



Australia-China Mineral Exploration Investment 2011



Australian Government

Geoscience Australia

Australian mining and mineral exploration in 2011: A national perspective

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Geoscience Australia



Presentation Outline

- Current state of the Australian minerals sector
- Overview of advanced development projects
- Trends in mineral exploration and discovery
- Copper and uranium exploration prospects in Australia
- Government initiatives



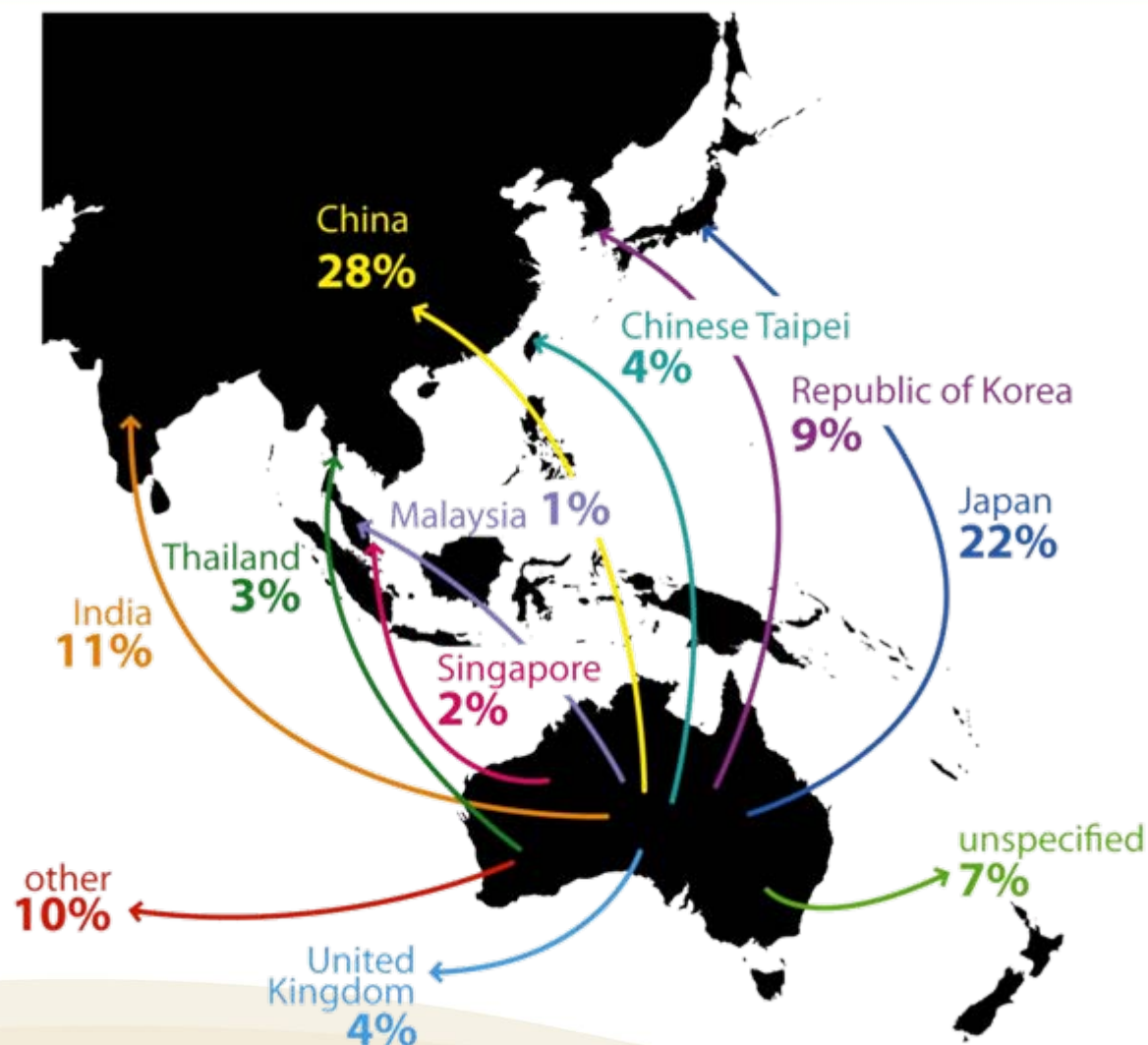
Australian Minerals Overview

Commodity	Unit	Mine Production		Exports	
		2010	% Change	2010	% Change
Bauxite	Mt	68	4	8	25
Black Coal	Mt	356	2	306	12
Iron Ore	Mt	433	10	402	11
Manganese Ore	Mt	6.5	46	5.5	18
Copper	Mt	0.87	2	0.85	7
Lead	Mt	0.63	11	0.66	2
Zinc	Mt	1.5	2	1.5	5
Nickel	Mt	0.17	2	0.21	-1
Gold	t	260	17	332	-8

Source: ABARES



Australian Resources Exports 2009-10



Source: ABARES





Australian Mineral Development Projects

	Committed*	Less Advanced**
Coal	19	67
Iron Ore	11	31
Bauxite	0	5
Gold	8	34
Copper	4	14
Lead-Zinc-Silver	3	16
Nickel	3	17
Tin	0	3
Vanadium	1	1
REE	1	2
Uranium	1	12

