Developing an EIS for exploration targeting and decision making

Kenex
Creating opportunities in the spatial world

Exploration Targeting Workflow

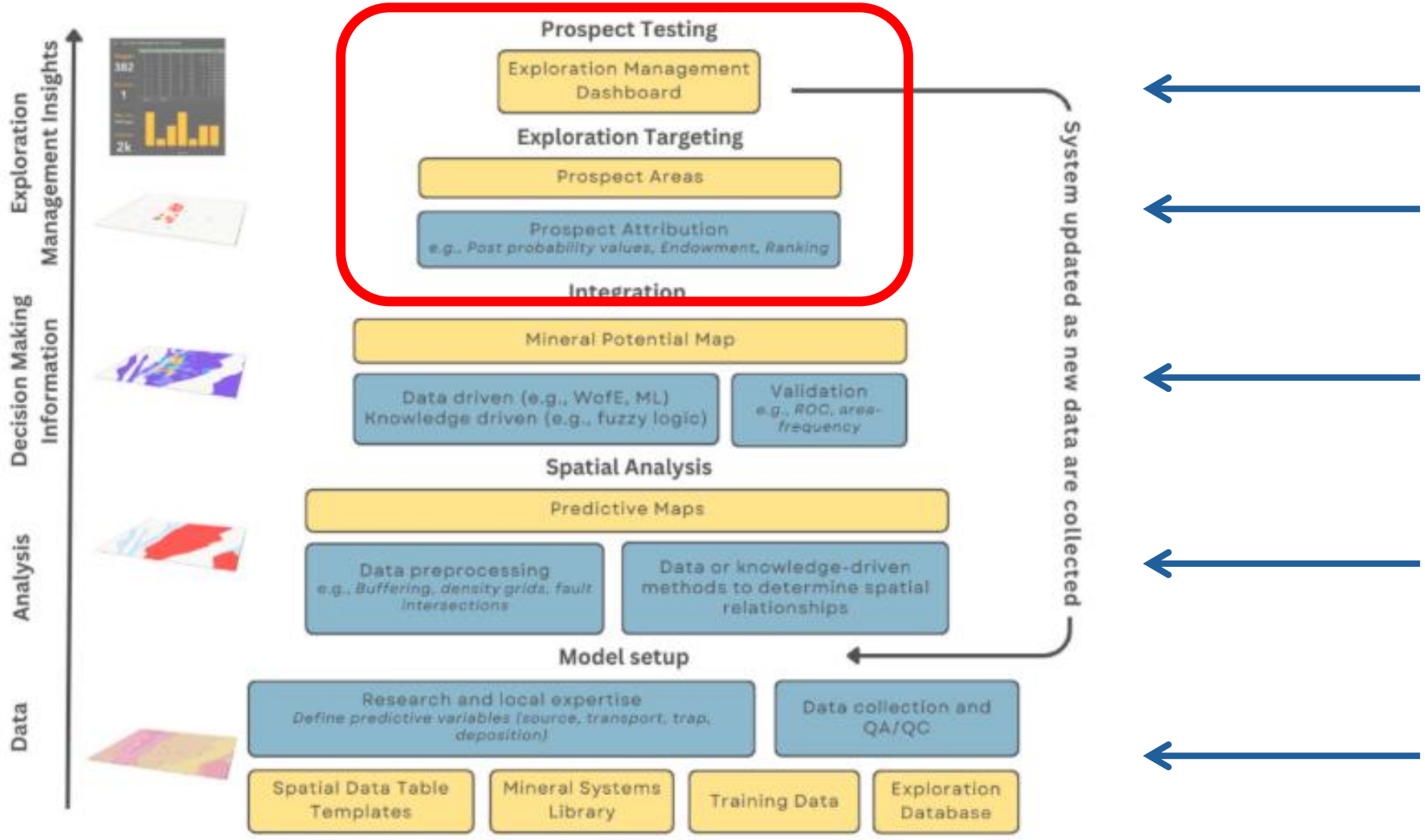

Fig. 1. Current EIS structure based on technology, software and workflows used to identify prospective areas.

