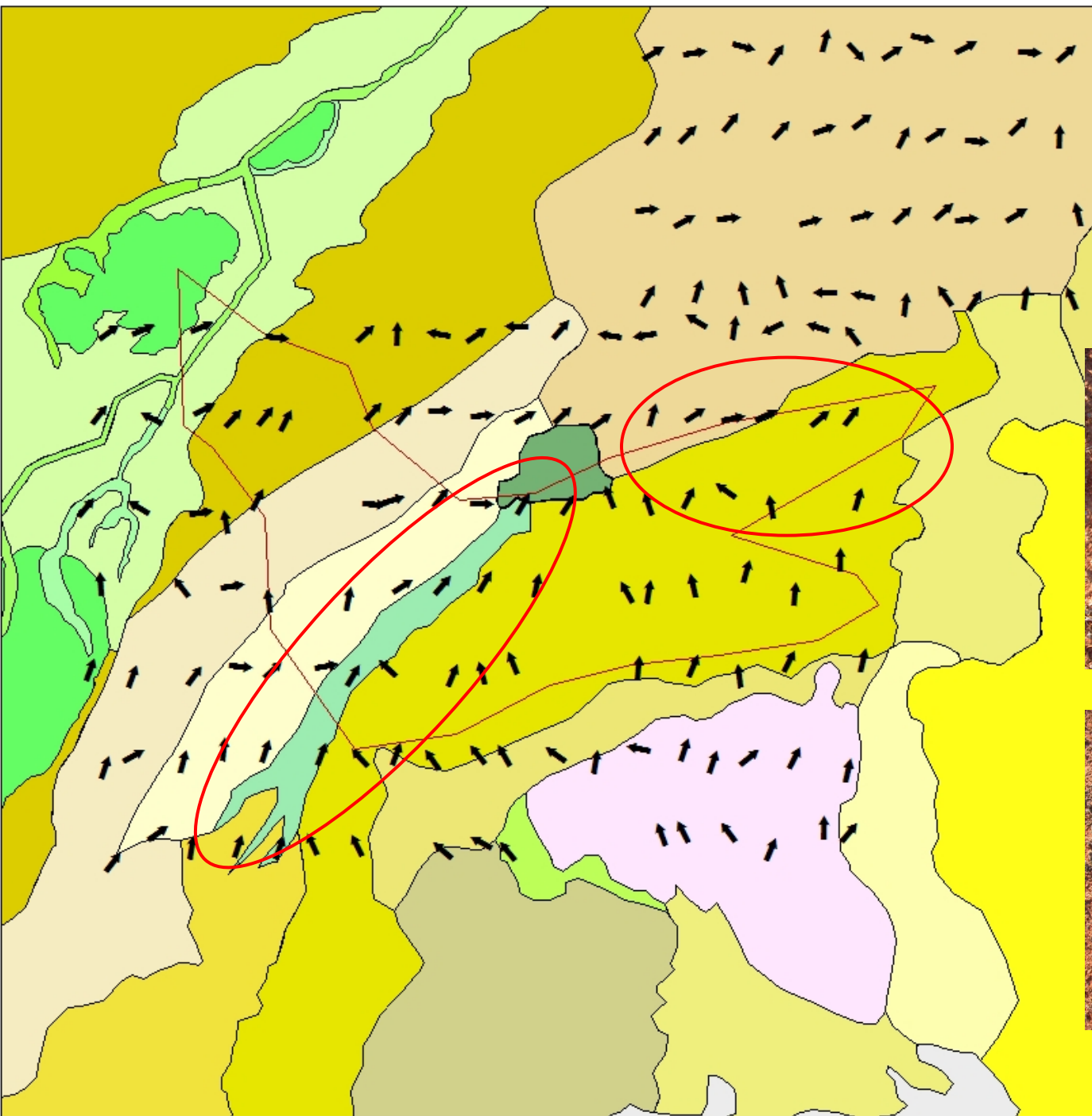








Surface Dispersion Vectors

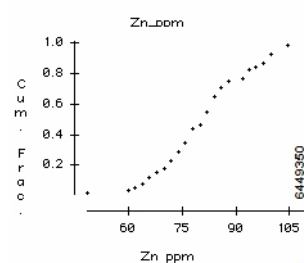
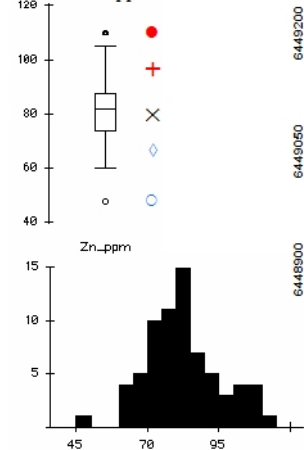


Zn

Topsoil

Summary Statistics

Count: 70
Mean: 82ppm
Median: 82ppm
Minimum: 48ppm
Maximum: 110ppm
Range: 62
Det. Limit: 2ppm

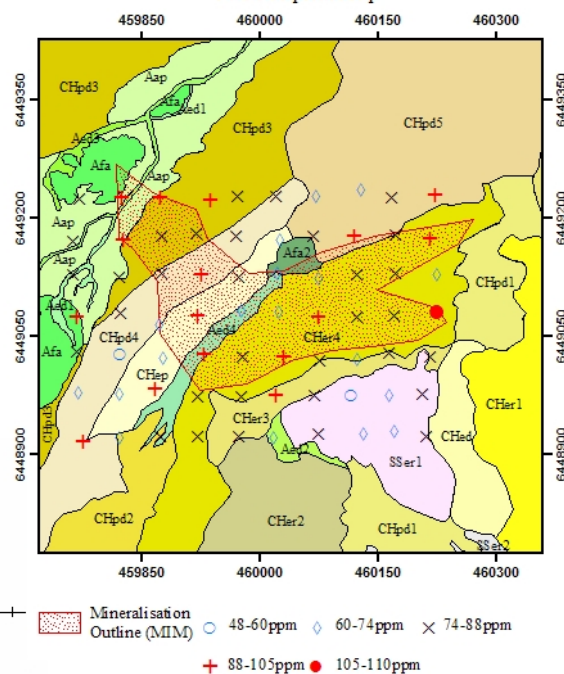


Legend