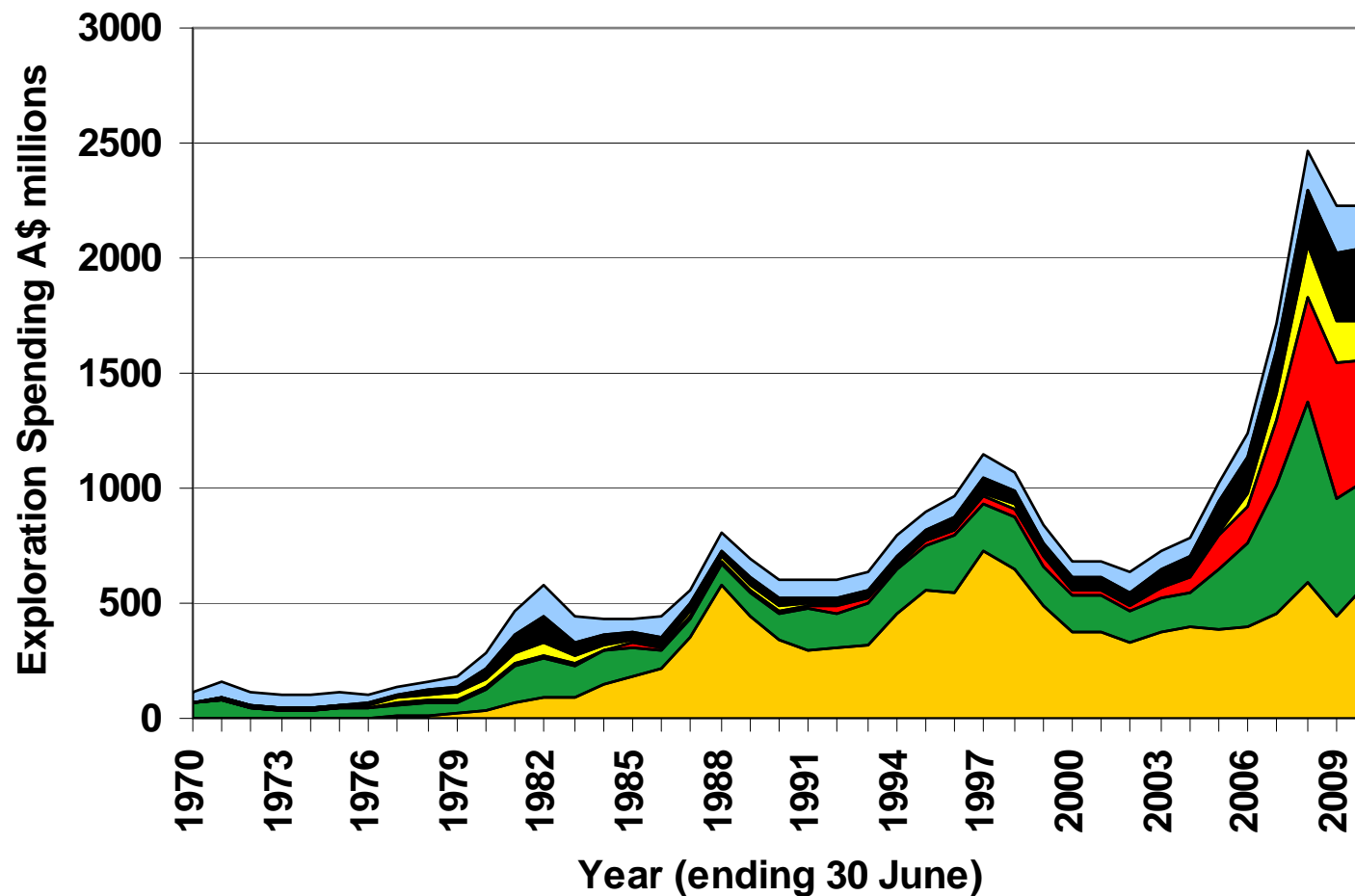
* Under construction or committed

**Feasibility study or later but not yet committed.

Source: ABARES



Australian Mineral Exploration Expenditure



Gold Base Metals Iron Ore Uranium Coal Others

Source: Australian Bureau of Statistics



Australia's Mineral Resources: Selected Recent Discoveries



Year	Deposit/Project	Commodities
2000	Hera	Au, Zn, Pb, Cu, Ag
2001	Prominent Hill	Cu, Au
2002	Jaguar	Cu, Pb, Zn, Ag,
2004	Trident	Au
2004	Jacinth & Ambrosia	Mineral sands
2005	Tropicana	Au
2005	Four Mile	U
2005	Tripitaka	Mineral sands
2005	Carrapateena	Cu, Au
2005	Caliwingina	Fe
2006	Mount Carlton	Au, Ag, Cu
2006	McPhillamys	Au
2006	Rocklands	Cu
2007	Spotted Quoll	Ni
2008	Merlin	Mo, Re
2008	Bentley	Cu, Pb, Zn, Ag, Au
2009	DeGrussa	Cu, Au, Ag



