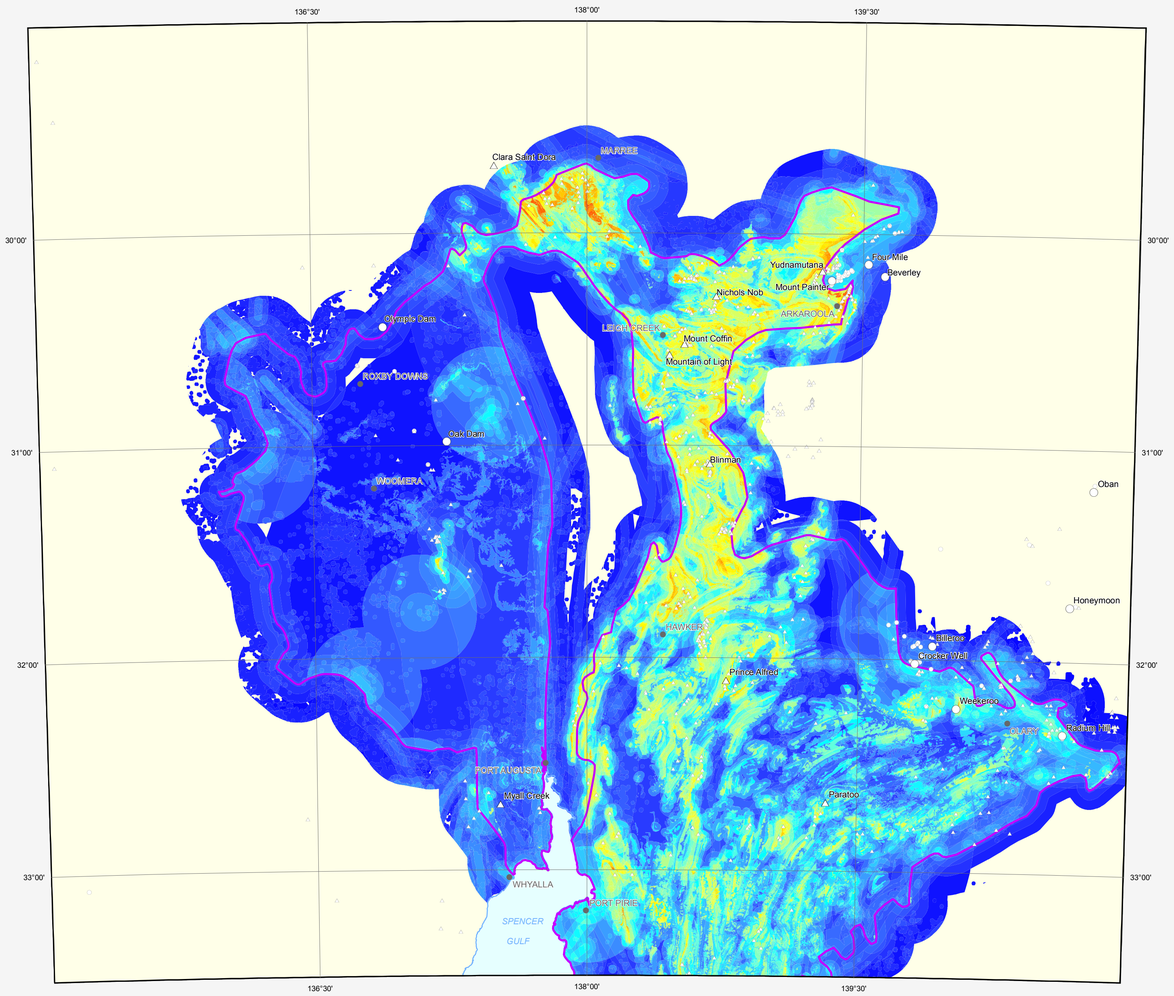
SOUTH AUSTRALIA ENERGY SYSTEMS ASSESSMENT

COPPER-URANIUM PROSPECTIVITY OF THE ADELAIDE RIFT SYSTEM (NORTH)



Copper-Uranium Prospectivity of the Adelaide Rift System

Low — High

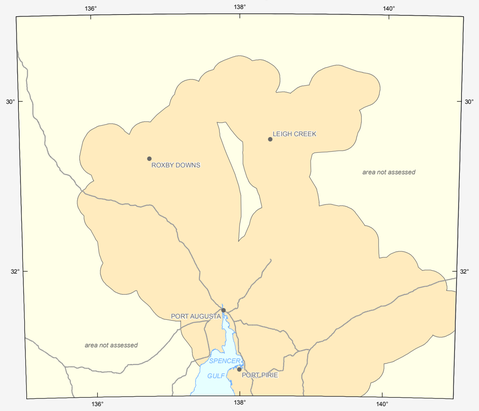
Potential for copper-uranium deposits based on summation and normalisation of mineral system parameters shown in inserts. See text for more information and references.

0 — 100 — 200 km

Transverse Mercator Projection; Central Meridian 138° E; Geocentric Datum of Australia (GDA94)

- *Uranium deposit*
- *Uranium occurrence*
- *Copper deposit*
- *Copper occurrence*
- *Adelaide Rift System boundary*

Reliability



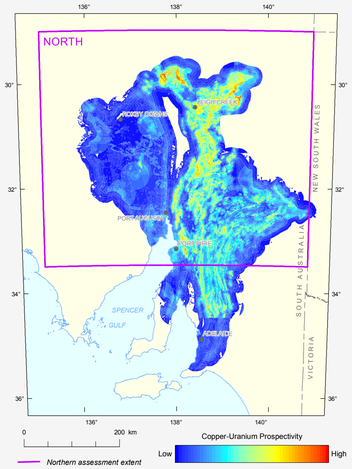
Data coverage displaying geographical data completeness. Note: Data coverage is separate to data confidence.

