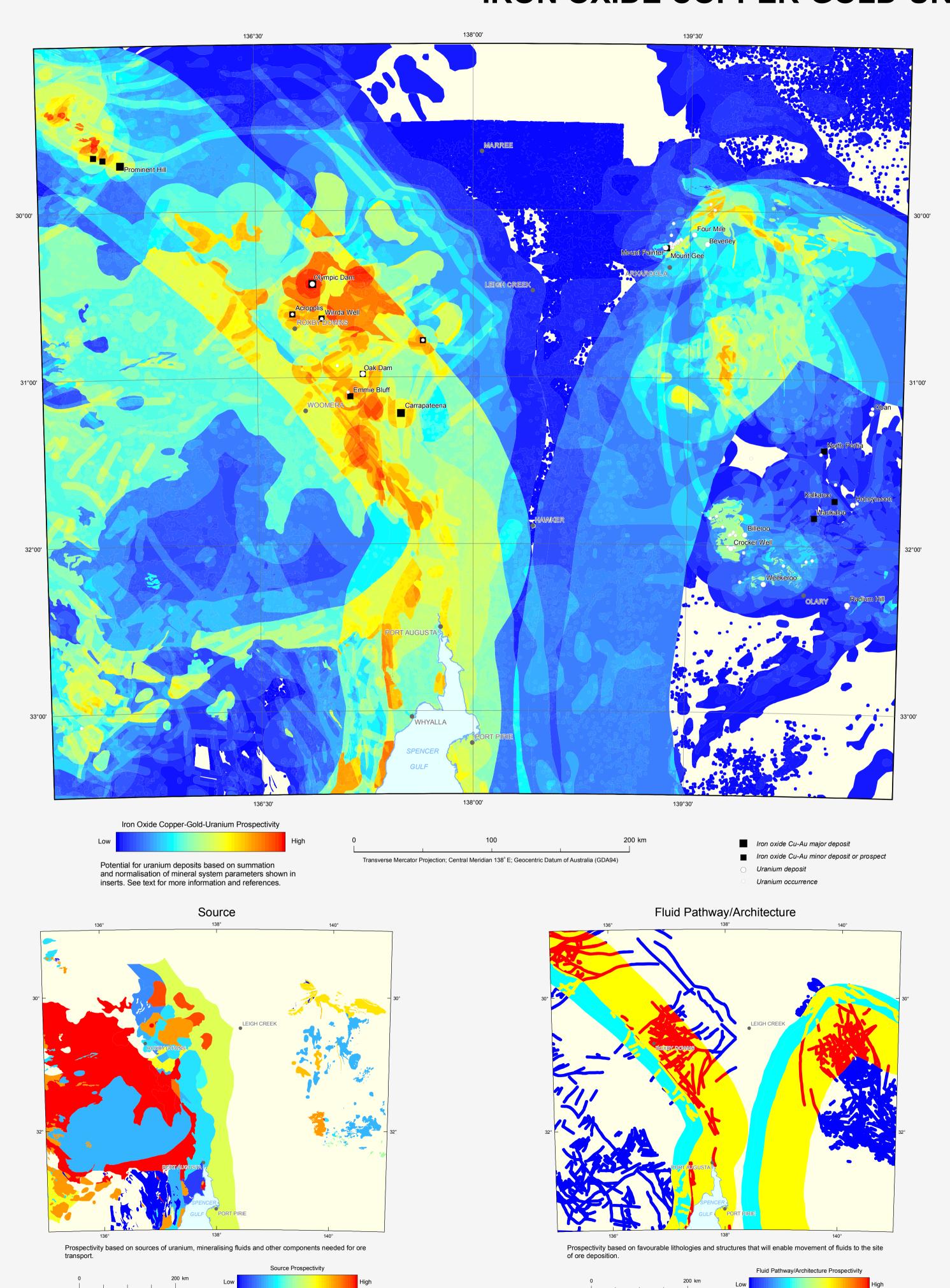
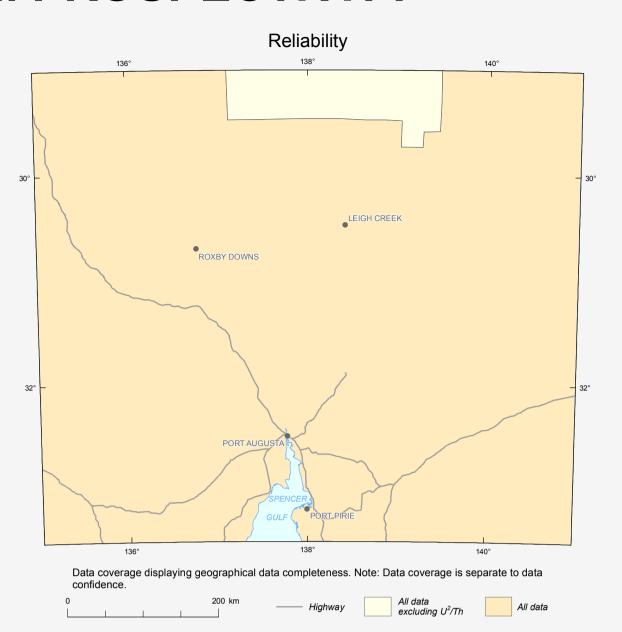
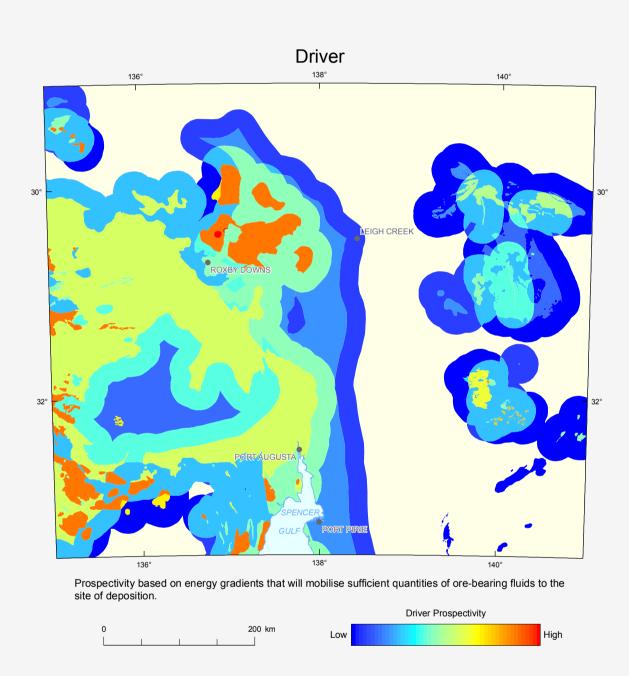
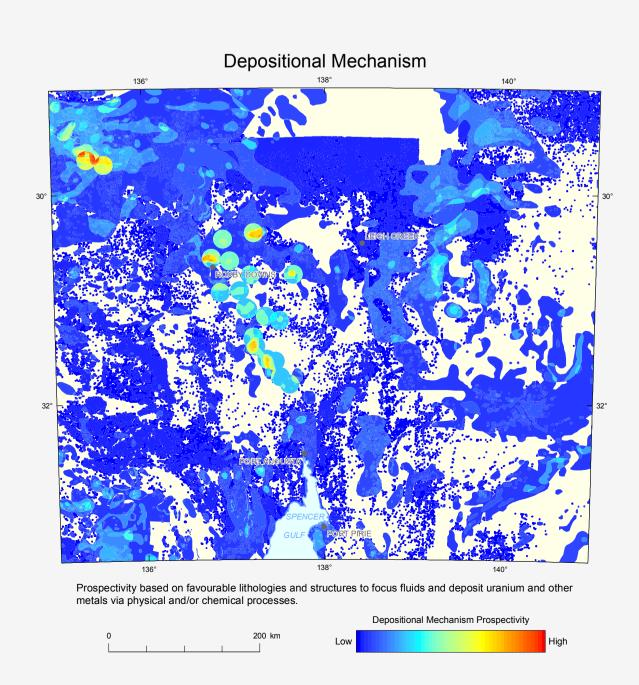
SOUTH AUSTRALIA ENERGY SYSTEMS ASSESSMENT