Typical Australian Resource Growth 1977-2010

Commodity	Unit	Production	Resource Growth*
Iron ore	Mt	5,000	34,000
Black coal	Mt	8,000	177,000
Gold	t	6,000	19,000
Copper	Mt	16	132
Nickel	Mt	5	47
Zinc	Mt	31	67

* All categories: - Measured + Indicated + Inferred Resources

Mt = million tonnes; t = tonnes

Sources: Resources- Geoscience Australia;
Production - Australian Bureau of
Agricultural and Resource Economics



Australian Copper Overview



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Geoscience Australia

RESOURCES in 2010

- Total resources 132 Mt Cu

EXPLORATION in 2010

- A\$261 million
 - ✓ March Quarter 2011 A\$ 71 million (51% higher than March Qtr 2010)

PRODUCTION in 2010

- Mine production 870,000 t Cu
 - ✓ March Quarter 2011 234,000 t Cu (27% higher than March Qtr 2010)

EXPORTS in 2010

- 845,000 t Cu
 - ✓ March Quarter 2011 209,000 t Cu (18% higher than March Qtr 2010)



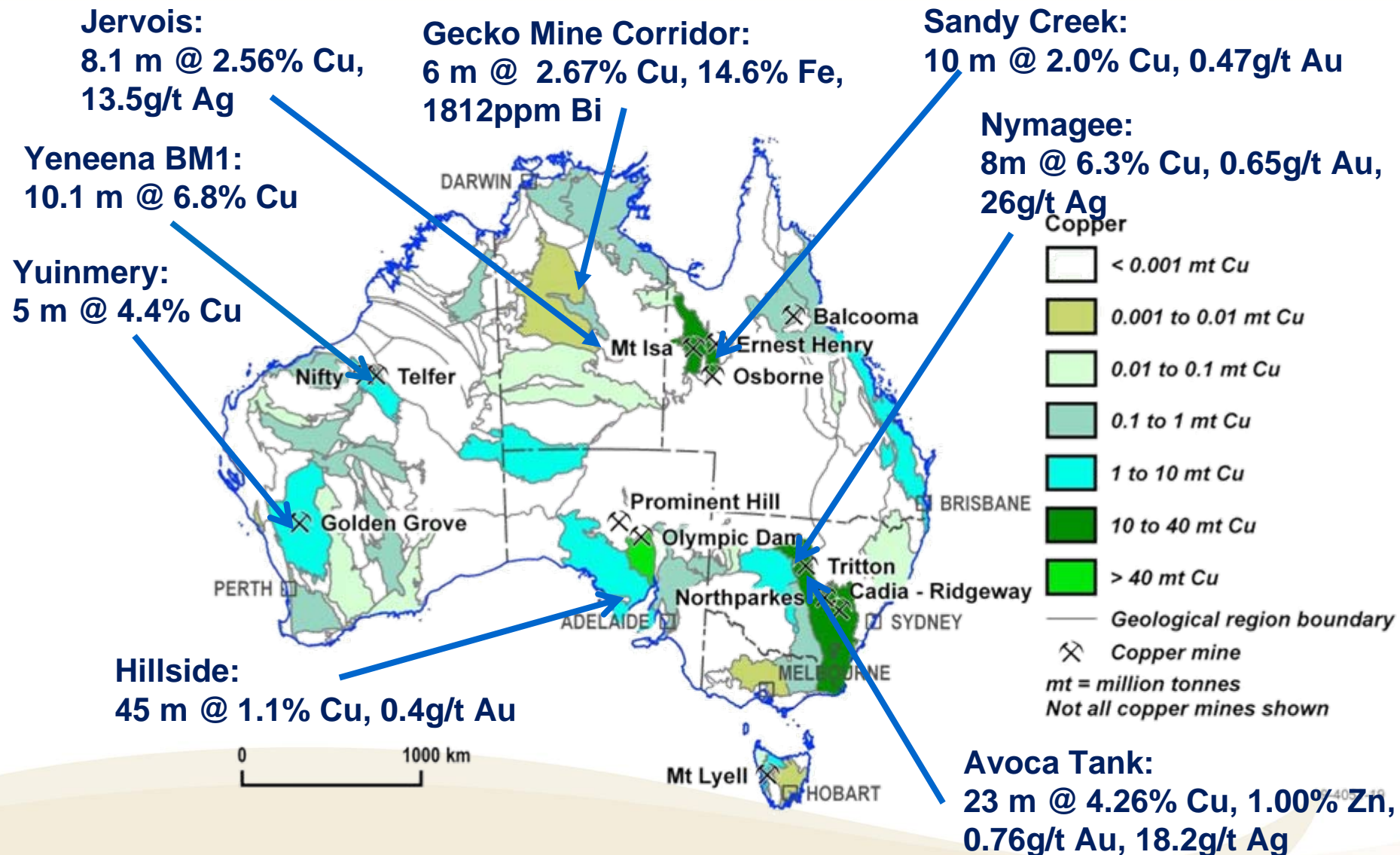
Production of the first ore at the new DeGrussa copper-gold mine, WA, July 2011. Sandfire Resources Ltd.