0 — 200 km

Highway

All data

Prospectivity of the complete study area



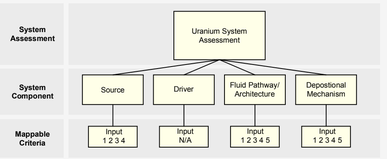
0 — 200 km

Northern assessment extent

Copper-Uranium Prospectivity

Low — High

Prospectivity Assessment Workflow



Energy Assessment Prospectivity
The uranium system assessment is a function of four key mineral system components a) source, b) driver, c) fluid pathway/architecture, and (d) depositional mechanism. Each mineral system component is comprised of a varying number of inputs specific to the targeted mineral system assessment. This assessment is confined to the Adelaide Rift System.

Source
Potential for sources of uranium and other metals, mineralising fluids and other components needed for ore transport. The source weighting is calculated by combining the constituent mappable criteria listed below and normalised to the total number of mappable criteria. The input data are:

1) Distribution of uranium-rich rocks (U)
2) Distribution of felsic volcanic rocks (U)
3) Distribution of mafic volcanic rocks (Cu)
4) Presence of evaporate minerals and stromatolites indicating production of basinal brines (fluids and ligands)

Driver
Prospectivity based on energy gradients that will mobilise sufficient quantities of ore-bearing fluids to the site of deposition. The driver weighting is calculated by combining the constituent mappable criteria listed below and normalised to the total number of mappable criteria. No criteria were used for this systems component.

Fluid Pathway/Architecture
Potential for favourable lithologies and structures that will enable movement of fluids to the site of ore deposition. The fluid pathway/architecture weighting is calculated by combining the constituent mappable criteria listed below and normalised to the total number of mappable criteria. The input data are:

1) Distribution of basal unconformity between Adelaide Fold Belt and basement
2) Distribution of detailed mapped faults (at 1:100 000 scale)
3) Distribution of regional interpreted faults (from magnetic and gravity data)
4) Distribution of potential sedimentary aquifers
5) Distribution of diapirs

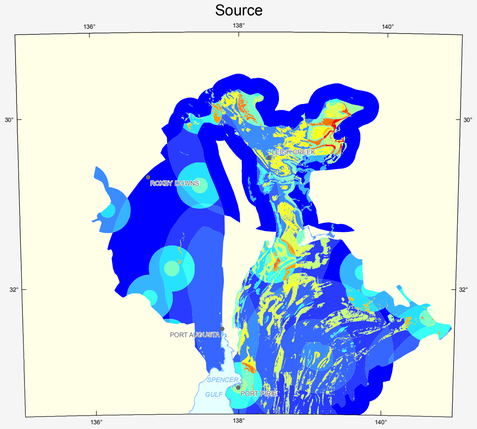
Depositional Mechanism
Potential for favourable lithologies and structures to focus fluids and deposit uranium and other metals via physical and/or chemical processes. The depositional mechanism weighting is calculated by combining the constituent mappable criteria listed below and normalised to the total number of mappable criteria. The input data are:

1) Evidence of uranium deposition
2) Thorium enrichment which may indicate uranium deposition at depth
3) Distribution of redox gradients as indicated by carbonaceous rocks
4) Distribution of redox gradients as indicated by iron-rich rocks
5) Distribution of chemical gradients as indicated by carbonate-rich rocks

Reliability Index
Data coverage displaying geographical data completeness. Note: Data coverage is separate to data confidence.

MAP LOCALITY

Source



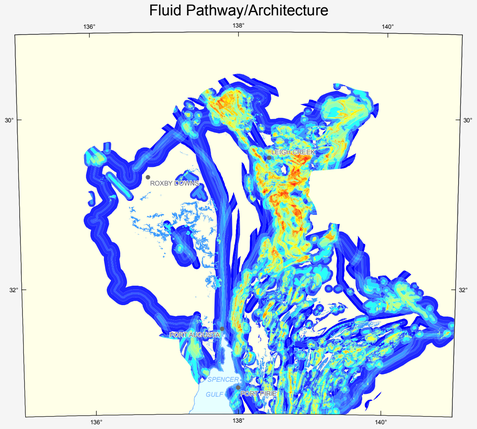
Prospectivity based on sources of uranium and copper, mineralising fluids and other components needed for ore transport.

0 — 200 km

Source Prospectivity

Low — High

Fluid Pathway/Architecture



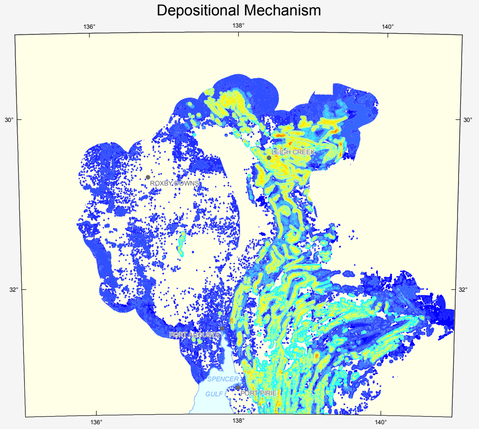
Prospectivity based on favourable lithologies and structures that will enable movement of fluids to the site of ore deposition.

0 — 200 km

Fluid Pathway/Architecture Prospectivity

Low — High

Depositional Mechanism



Prospectivity based on favourable lithologies and structures to focus fluids and deposit uranium and other metals via physical and/or chemical processes.

0 — 200 km

Depositional Mechanism Prospectivity

Low — High

Compiled by D.L. Huston, Geoscience Australia
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AUGUST 2011

PLATE 3.8