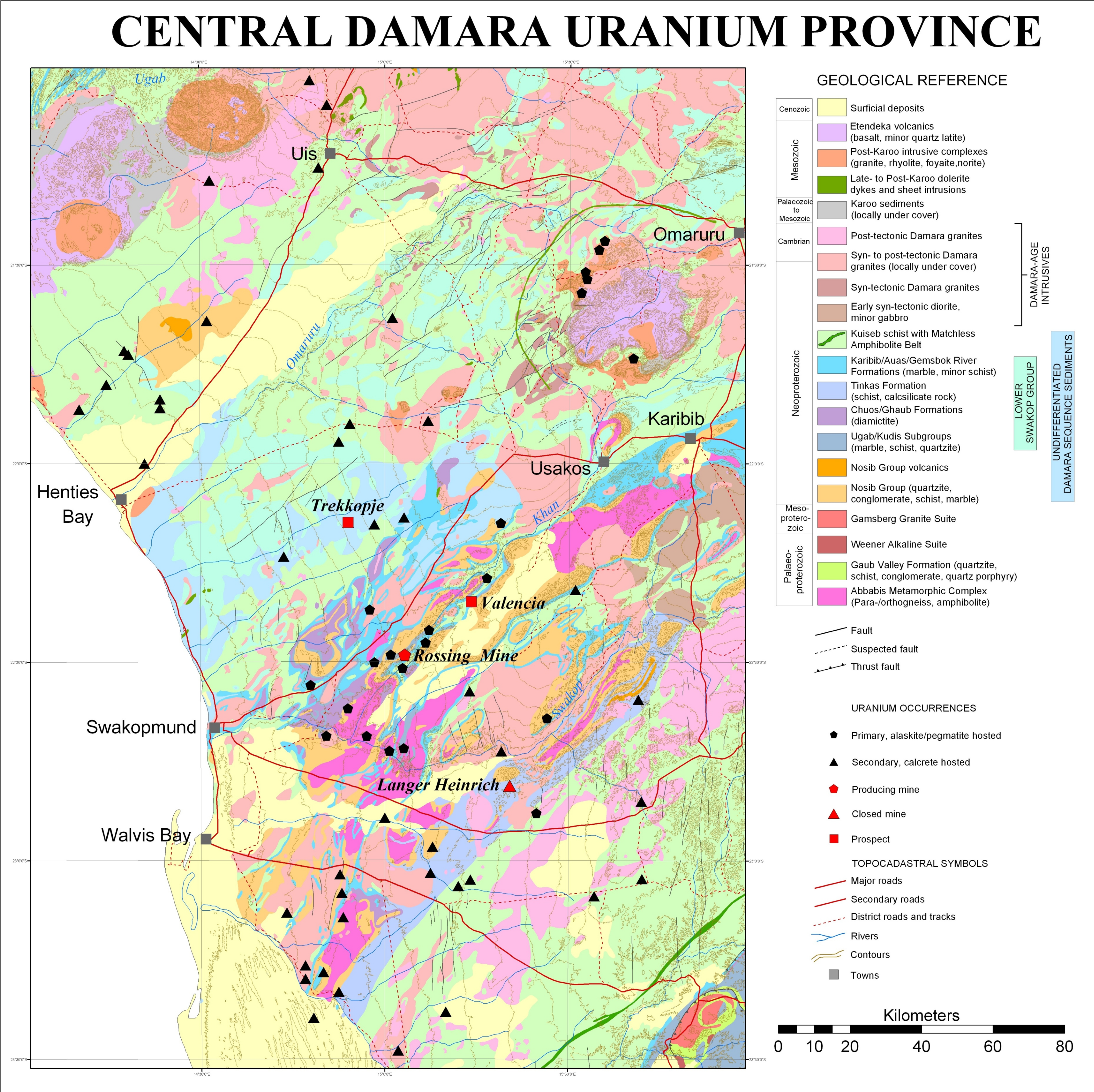
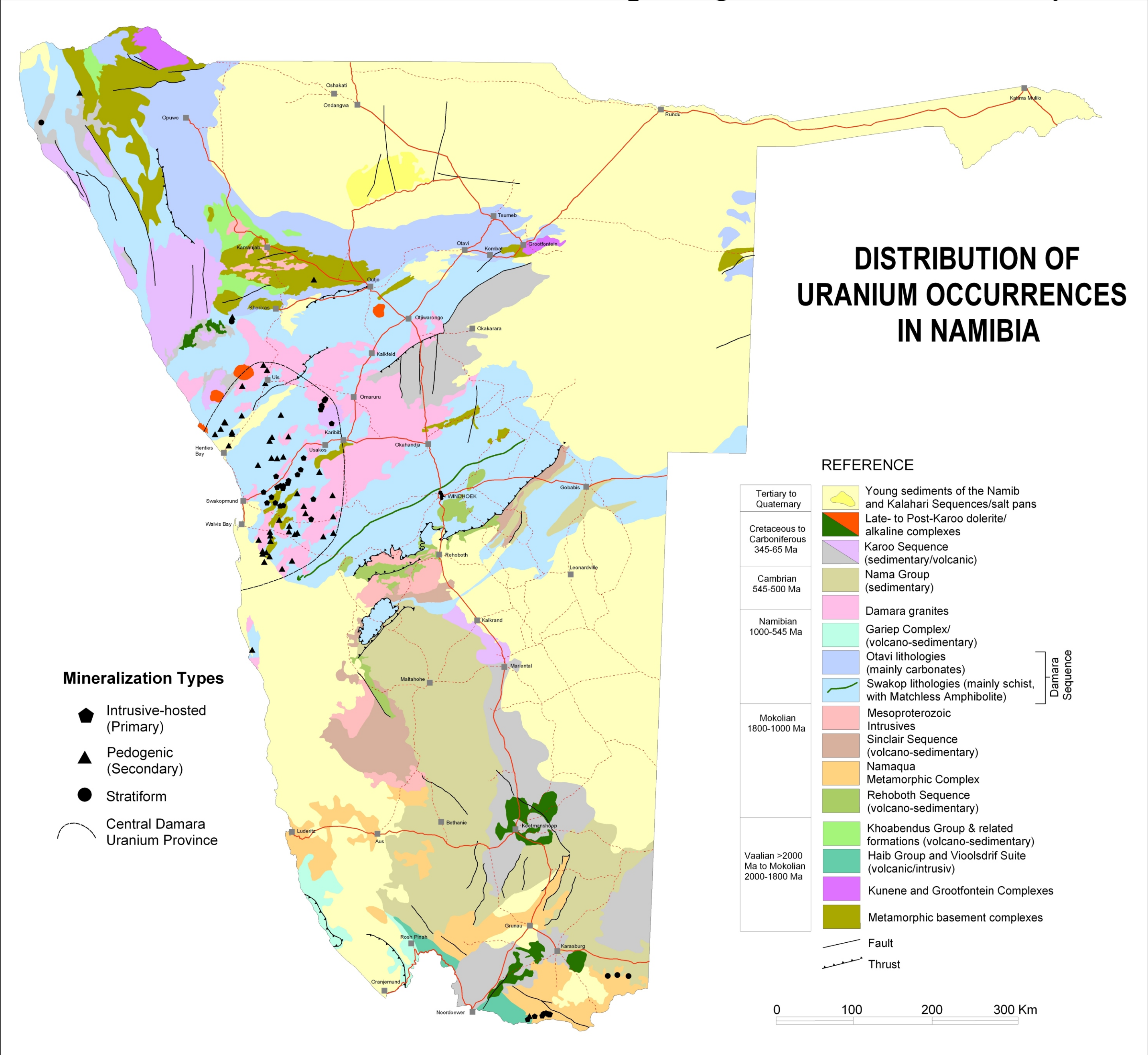