Australia's Copper Resources & Selected Drill Results

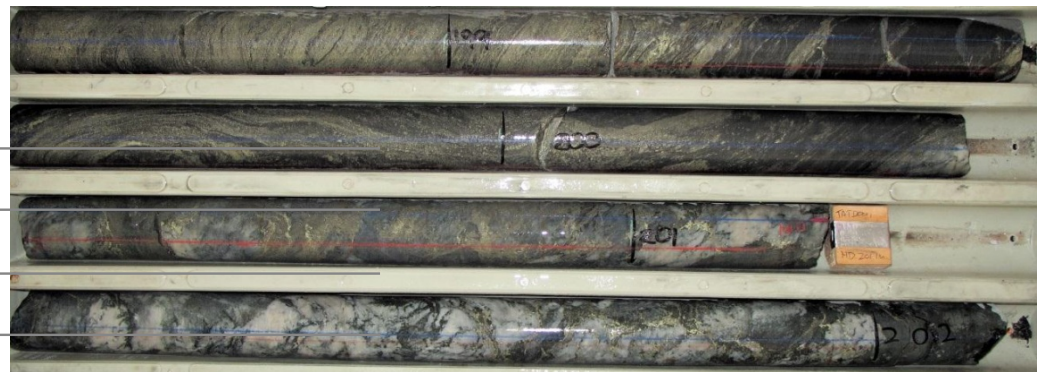
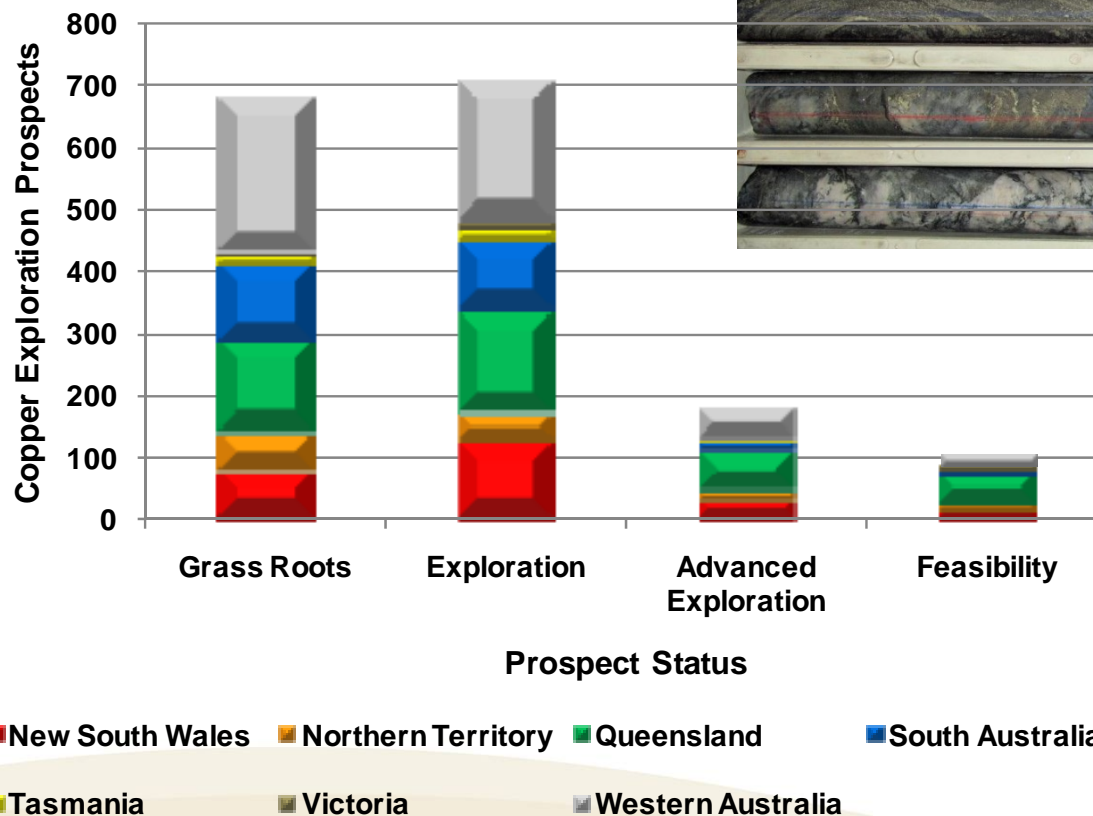


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Australia's Copper Exploration Prospects

Over 1680 exploration prospects
Over 470 companies



Core from intersection of 193 m which included 22 m @ 4.26% Cu, 0.76g/t Au, 18g/t Ag from the Avoca Tank prospect, NSW. Straits Resources Ltd.