Publication

Exploration Targeting

Prospect Areas

Prospect Attribution
e.g., Post probability values, Endowment, Ranking

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Ranking mineral exploration targets in support of commercial decision making: A key component for inclusion in an exploration information system

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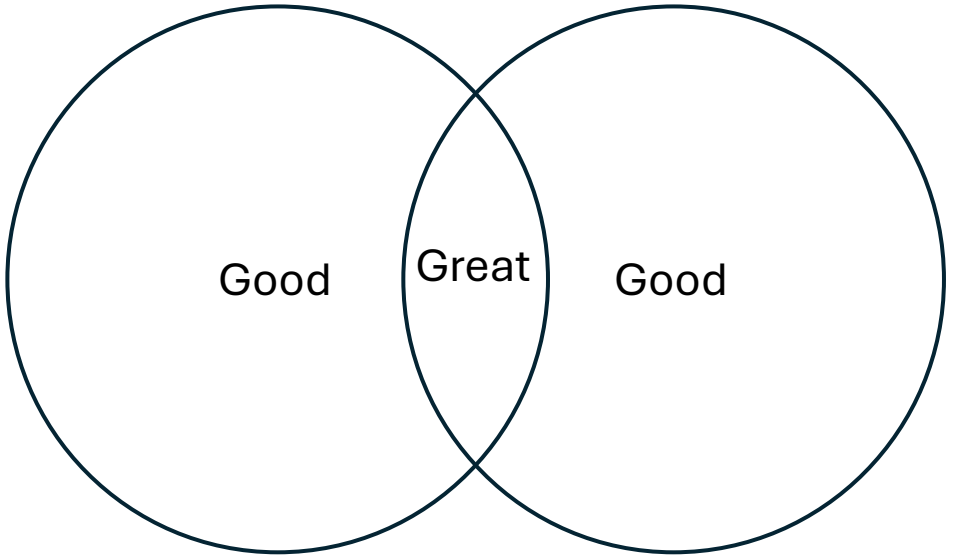
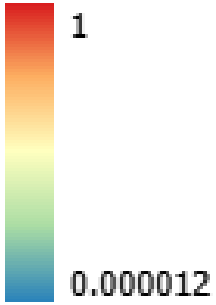
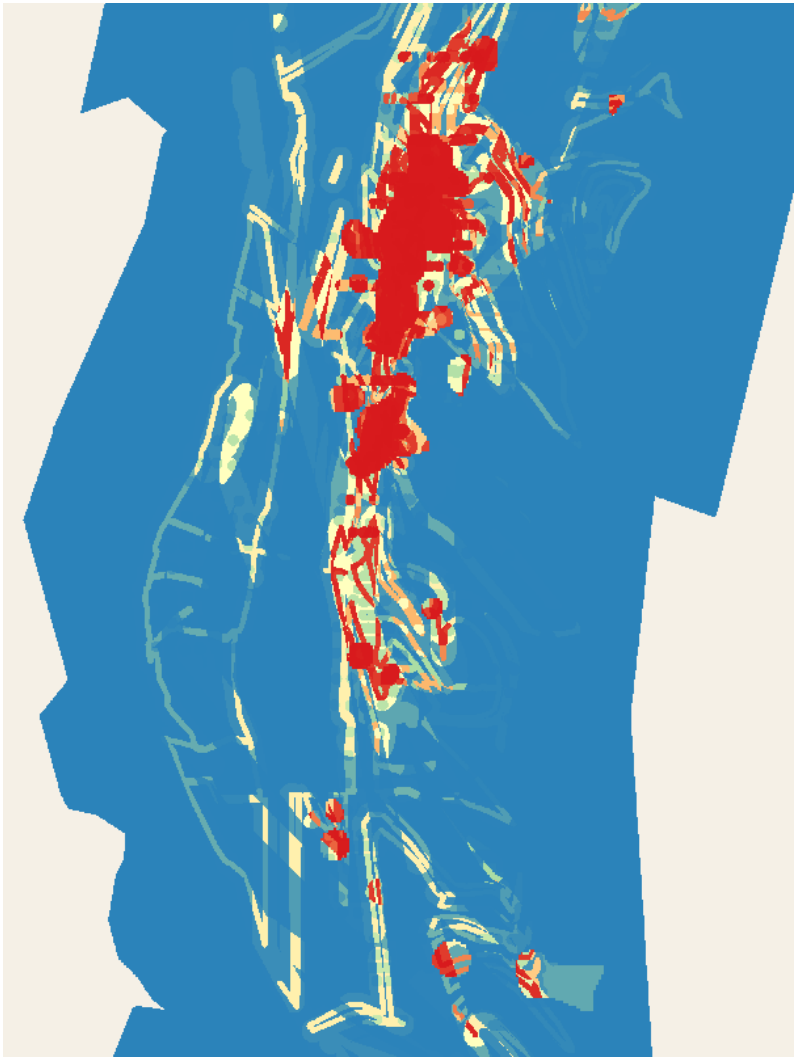
Post Probability Value