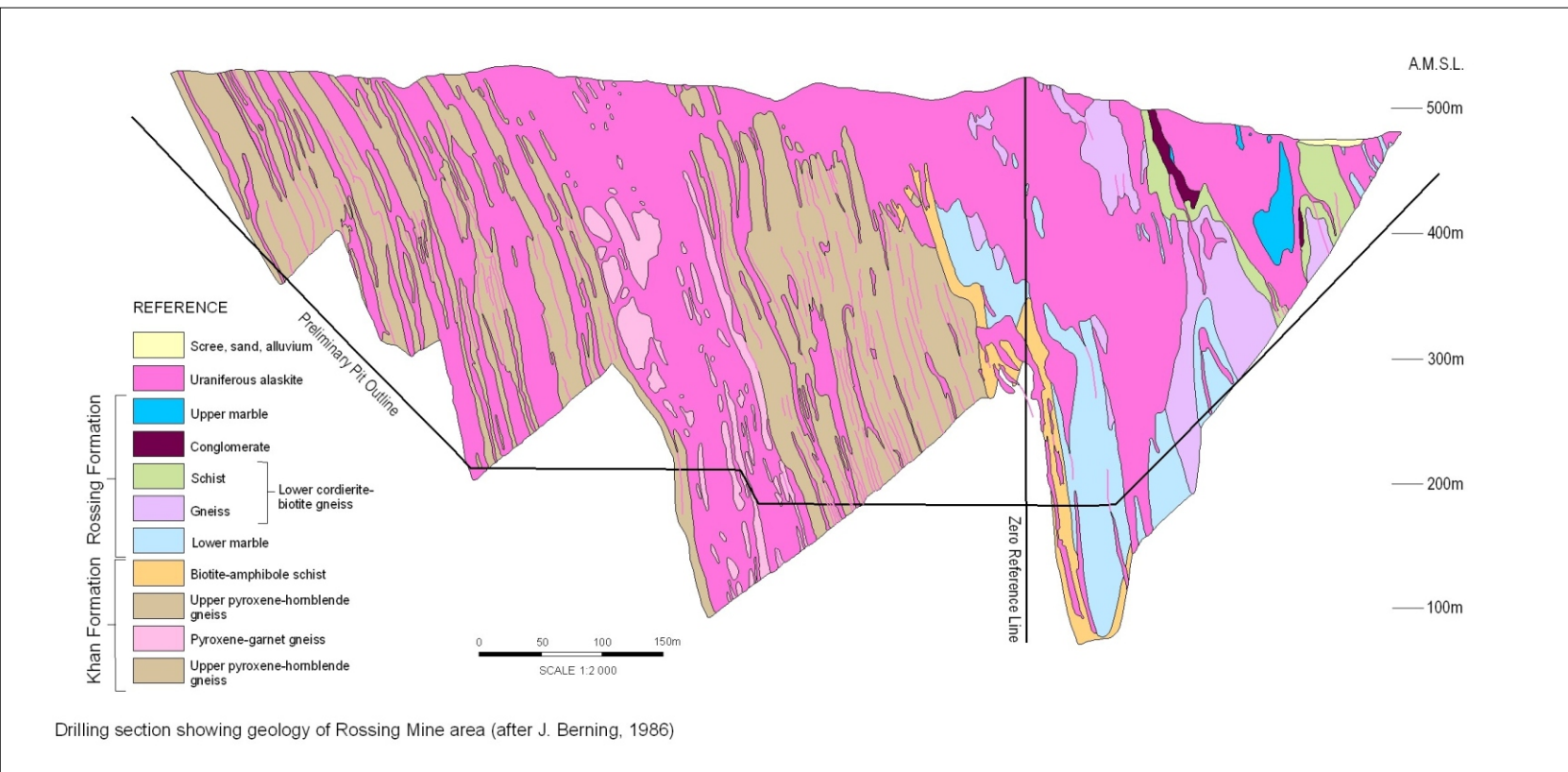
URANIUM MINERALISATION IN NAMIBIA



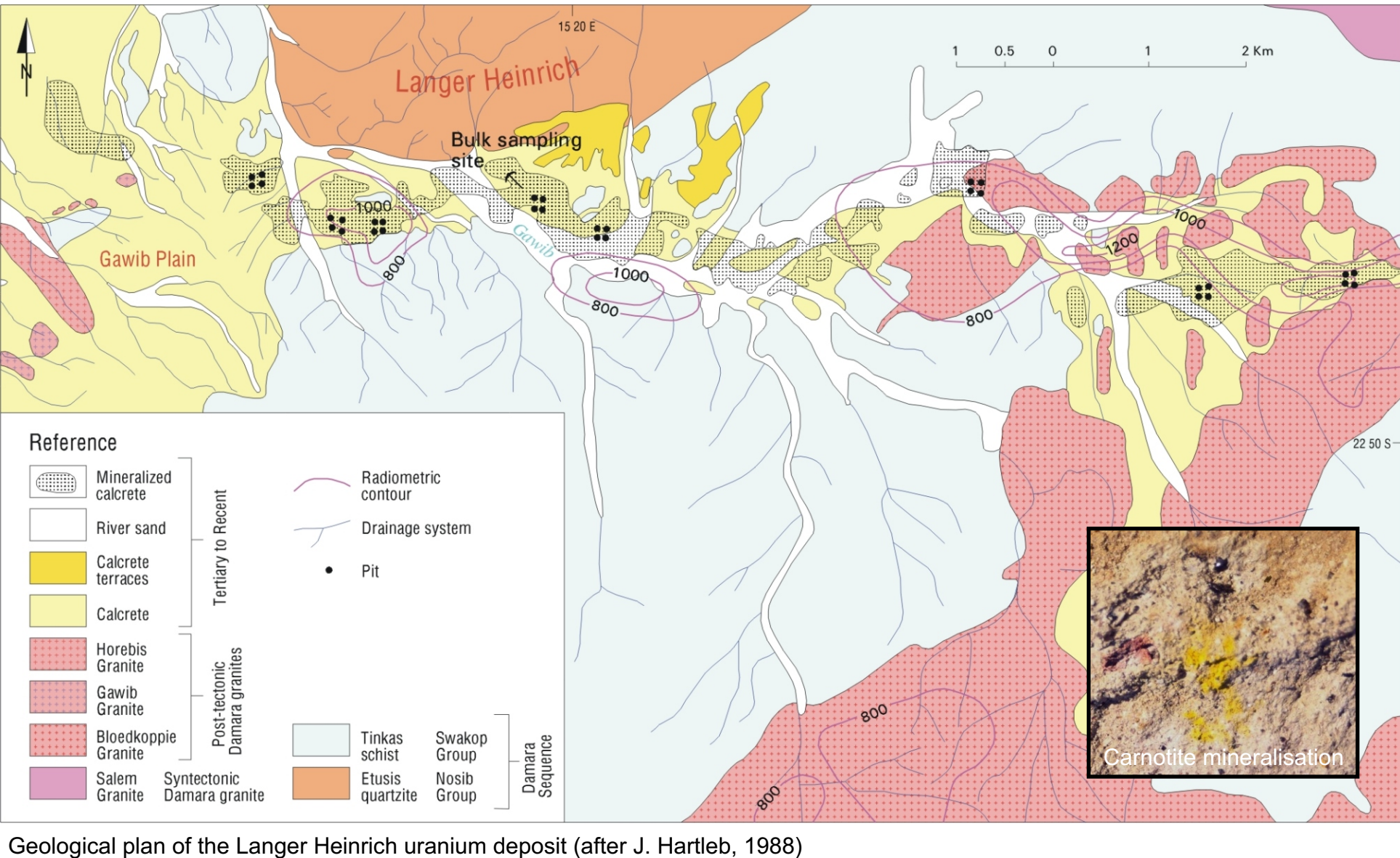
Although the western central Damara Belt hosts Namibia’s best-known deposits (e.g. Rossing, Langer Heinrich, Valencia), uranium has also been found in the north (Engo Valley) and in the south (Namaqua Belt). Airborne radiometric surveys conducted by the Geological Survey in the 1970s located a number of new occurrences, classified as intrusive-hosted, pedogenic, or sedimentary.