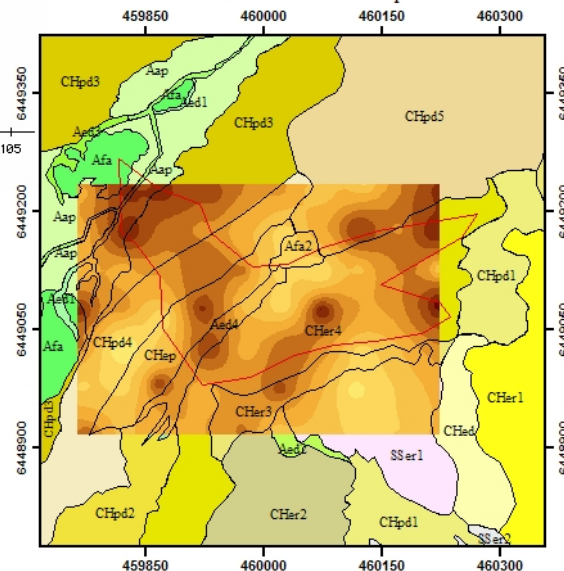
Zn Radial Basis Functions Prediction Map

48.000000 - 57.936707
57.936707 - 66.007568
66.007568 - 72.562943
72.562943 - 77.887390
77.887390 - 82.212051
82.212051 - 85.724655
85.724655 - 90.049324
90.049324 - 95.373772
95.373772 - 101.929146
101.929146 - 110.000000
Mineralisation
Outline (MIM)