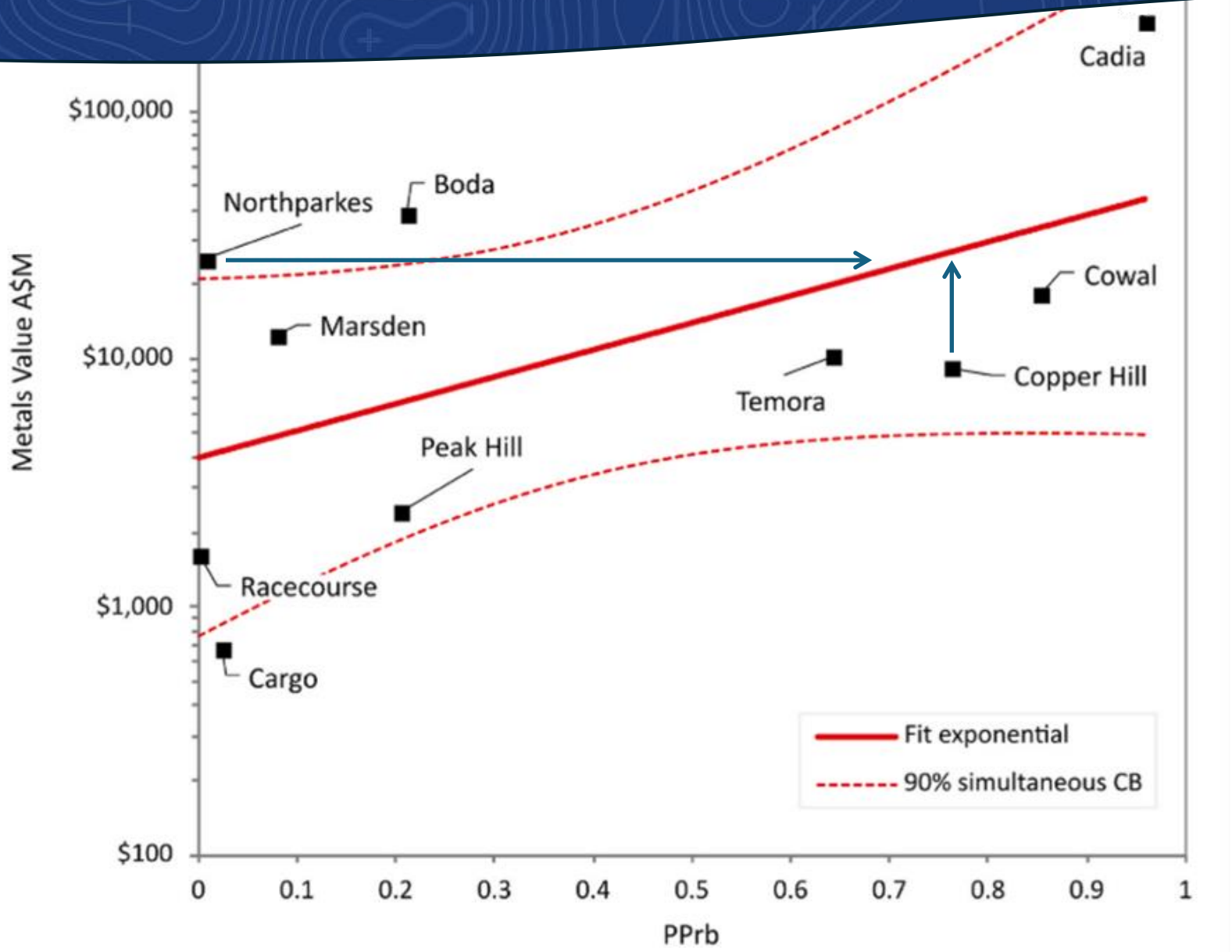
- Post Probability is a number that refers to the probability a given area contains a mineral deposit and is determined by the coincidence of weighted geological proxies for the modelled mineral system







Methodology



Northparkes:

- Missing information in the model

Copper Hill:

- Development Potential

Cost Model

Associated Costs:

- Resource and Reserve - Drilling
- Recovery - Metallurgy
- Feasibility Studies
- Capital Investment

Model Assumptions:

- Average exploration costs **A$105** per tonne Cu Eq
- AISC for Cadia and Northparkes is **A$4,500** per tonne Cu Eq, this is low and used for primary prospects.
- AISC average globally is **A$7,850** this was used for the smaller prospects

Model improvements

Cost model improvements:

- Proximity analysis

- More comprehensive datasets:
  - Govt data
  - Publicly available company data
  - Research institutes – Fraser Institutes annual mining survey