ROSSING MINE



by means of conventional metallurgical processes. Commercial production started in January 1978; the expected output for 2005 was 3,800 t of U₃O₈.

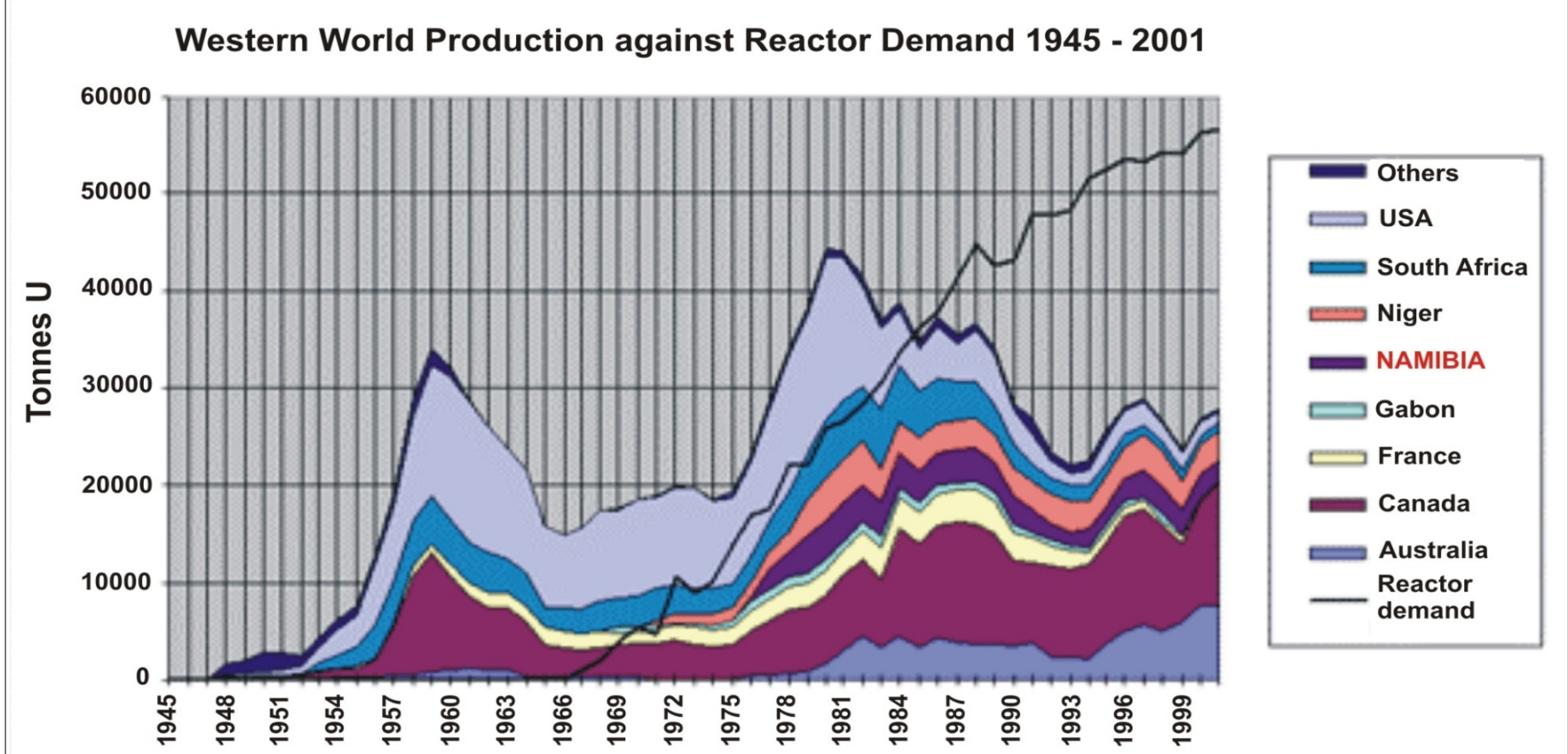


The mineralisation, which is hosted by fluvial sediments of the palaeochannel, occurs in thin tabular bodies throughout the sedimentary rocks. Carnotite [K(UO₂)(VO₄).1½ H₂] is irregularly distributed as small patches and lenses around pebbles and in cracks, or finely disseminated in the host rock. It extends westwards across the Gawib River and continues under young sediment cover for ca. 2.5 km. With a 250 ppm U₃O₈ cut-off, total resources are 72.3 Mt at 600-700 ppm U₃O₈, containing 44,000t U₃O₈. After completion of the development phase production will start in 2006.

VALENCIA

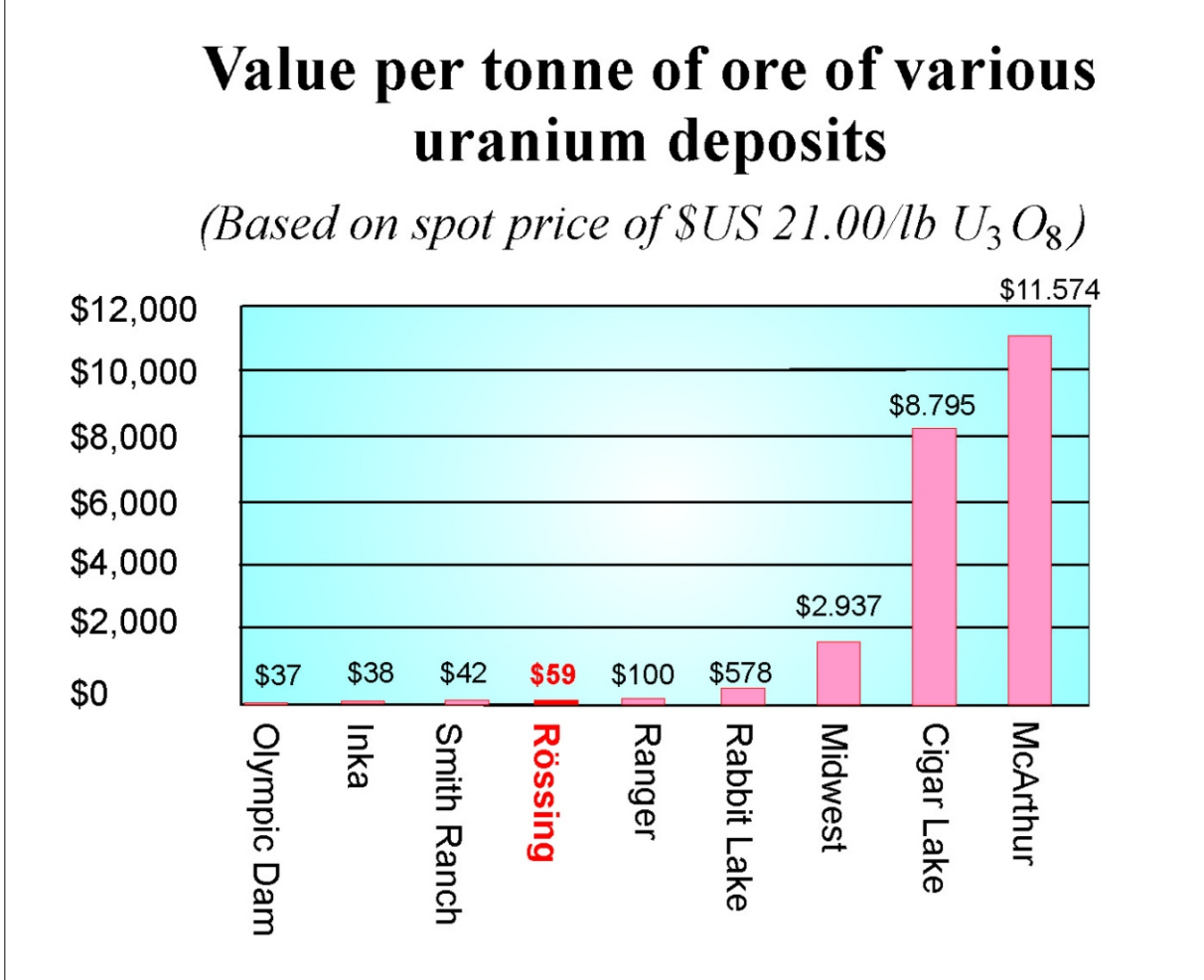
The Valencia deposit is hosted by metasedimentary rocks of the Damara Sequence. Uraniferous alaskite is emplaced on the northwestern limb of a recumbent synclinorium cored by metamorphic basement, where it forms massive stock-like bodies, dykes of variable thickness, and conformable as well as transgressive veins, possibly representing syntectonic and post-tectonic phases of intrusion. The alaskites, which contain abundant host-rock xenoliths, vary from aplitic to pegmatitic, with uranium mineralisation generally being better developed in the finer-grained rocks.