IRON OXIDE COPPER-GOLD-URANIUM PROSPECTIVITY

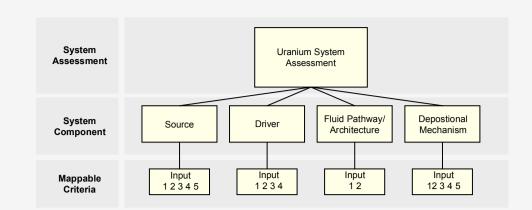








Prospectivity Assessment Workflow



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.

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) Presence of rift basin as a source of iron, brines and sulfur
- 2) Presence of igneous rocks with high uranium content 3) Presence of igneous rocks with high zircon saturation temperature
- 4) Presence of mafic or ultramafic intrusions and volcanics 5) Presence of igneous rocks with high fluorine

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. The input data are:

- 1) Presence of textural features indicating fluid exsolution
- 2) Presence of breccias in intrusive rocks 3) Presence of large volume high temperature crustal melts
- 4) Location of mafic and ultramafic intrusions and volcanics

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

1) Distribution of fluid flow along permeable structures of Mesoproterozoic age or older 2) Location of crustal domain boundaries including margin of Archean

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:

- Direct evidence of elevated uranium
 Presence of hematite as indicated from inversion modelling and magnetic and gravity data
- 3) Presence of magmatite as indicated from inversion modelling and magnetic and gravity data 4) Presence of ironstone, iron formations; dominant and present

5) Presence of IOCG alteration, observed hematite-sericite-chlorite-carbonates Data coverage displaying geographical data completeness. Note: Data coverage is separate to



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Government of South Australia Primary Industries and Resources SA

SOUTH AUSTRALIA ENERGY SYSTEMS ASSESSMENT IRON OXIDE COPPER-GOLD-URANIUM **PROSPECTIVITY**

AUGUST 2011

PLATE 3.3