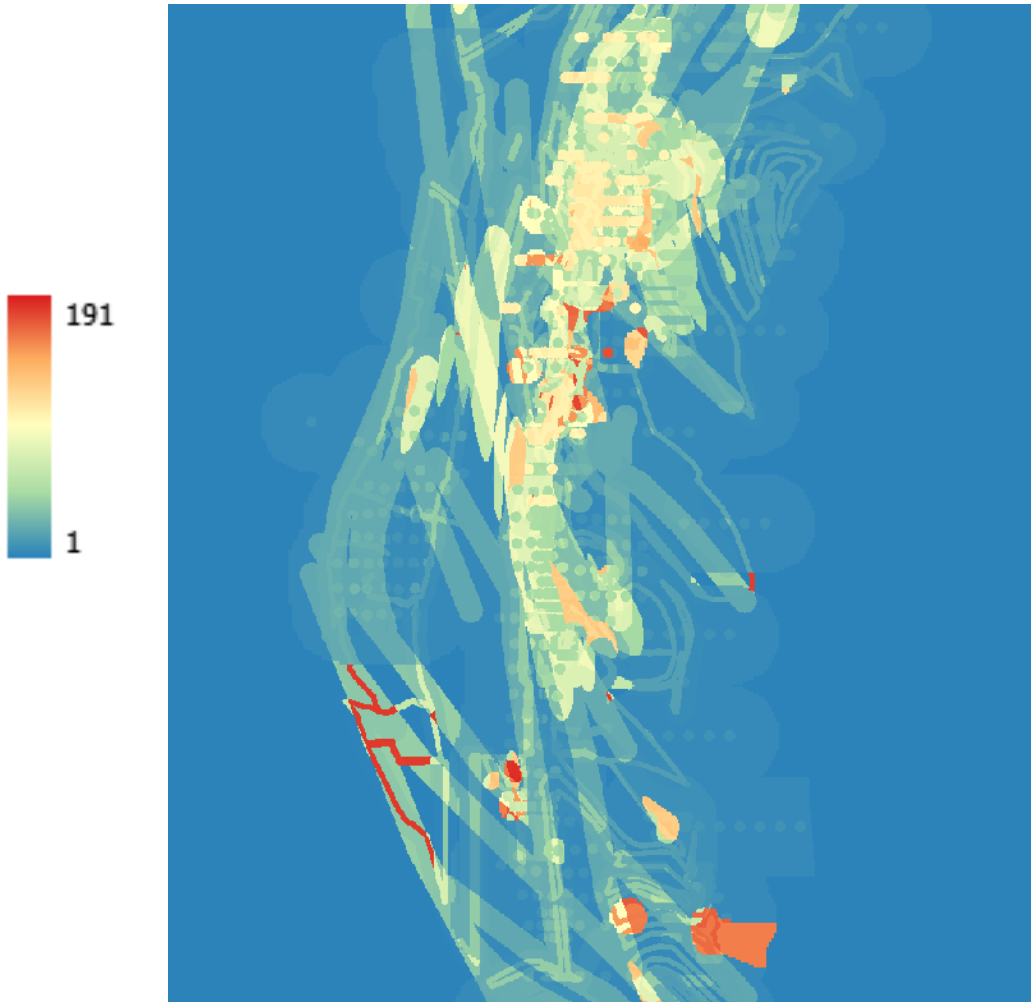
Australia	New South Wales	30 /86	23/62	33/84	27/77	47/76
	Northern Territory	8 /86	6/62	14/84	19/77	13/76
	Queensland	13 /86	13/62	18/84	16/77	15/76
	South Australia	19 /86	9/62	10/84	7/77	6/76
	Tasmania	33 /86	50/62	19/84	63/77	22/76
	Victoria	48 /86	47/62	39/84	56/77	43/76
	Western Australia	4 /86	2/62	1/84	4/77	1/76
Oceania	Fiji*	31 /86	**	**	**	**
	Indonesia	56 /86	**	50/84	74/77	27/76
	New Zealand	43 /86	**	72/84	61/77	42/76
	Papua New Guinea	57 /86	54/62	56/84	65/77	54/76
	Philippines	72 /86	**	57/84	**	**
	Solomon Islands*	84 /86	**	**	**	**

Model improvements

Unique Conditions Grid

The unique conditions grid helps understand which variables were used where in the model and can assist us with categorising our targets and identifying areas of opportunity

E.g targets with favourable structural mapping and geophysics but lacking drilling or sampling.