The secondary uranium minerals uranophane [Ca(UO₂)₂Si₂O₇·H₂O] and uranothallite [Ca₂U(CO₃)₄·10H₂O] are present in the upper few metres of the alaskite bodies as yellow coatings on exfoliation planes and joints; uraninite is usually fresh, with only sporadic alteration rims. The uranium is variably distributed throughout the alaskite, and locally high-grade ore is in contact with barren or poorly mineralised metamorphic host-rock. Enriched zones are commonly found on or near contact with country rock xenoliths, and the degree of darkness of the quartz is indicative of the relative uranium content. A feasibility study was completed in 1989, when total resources were estimated at 42.7 million tonnes of ore with an average grade of 0.214 kg/t U₃O₈ to a depth of 210 metres. A re-evaluation of the deposit is currently under way.

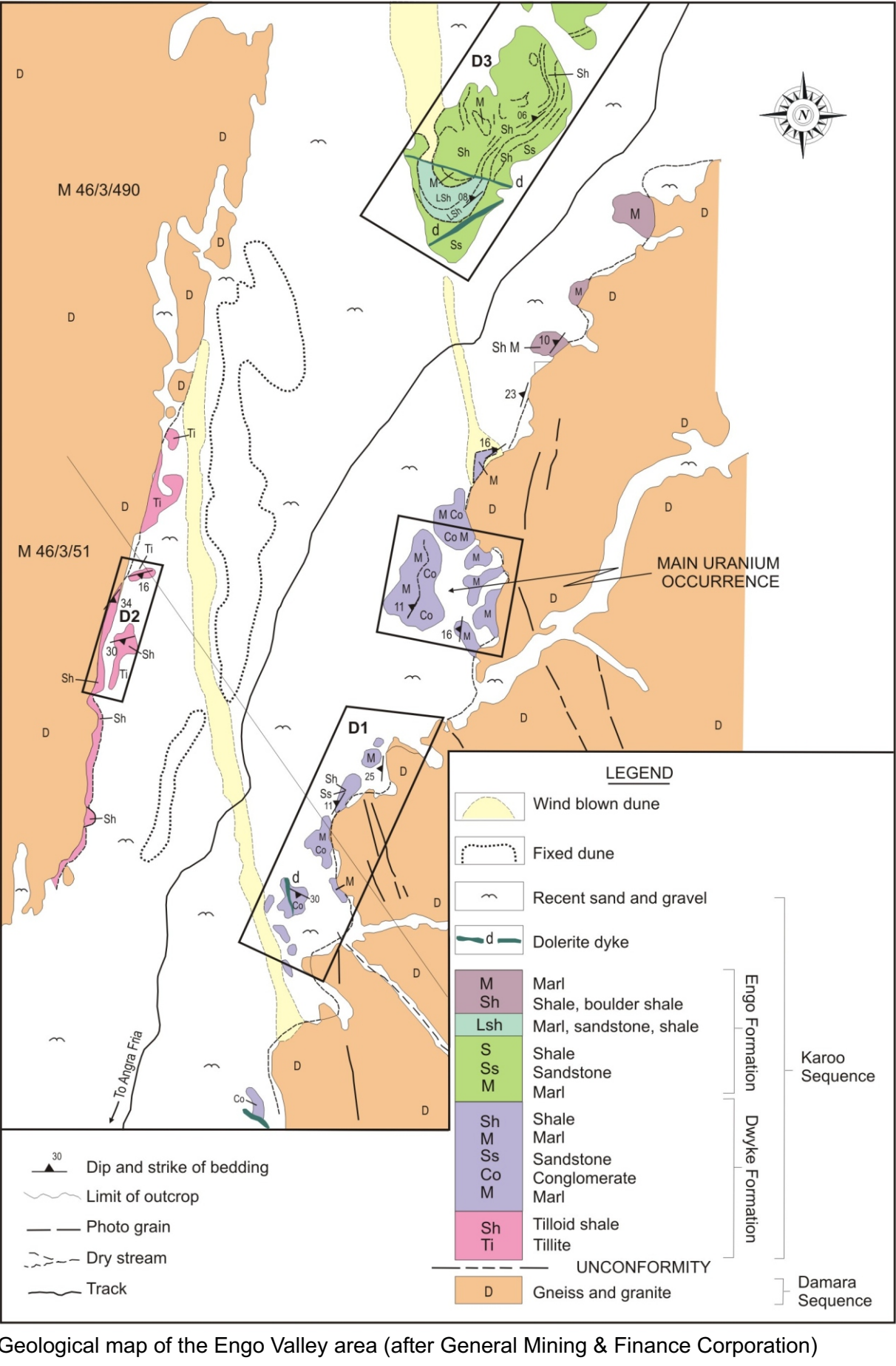


Country	2006	2007	2008	% change 2007-08
Canada	9862	9476	9000	-5
Kazakhstan	5279	6637	8521	28
Australia	7593	8611	8430	-2
Namibia	3077	2879	4366	52
Russia (est)	3400	3413	3521	3
Niger	3434	3135	3032	-3
Uzbekistan	2270	2320	2338	1
USA	1602	1654	1430	-14
Ukraine (est)	800	846	800	-5
China (est)	750	712	769	8
South Africa	534	539	566	22
Brazil	190	299	330	10
Czech Rep	359	306	263	-14
India (est)	230	270	271	1
Romania (est)	90	77	77	0
Pakistan (est)	45	45	45	0
France	0	4	5	25
Germany	65	41	0	-100
Total world			43764	6