Zn EDA point Map



Zn R.B.F Prediction Map

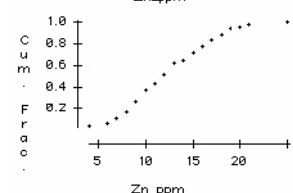
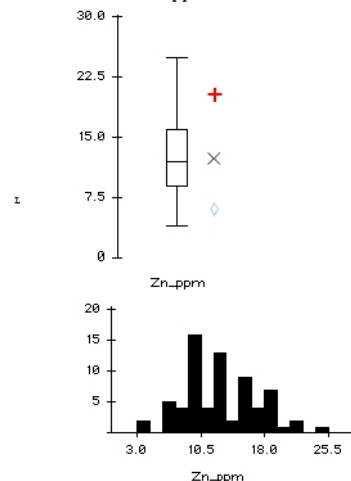


Zn

Bladder Saltbush

Summary Statistics

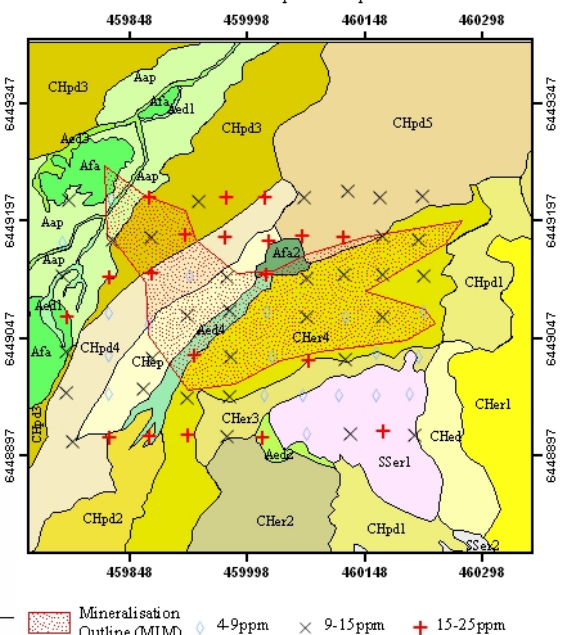
Count: 70
Mean: 12.63ppm
Median: 12ppm
Minimum: 4ppm
Maximum: 25ppm
Range: 21
Det. Limit: 1ppm



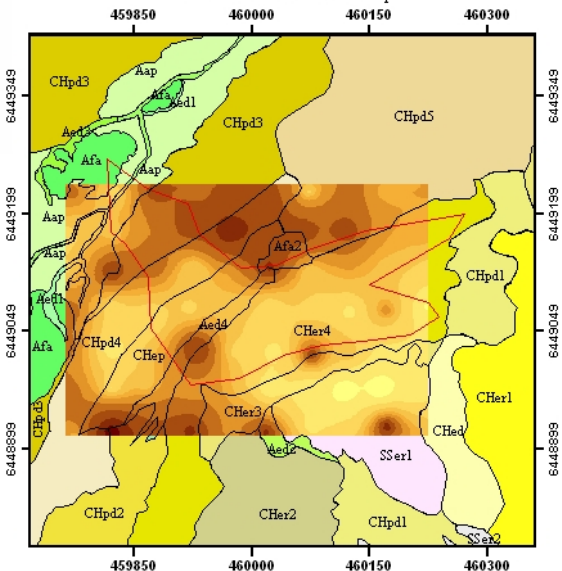
Legend

Zn (ppm)
Prediction Map
4.000000 - 7.047844
7.047844 - 9.245994
9.245994 - 10.831331
10.831331 - 11.974700
11.974700 - 12.799314
12.799314 - 13.942682
13.942682 - 15.528021
15.528021 - 17.726170
17.726170 - 20.774012
20.774012 - 25.000000
Mineralisation
Outline (MIM)