Source: Intierra



Australian Uranium Overview

EXPLORATION 2010-11*

- **A\$214 million** (up from \$169m)

RESOURCES 2010

- **Total resources: 1.7 Mt U**

PRODUCTION in 2010-11*

- **7,322 t U₃O₈**

EXPORTS in 2010-11*

- **6,950 t U₃O₈**



Source: NuPower Resources Ltd;
Eva prospect, Northern Territory

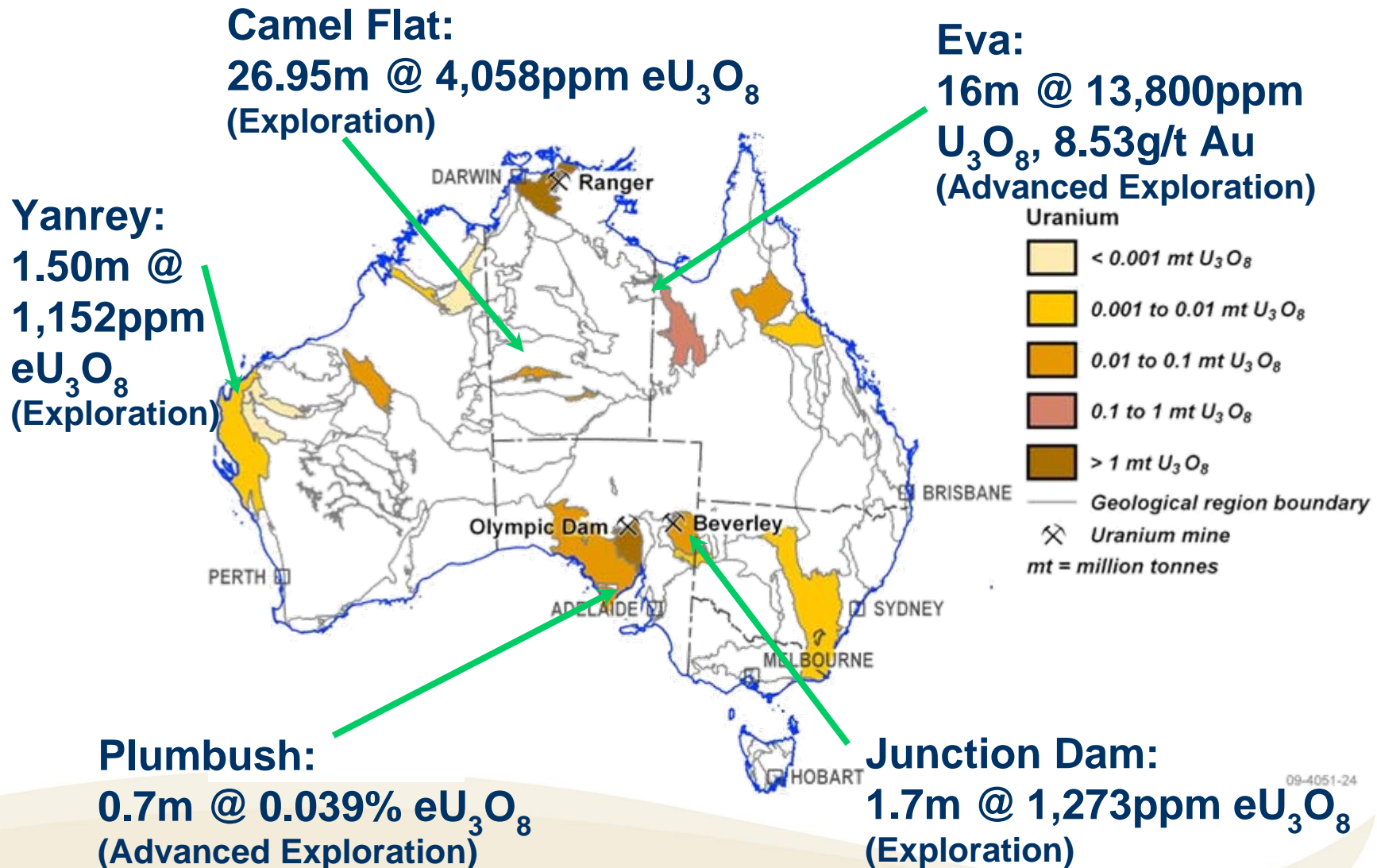
* Year ending 30 June 2011