Source: World Nuclear Association



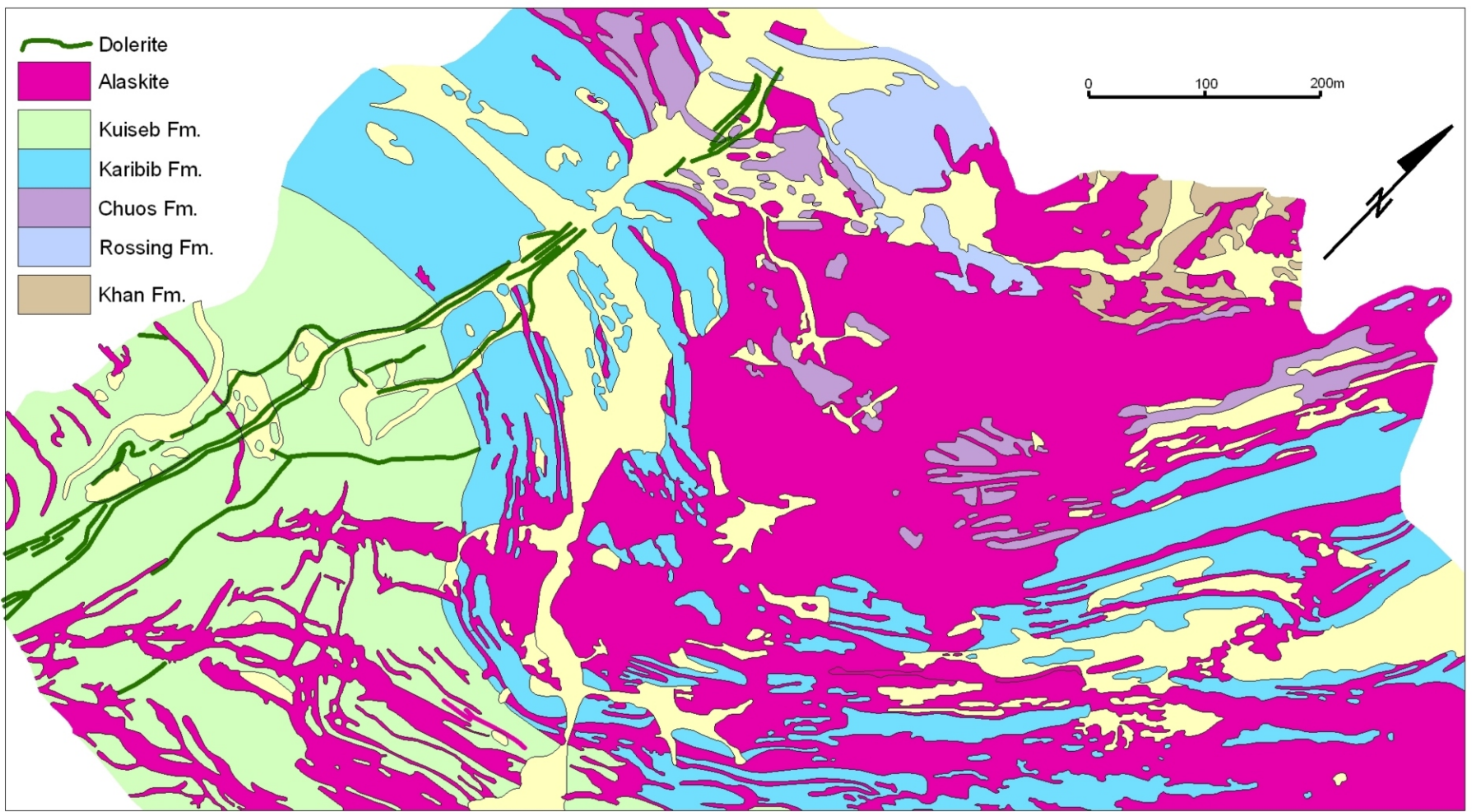
Source: Uranium Group Update September 2005



Although Rössing ranked 3rd in world uranium production in 2006, the ore grade is low compared to other major uranium mines.

Engo Valley

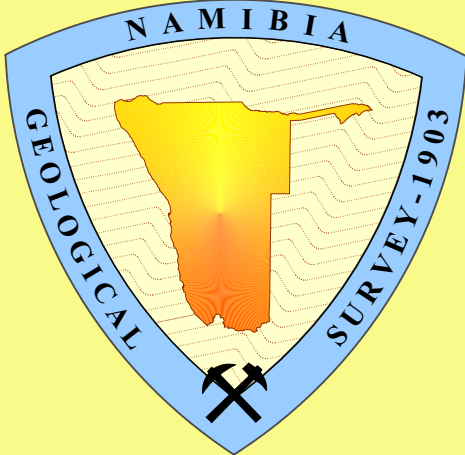
Disconformity-type uranium mineralisation (carnotite) occurs in fluvio-glacial alluvial fan-type deposits of the Karoo-age Dwyka Formation, and within shales of the overlying Eccia Group (very fine-grained uraninite associated with pyrite and chalcopyrite), in the Engo river valley of northwestern Namibia. Large post-tectonic granite intrusions related to the Damara Orogeny are thought to be the source of the uranium mineralisation. Ore resources calculated for two mineralised zones are 5.68 million t at 340 g/t, but grade within these zones varies greatly over short distances (Fletcher, 1981).



