The Mineral Systems of the Zealandia Continent: 500 Million Years and Counting

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ABSTRACT

The new knowledge that New Zealand is not just a group of small SW Pacific islands, but part of the world's 8th continent, provides fresh and exciting insights into mineral deposit formation in New Zealand. Zealandia, formerly part of the Gondwana supercontinent, has been subjected to episodic convergent and extensional plate margin and intraplate geological processes for more than 500 million years. Continental margin settings, such as the Cordillera of North and South America, are host to significant precious and base metal deposits. Until recently, New Zealand was not seen in this context. Now it is.

Zealandia provides a big-picture mineral systems framework to help guide future exploration. This new roadmap supersedes previous fragmented, complex and local constructs. For example, the long-lived, continental-scale Median Batholith with I-, S- and A-type granites, separates Mezozoic and Paleozoic accretionary complexes, the latter with east Australian orogenic gold connections. In addition to its Gondwana heritage, Zealandia also enjoys the mineral system benefits of Cenozoic Pacific Rim processes that have resulted in the formation of young world-class epithermal gold deposits.

The context of the Zealandia continent leads to improved conceptual SW Pacific exploration strategies and targeting, based on more appropriate mineralisation processes and geological models. Now more than ever, we know why Zealandia hosts a wide variety of mineral deposit types, and have increased "geological assurance" that there is potential for new world-class deposits to be found.