EIS Viewer

kenex.maps.arcgis.com/apps/dashboards/b3bb082de0e64c84a1cec9be182b9707

Finish update

Legend:

Free Targets

FinalRank

> 97

61.7

< 26

Untested Targets

FinalRank

> 112

83.9

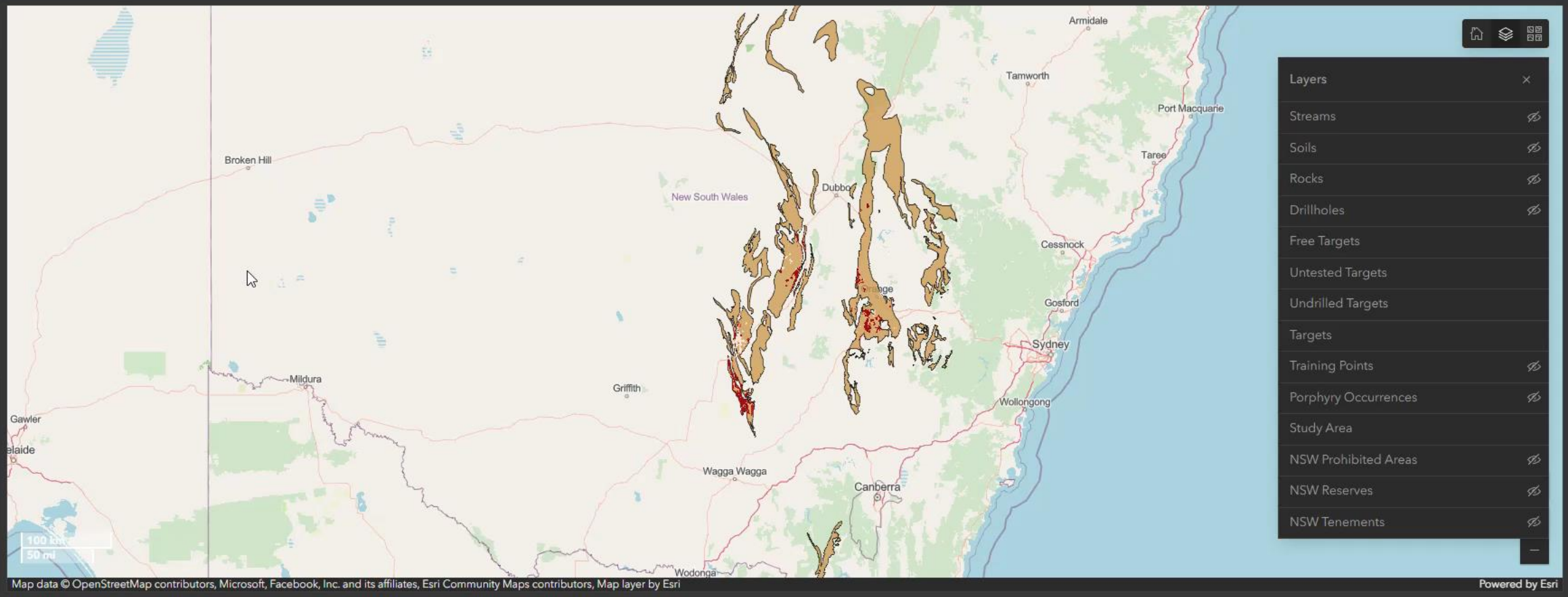
< 56

Undrilled Targets

FinalRank

> 104

70



FinalRank	ModelRank	PARank	MAMVRank	GBMVRank	CostRank	MaxPpbr	MeanPpbr	DHNum	RCNum	SoilsNum	SSNum	SpatialV1	SpatialV2	SpatialV3	SpatialV4	SpatialV5	SpatialV6
1	1	1	1	1	9	0.96	0.85	9	1	0	7	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast present	Fault bend, jog, splay pre
2	3	3	1	1	9	0.96	0.81	15	0	0	16	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast present	Fault bend, jog, splay pre
3	2	2	1	1	9	0.96	0.81	0	0	0	6	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast present	Fault bend, jog, splay pre
4	4	4	2	2	7	0.85	0.85	0	28	0	0	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast absent	Fault bend, jog, splay pre
5	4	4	2	2	7	0.85	0.85	0	1	0	0	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast absent	Fault bend, jog, splay pre
5	4	4	2	2	7	0.85	0.85	0	0	0	0	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast absent	Fault bend, jog, splay pre
6	8	6	2	3	7	0.77	0.77	0	0	0	0	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault present	Reactivity contrast present	Fault bend, jog, splay pre
7	9	7	2	3	7	0.76	0.76	0	0	0	4	Benambran Cycle intrusion present	Oxidised and K-rich magma present	Shoshonitic/High-K volcanics present	Benambran contracton fault absent	Reactivity contrast present	Fault bend, jog, splay pre

All Targets | Undrilled Targets | Untested Targets | Free targets

Exploration Management Dashboard

https://eis-viewer.kenex.com.au/