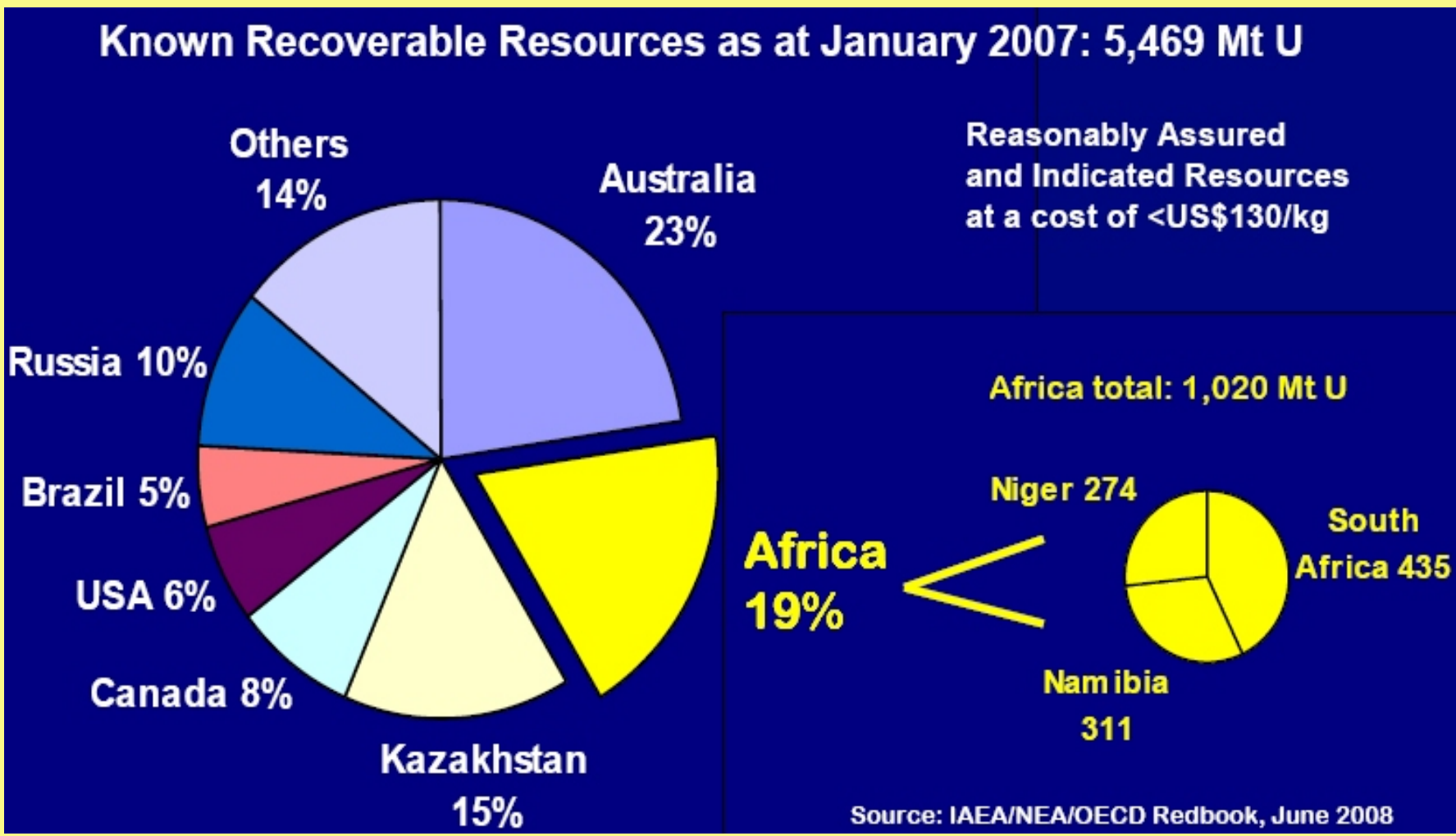
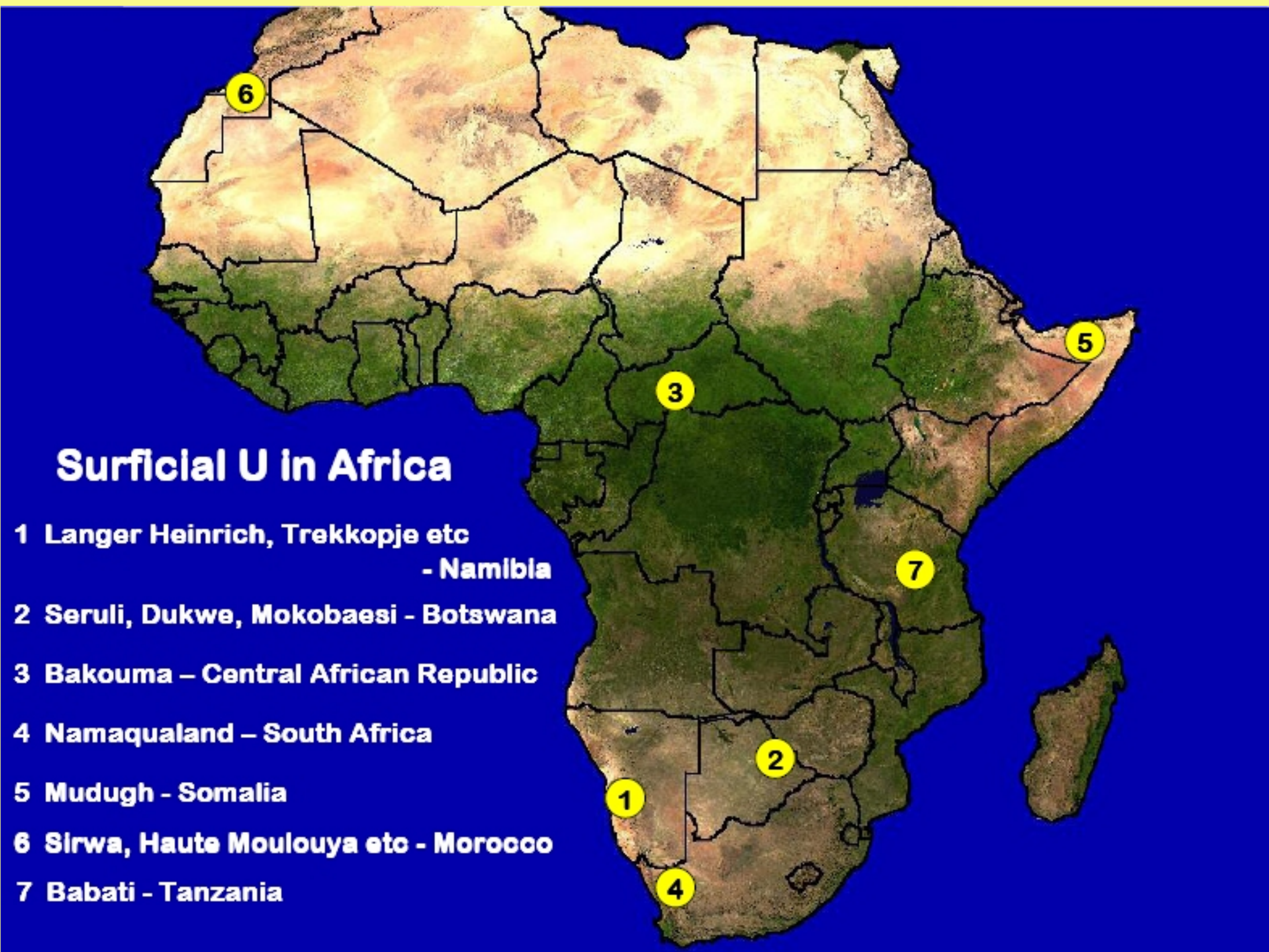
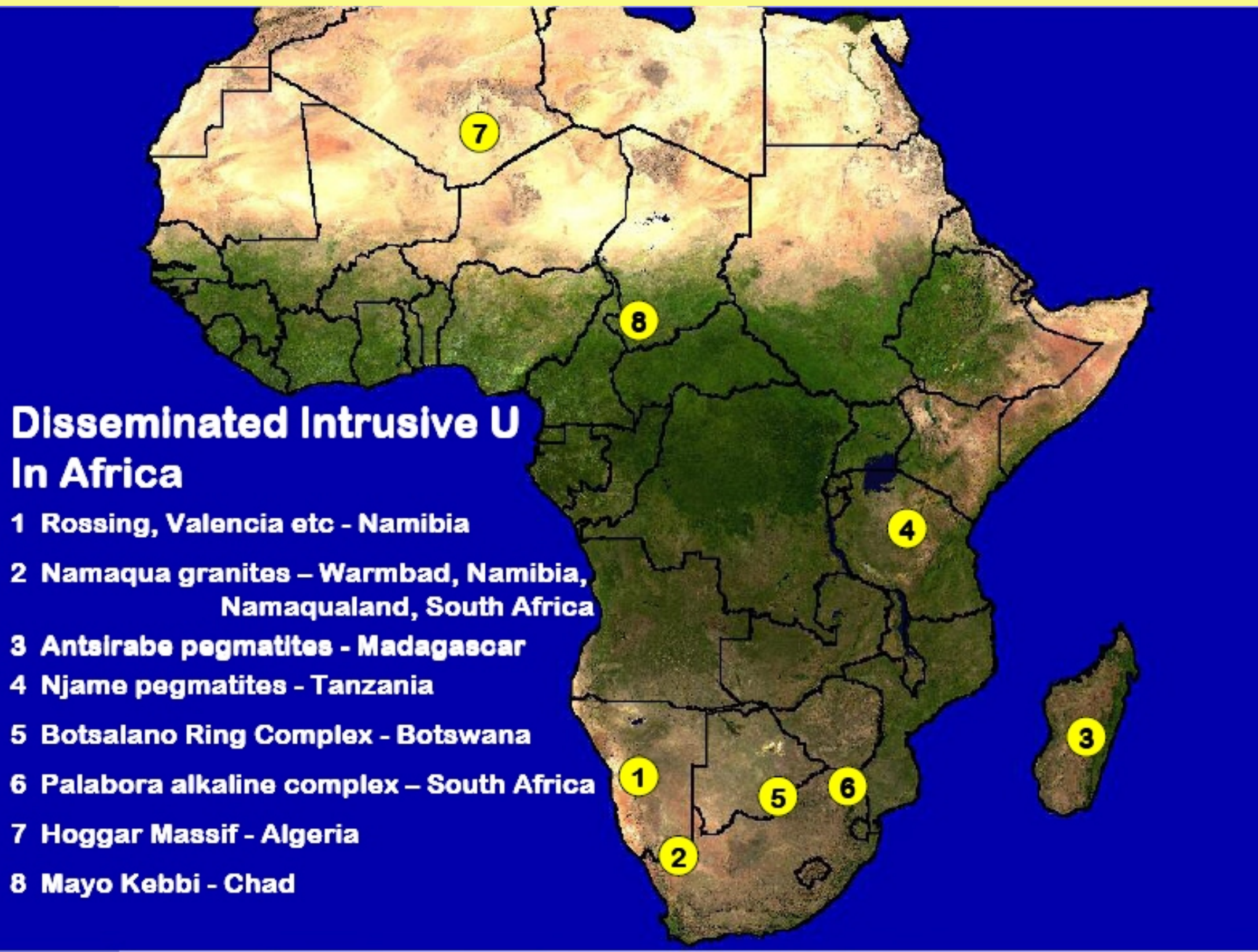
Generalised geological plan of the Valencia uranium deposit (after Gold Fields Namibia)



URANIUM IN NAMIBIA



Hosting both primary and secondary uranium deposits, Namibia was the world’s fourth biggest producer of U₃O₈ in 2008, and with more than 4300 tonnes provided just about 10 per cent of the world’s total output. Although the western-central Damara Belt hosts its best-known deposits (e.g. Rössing, Langer Heinrich, Valencia), uranium has also been discovered in the north (Engo Valley) and in the south (Namaqua Belt) of the country. High-resolution airborne radiometric surveys conducted by the Geological Survey since the mid-1990s located a number of exploration targets, which are currently being investigated or developed (e.g. Rössing South, Etango). Of Africa’s total recoverable resources, Namibia owns approximately one third (i.e. 311 t/U). However, mine development in the central Namib requires upgrading of both existing water and power resources, while special environmental provisions have to be made in an area most of which is part of one of Namibia’s major National Parks (Namib-Naukluft Park).