Zn EDA point Map

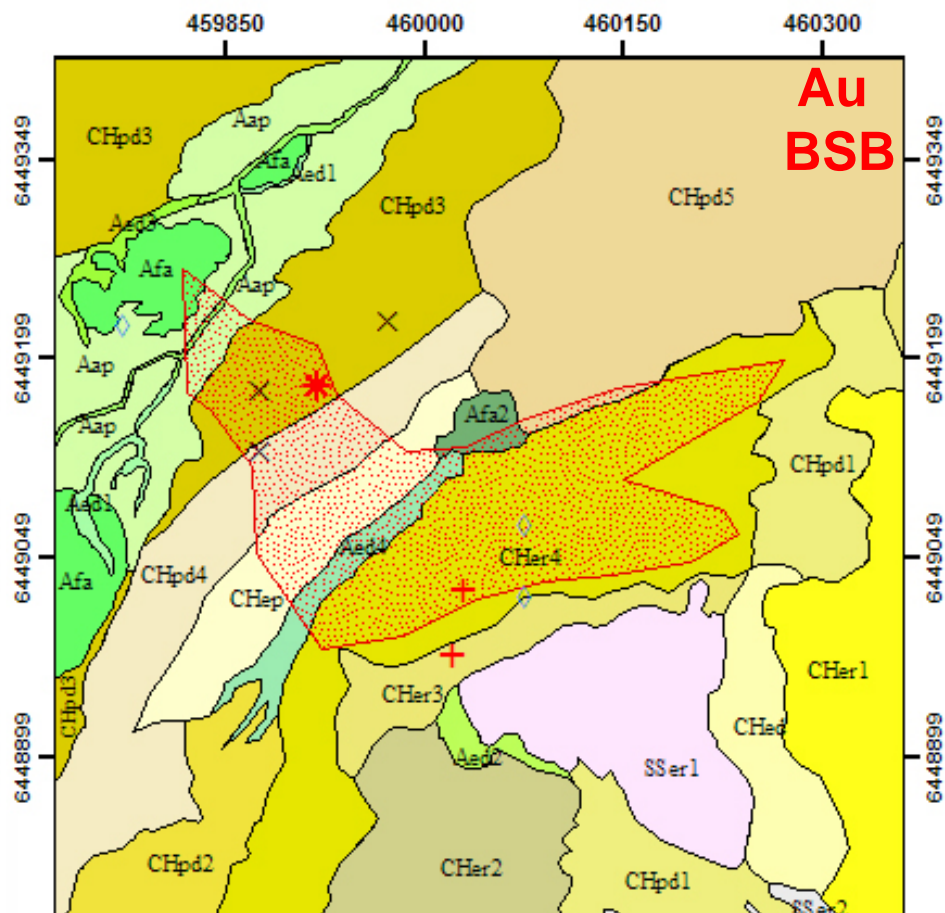
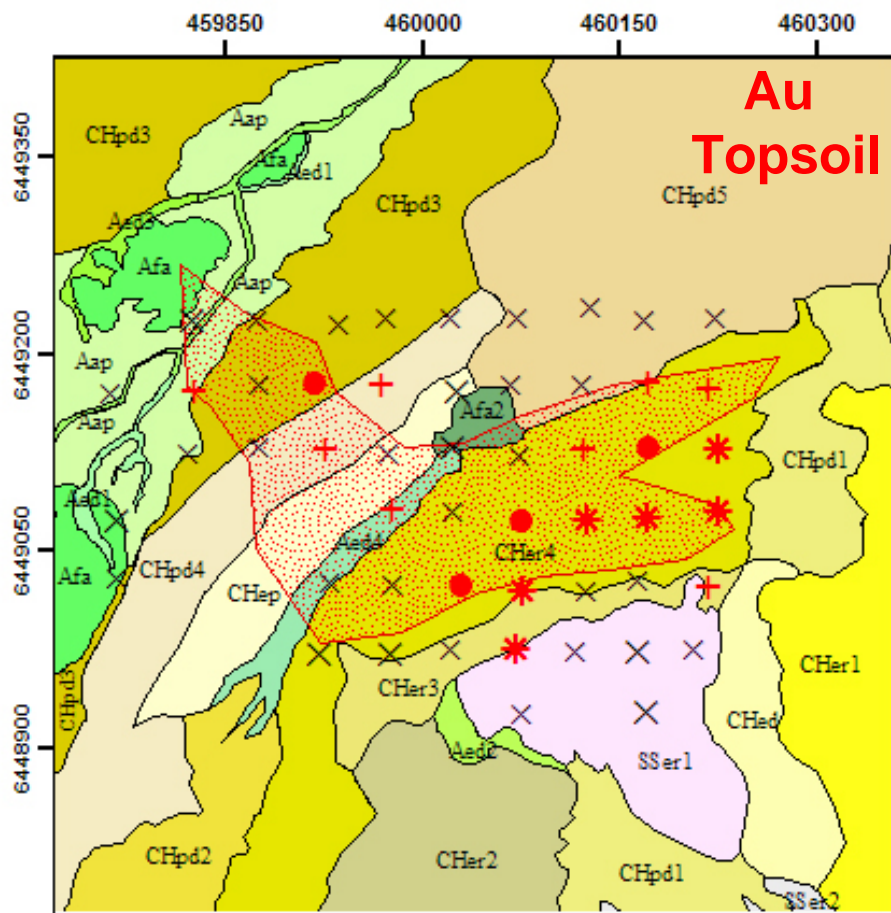