Australia's Uranium Resources & Selected Drill Results



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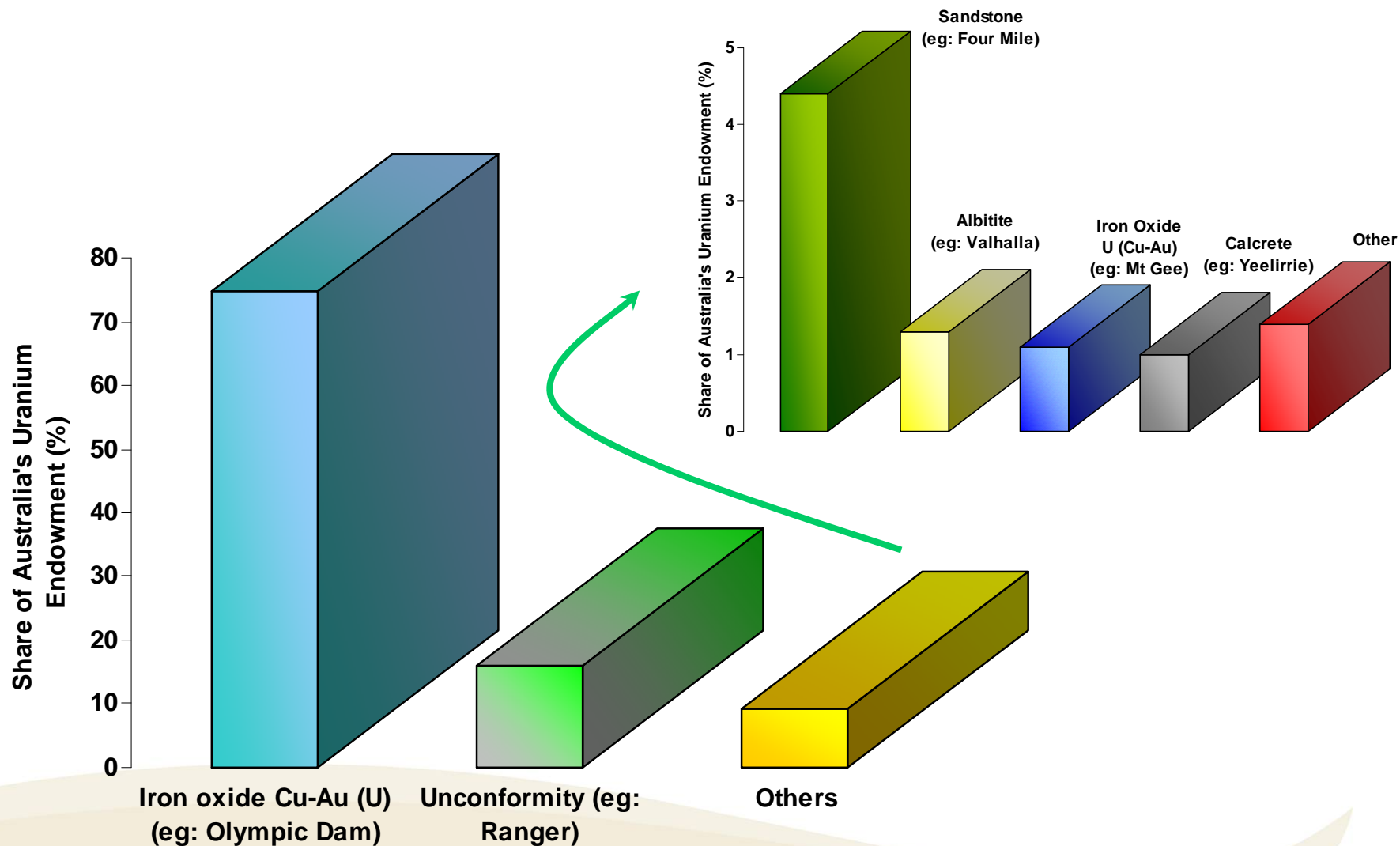
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Australia's Uranium Endowment & Typical Deposits



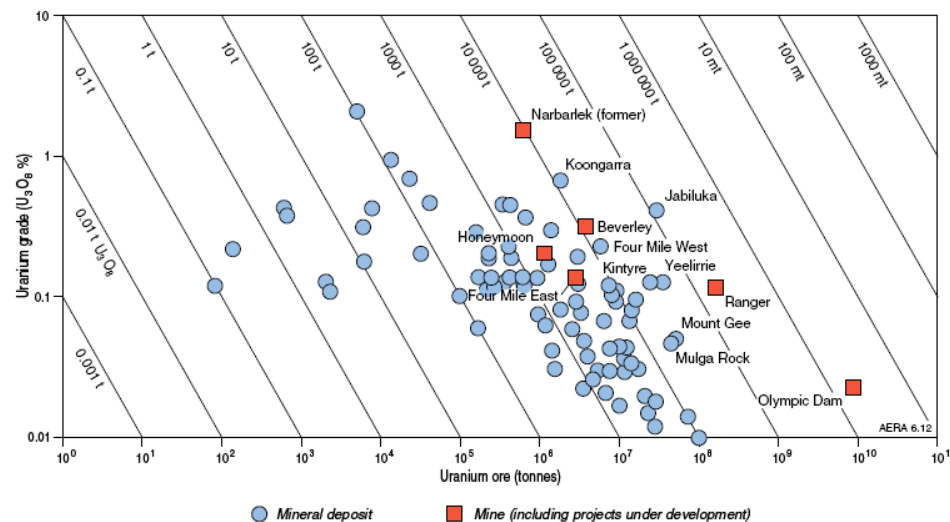
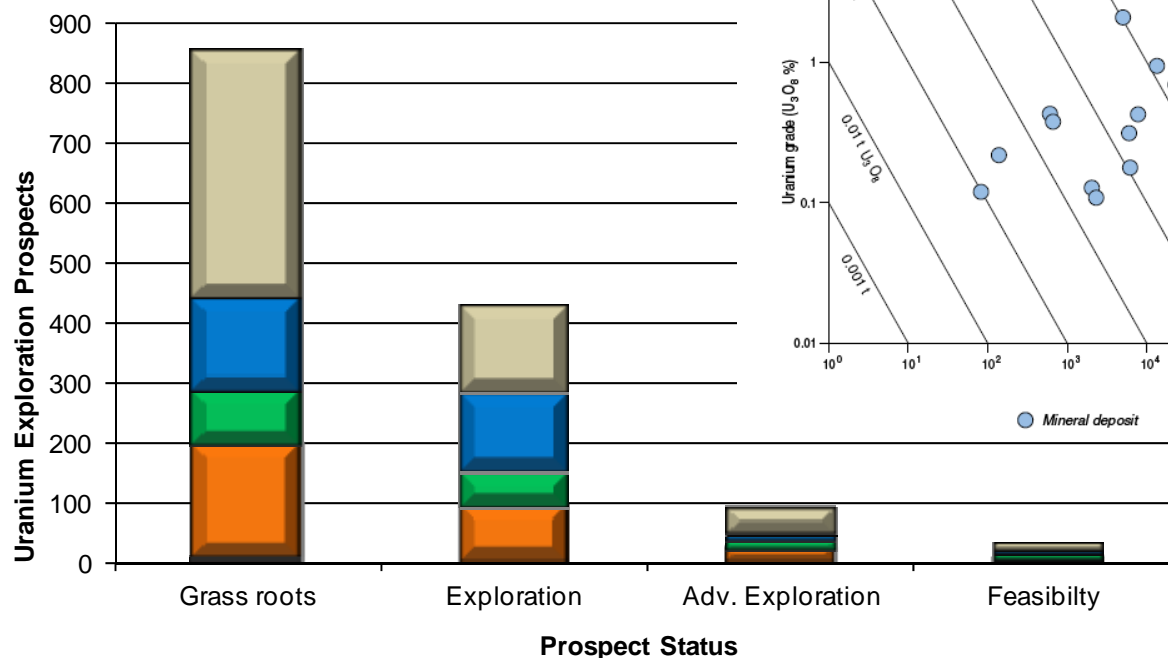
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Australia's Uranium Exploration Prospects