Country	Production from mines (tonnes U)			% change 2007-08
	2006	2007	2008	
Canada	9862	9476	9000	-5
Kazakhstan	5279	6637	8521	28
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Total world			43764	6

Source: World Nuclear Association, November 2009

RÖSSING MINE



Satellite image of open pit at Rössing Mine; inset: ore truck scanning unit



Rössing processing plant

Rössing is the oldest established uranium mine in Namibia. The deposit was discovered in the 1920s, and operations began in 1976. Rössing is situated in the Central Zone of the intracontinental branch of the Pan-African Damara Orogenic Belt. Economically important uranium mineralisation occurs in the late- to post-tectonic granitic rocks referred to as alaskite or leucogranite in the literature. The main ore mineral is uraninite [UO₂], usually associated with feldspar or quartz. Secondary alteration of the primary uranium minerals to silicates, in particular uranophane / beta-uranophane [Ca(UO₂) Si₂O₇·6H₂O] and to a lesser extent phosphates (torbernite, [Cu(UO₂)₂(PO₄)₂·8-12H₂O]) are widespread. Due to the erratic nature of the mineralisation, ore grade is most efficiently controlled by radiometric scanning of loaded haul trucks. Calculated reserves are in access of 750 Mt of ore containing some 100 000 t of U₃O₈ (average grade 0.37 kg/t).

LANGER HEINRICH

Secondary calcrete-hosted uranium mineralisation in the Gawib river valley some 90 km east of Swakopmund was first reported in the early 1970s. An extensive feasibility study followed the discovery, but due to economic restrictions the Langer Heinrich Mine was commissioned only in March 2007, and production started the same month. Mineralisation occurs in the form of carnotite [K(UO₂)(VO₄)·1½ H₂], which is irregularly distributed as a coating on pebbles and in cracks within the fluvial sediments of an extensive tertiary palaeo-drainage system. At a 250 ppm U₃O₈ cut-off grade, current assured resources are 55 Mt of ore (measured and indicated), and a further 70 Mt inferred, with an average grade of 0.6 kg/t.



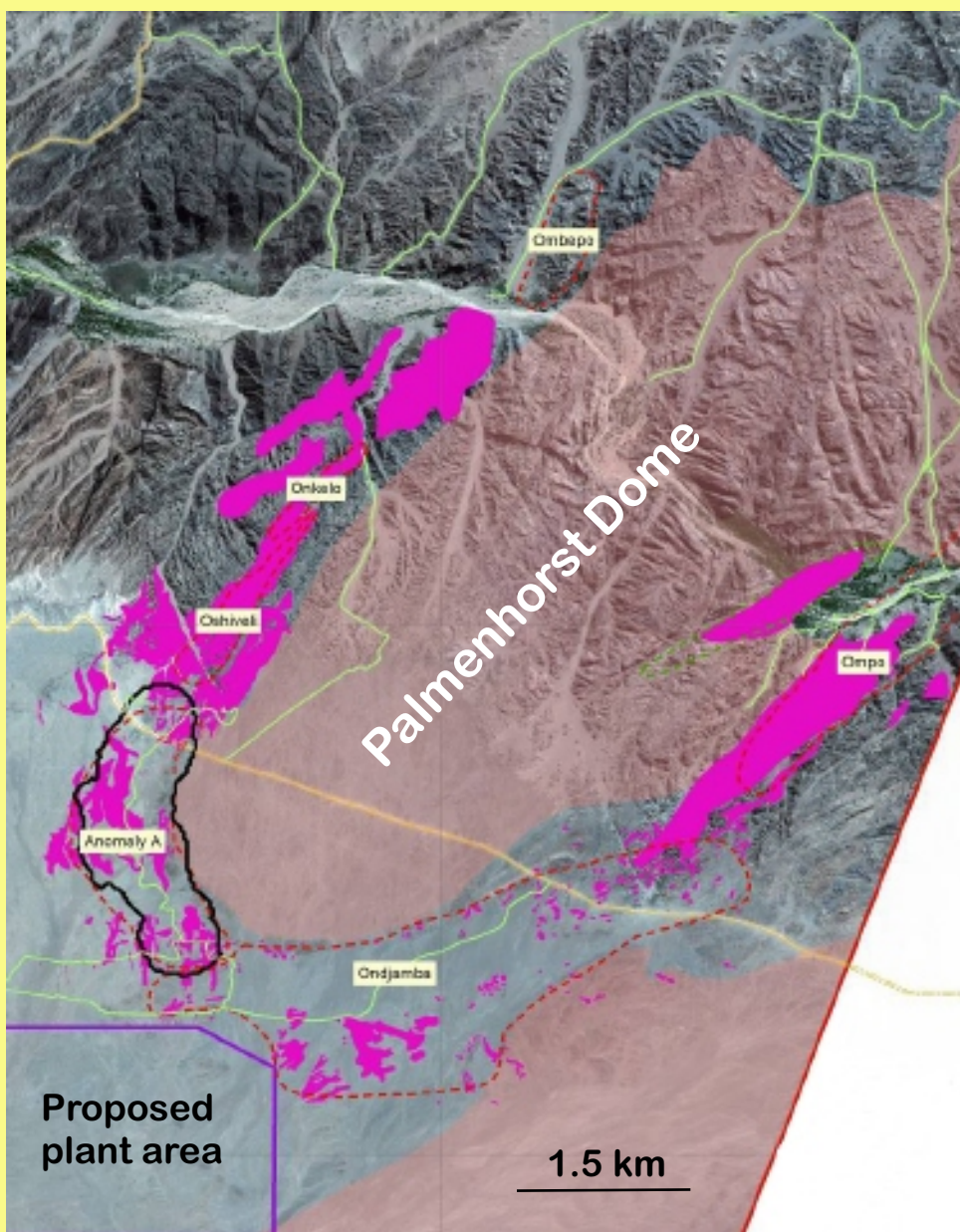
Aerial view of Langer Heinrich Mine, with tailings dam