Zn R.B.F Prediction Map

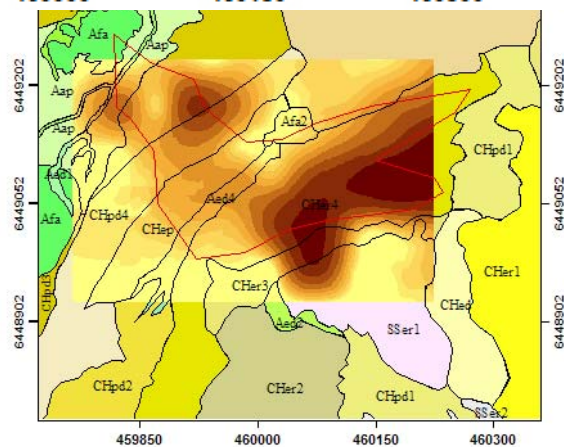
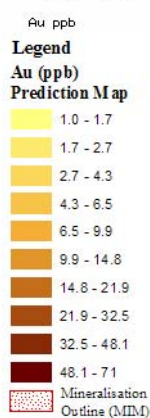


Quick Recap

- 1/2 mineralisation covered by alluvial and depositional landforms.
- Significant landscape effects on dispersion
- Significant material coming into and out of the area.
- How do we get any expression of mineralisation?



459850 460000 460150 460300



Legend

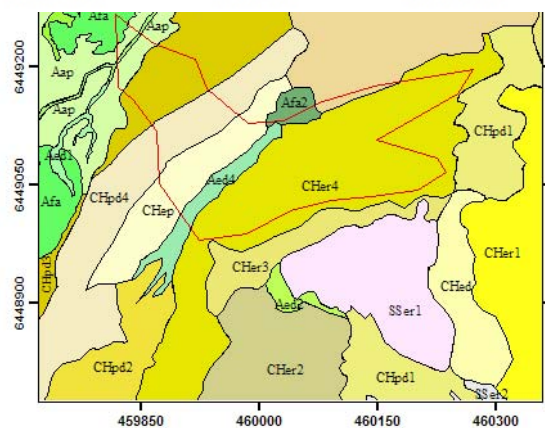
Au (ppb)