Over 1300 exploration prospects
290 companies



New South Wales Northern Territory Queensland South Australia
Tasmania Victoria Western Australia

Source: Intierra



Australian Exploration Prospects

Commodity	Principal Companies*	Number of Prospects			
		Grassroots Exploration	Exploration	Advanced Exploration	Feasibility Study
Gold	640	1352	1126	626	203
Copper	465	680	649	172	103
Zinc	278	275	268	88	67
Nickel	257	341	296	100	59
Iron Ore	206	285	179	143	124
Manganese	56	51	46	10	3
Chrome	15	5	8	3	0
Coal	113	122	62	116	66
Uranium	290	834	379	82	27
PGE	120	95	88	10	7
REE	49	40	24	7	3
Lithium	14	12	6	1	1
Tantalum	69	65	32	14	3

* Companies that are operators of the project or the major owner



Australian Governments Help Reduce the Risk

- **Governments provide high quality geoscientific data**
 - Assist explorers with ground selection
- **Geoscience Australia works at national and regional scales**
 - Collaborates with State & Northern Territory geoscience agencies
- **State government initiatives encourage exploration through provision of data**
 - Some support drilling for eligible programs
- **Support targeted research through Co-operative Research Centres**
 - Deep Exploration Technologies

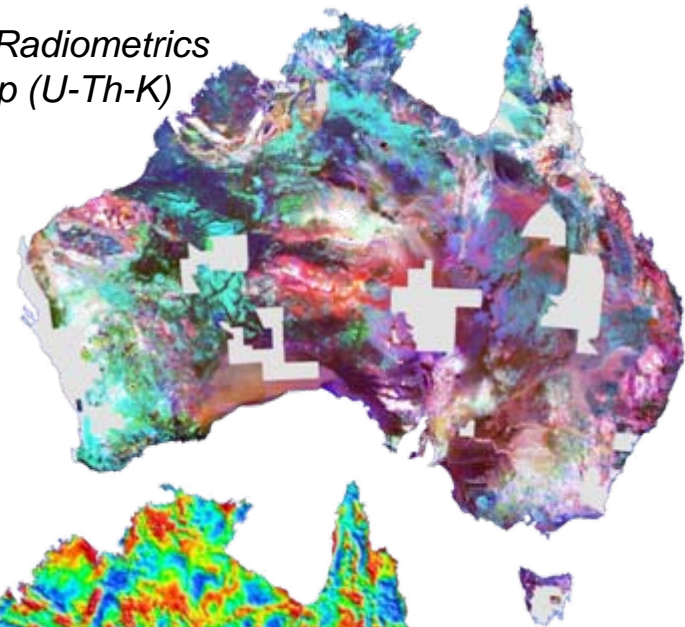


Australia's Onshore Energy Security Program

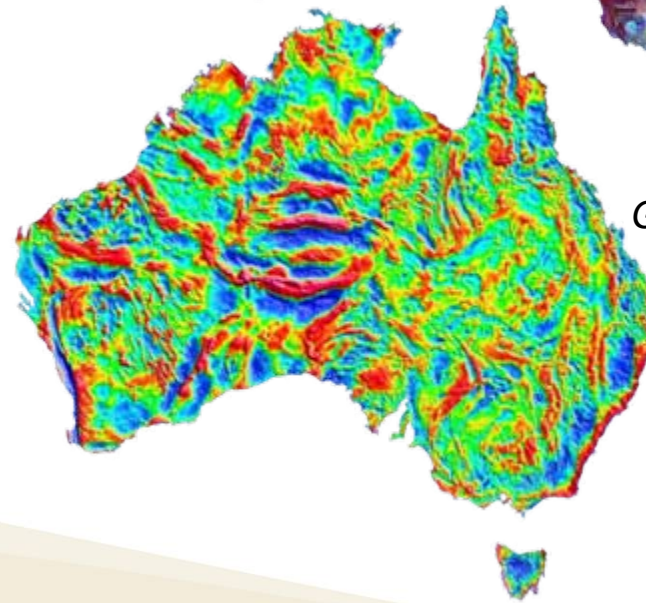
- 5 year \$58.9 million program – 2006-2011
- Pre-competitive data and value-added products to reduce exploration risk for uranium, hydrocarbons, and geothermal energy