Langer Heinrich plant in the Namib Desert; inset: carnotite

ETANGO

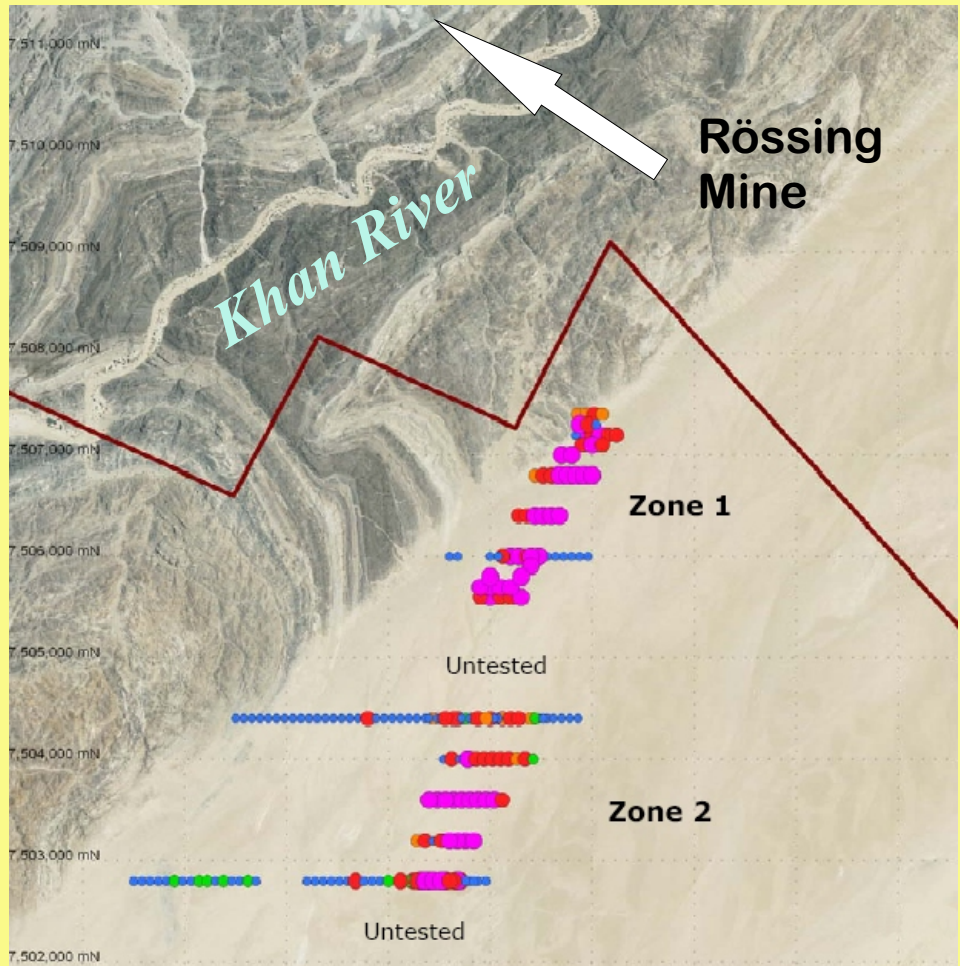
Rated a world class uranium prospect, Etango (formerly known as Goanikontes Uranium) is located south of the Swakop River, some 30 km east of Swakopmund. Hugging the flanks of a pre-Damara basement dome cored by granite gneiss, the alaskite-hosted mineralisation comprises stock-like dykes of varying thickness, which intruded into the surrounding metasedimentary Damara host rocks. Similar to the nearby Rössing deposit, the dominant primary uranium mineral is uraninite, with minor betafite (Ca,U)₂(Ti,Nb,Ta)₂O₆(OH), and secondary uranophane and autunite [Ca(UO₂)₂(PO₄)₂·10-12H₂O]. Intensive exploration including more than 140 000 m of RC and diamond drilling, produced a resource estimation of 160 Mt of indicated and inferred resources grading an average 0.2 kg/t of U₃O₈ for “Anomaly A” at the southwestern periphery of the dome, while alaskites on the eastern flank are also considered highly prospective. Mining is planned to start in 2011, with a predicted mine life of 15 years.



Distribution of uraniferous alaskite in the vicinity of the Palmenhorst Dome (Etango Project)

RÖSSING SOUTH

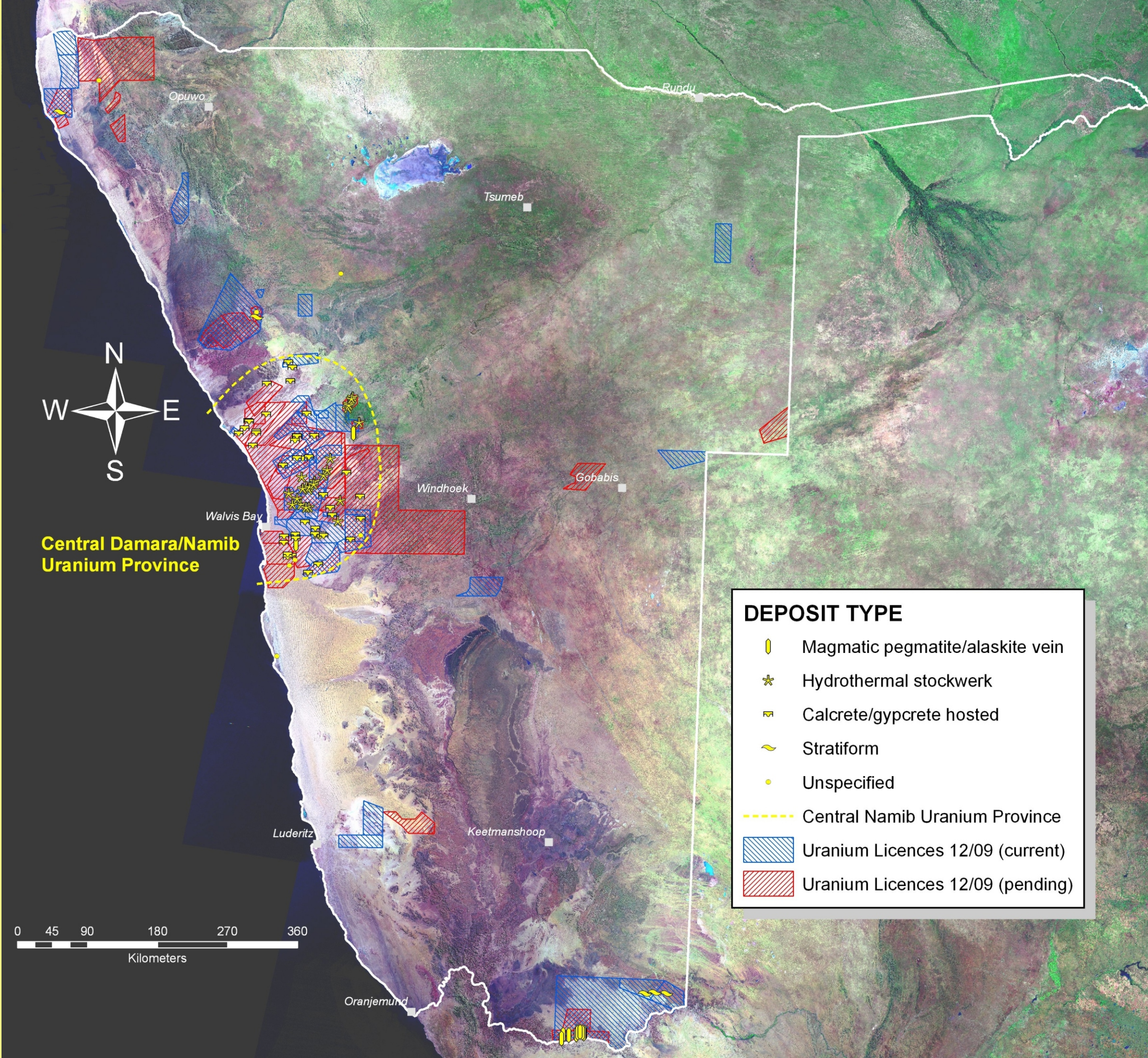
One of the most recent discoveries, the Rössing South prospect, is located under Namib sand cover just south of the Khan River. It is interpreted as an extension of the same stratigraphy that hosts the Rössing



Uranium Mine five kilometres to the north. Exploration carried out to date indicates that at 0.43 kg/t the average grade is considerably higher than at Rössing, making it at this stage the highest grade granite-hosted uranium deposit in Namibia.

Location of mineralized zones 1 and 2 of the Rössing South deposit (far left); mineralisation encountered in one of the exploration drill holes (left)

Mine	Country	Main owner	Type	Production (tU)	% of world
McArthur River	Canada	Cameco	underground	6383	15
Ranger	Australia	ERA (Rio Tinto 68%)	open pit	4527	10
Rössing	Namibia	Rio Tinto (69%)	open pit	3449	8
Olympic Dam	Australia	BHP Billiton	by-product/ underground	3344	8
Kraznokamensk	Russia	ARMZ	underground	3050	7
Arlit	Niger	Areva/Onarem	open pit	1743	4
Rabbit Lake	Canada	Cameco	underground	1368	3
Akouta	Niger	Areva/Onarem	underground	1289	3
McClean Lake	Canada	Areva	open pit	1249	3
Akdala	Kazakhstan	Uranium One	in situ leach	1034	2
Top 10 Total				27436	62%



Distribution of known uranium occurrences, and nuclear fuel exploration/mining licences (status December 2009)

TREKKOPJE

Situated some 70 km northeast of Swakopmund, Trekkopje and Klein Trekkopje have a very similar deposit geology as Langer Heinrich. Uranium was mobilized to form carnotite derived from schists of the Damara Sequence and enriched in the fluvial sediments of palaeochannels within the last 5 my. Measured and indicated reserves are 307 Mt of ore at 0.151 kg/t, with another 11 Mt grading 0.127 kg/t inferred.



Development at Trekkopje