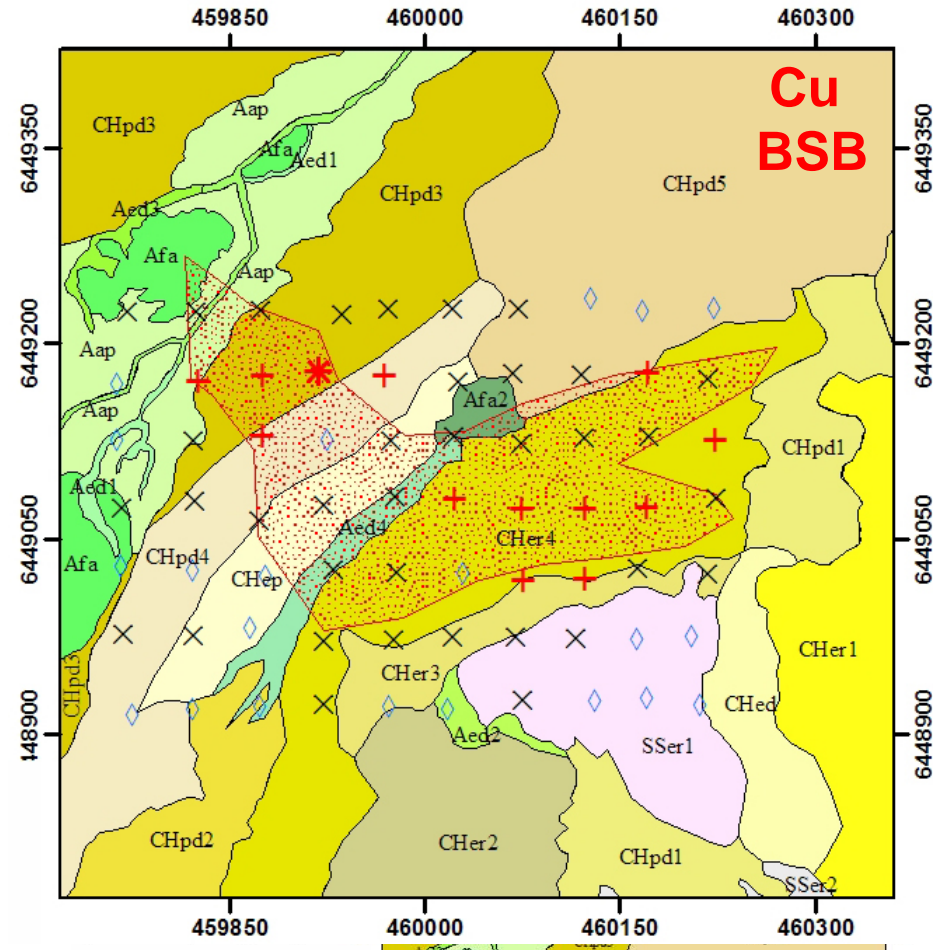
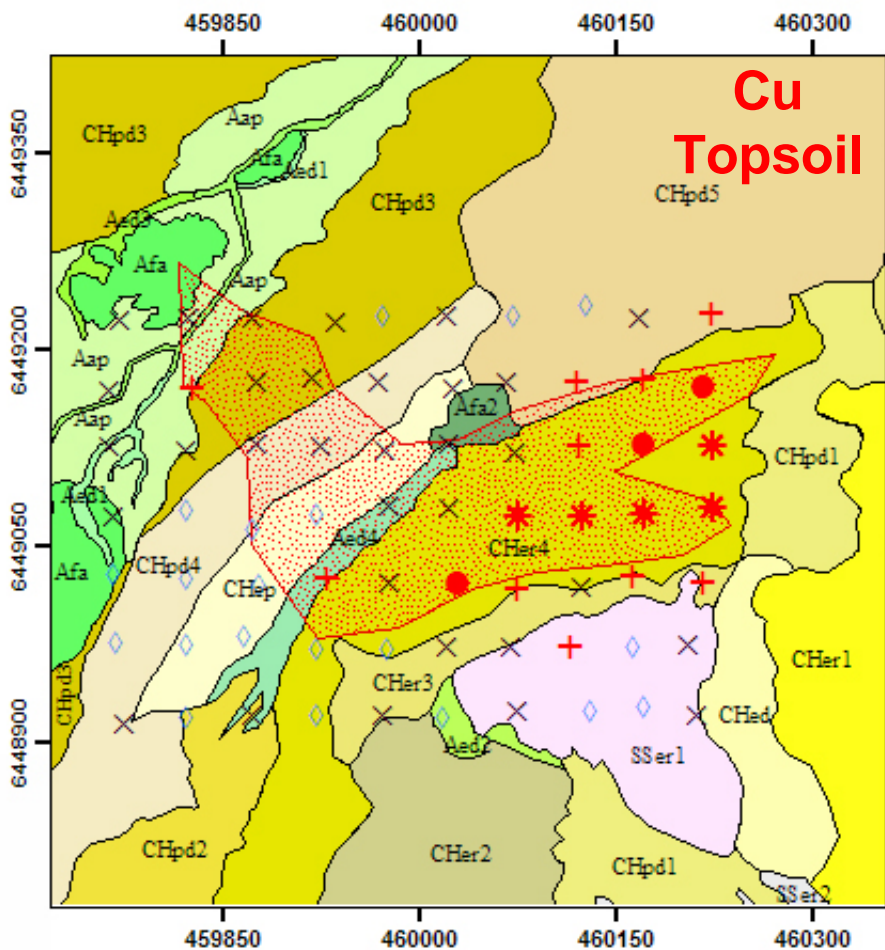
Prediction Map