***Data and products
also assist
exploration for other
commodities***

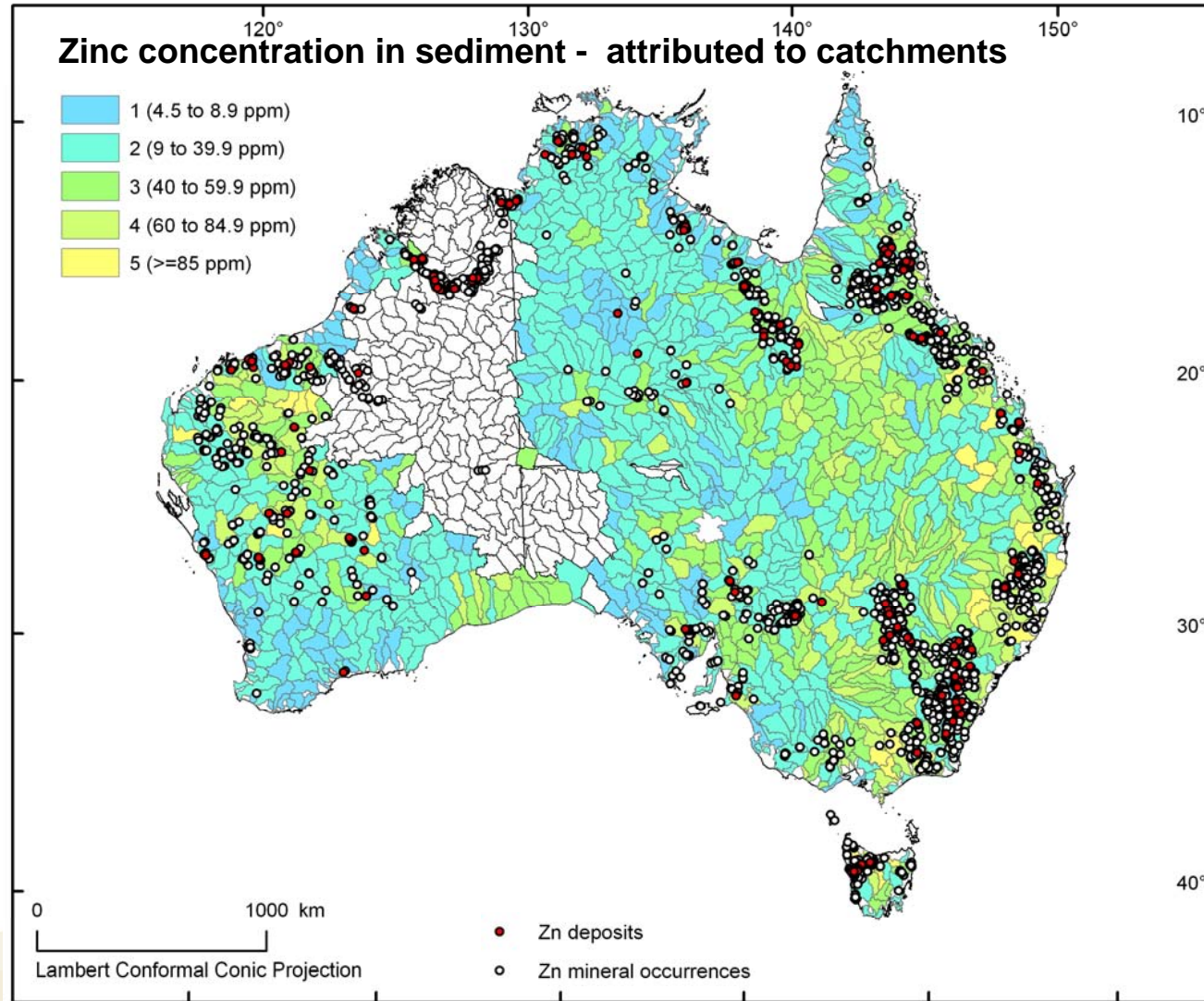
*New Radiometrics
Map (U-Th-K)*



*Gravity Anomaly
Map*



Example: New Geochemical Survey of Australia



- First geochemical survey of the entire continent
- One of few in the world at this scale; ultra-low density
- Landscape divided into large river catchments
- Samples of overbank sediments at outlets of 1186 catchments
- 68 elements analysed
- Results available online at Geoscience Australia website



Concluding Comments

- Australia - major supplier of mineral and energy resources to the world markets
- Mining is an important component of the Australian economy contributing about 10% of GDP
- Robust exploration discovering new resources and deposits in wide range of mineralisation styles
- Many opportunities for investment in exploration and mining
- Supportive Government programs at national and State/Territory levels