Insufficient data for geostats

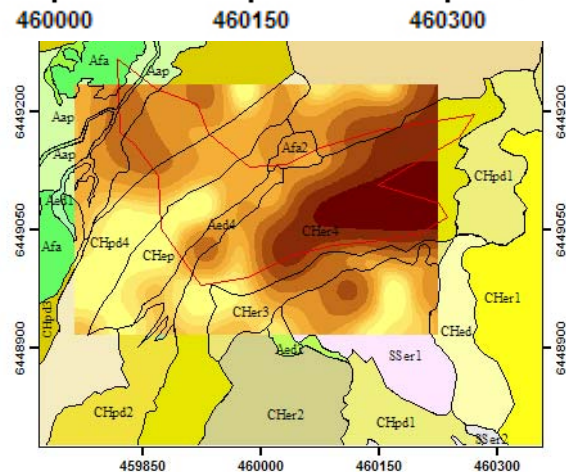
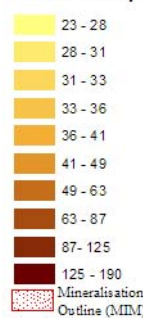
Mineralisation
Outline (MIM)

459850 460000 460150 460300

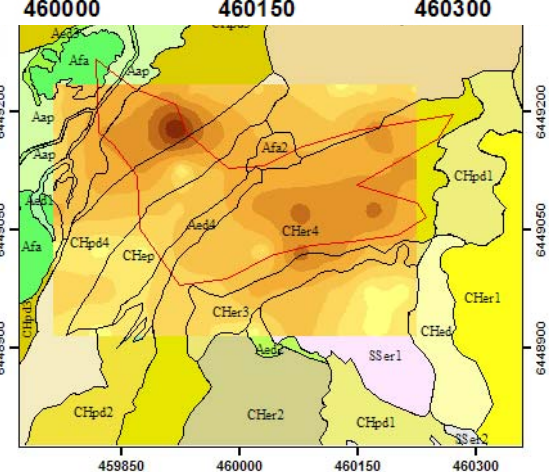
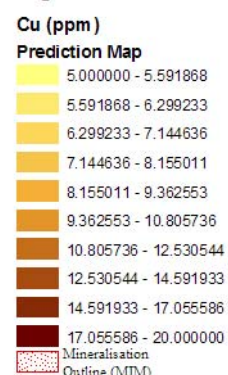




Legenda
Cu (ppm)
Prediction Map



Legend



Conclusions

- Biogeochemistry can be effectively used to detect mineralisation through transported cover
- Detailed R-L mapping highlights R-L controls on geochemistry and biogeochemistry
- Context matters at both Regional and local scales.
- Litter Dam mapping depicts surface dispersion vectors and relates closely to soil geochemistry and biogeochemistry results
- Applicable to both mineral exploration or environmental monitoring.