



New Zealand and South Korea Minerals and Mining: A Tale of Two Countries



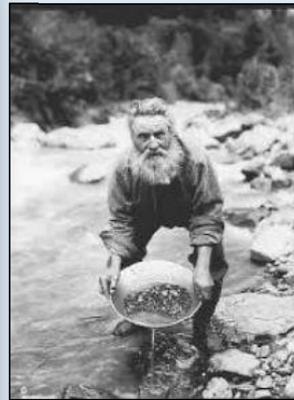
**AusIMM NZ Branch Conference
Wellington 19-21 August 2024**

Exploration: The Life Blood of Mining



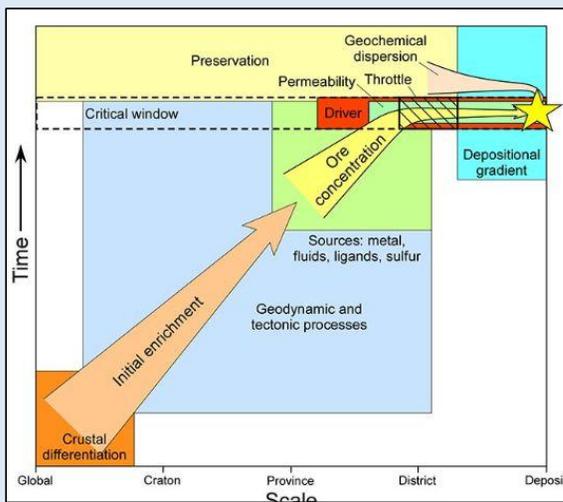
Country Prospectivity: Number 1 Exploration Investment Criteria

Prospectivity = Endowment + Perception

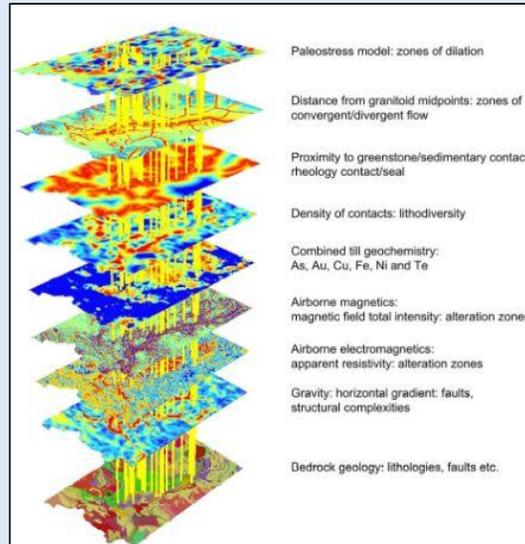


**Geological
Information and
Knowledge
...and Opinion!**

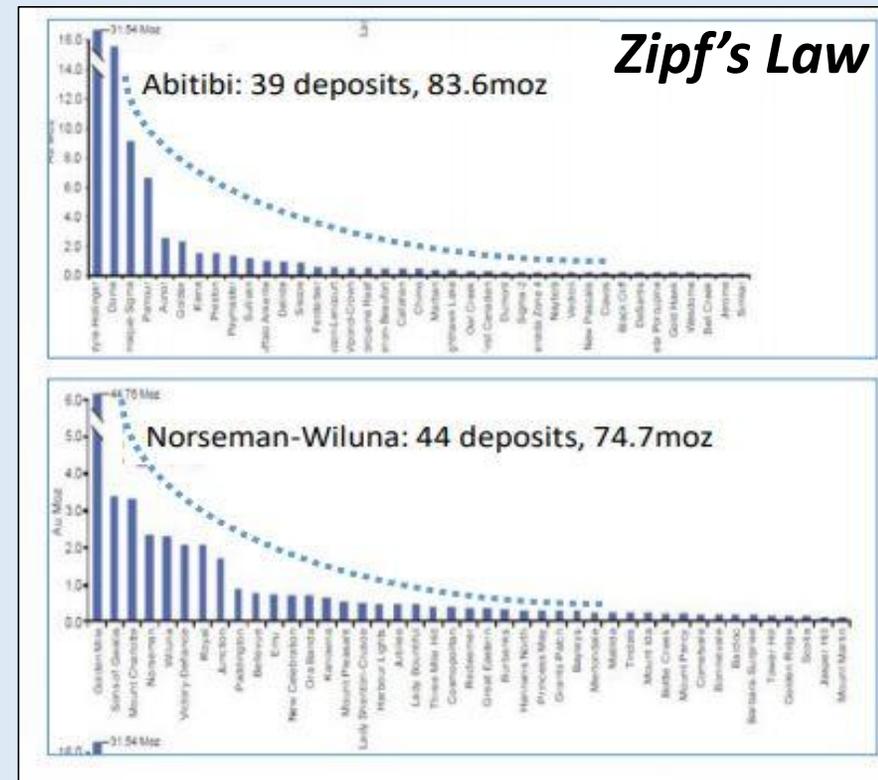
Prospectivity Frameworks for Exploration Motivation



Mineral Systems Analysis



Prospectivity Modelling



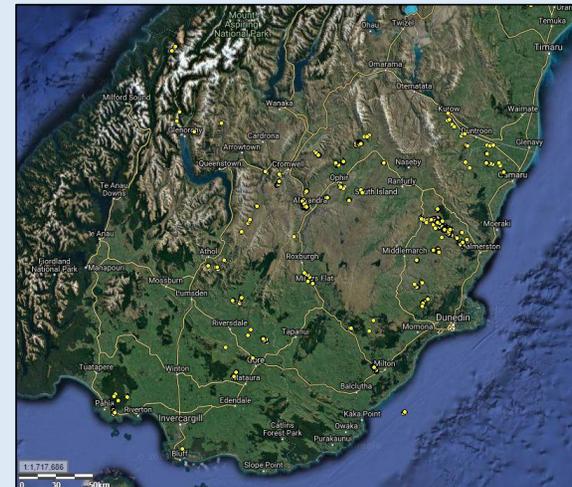
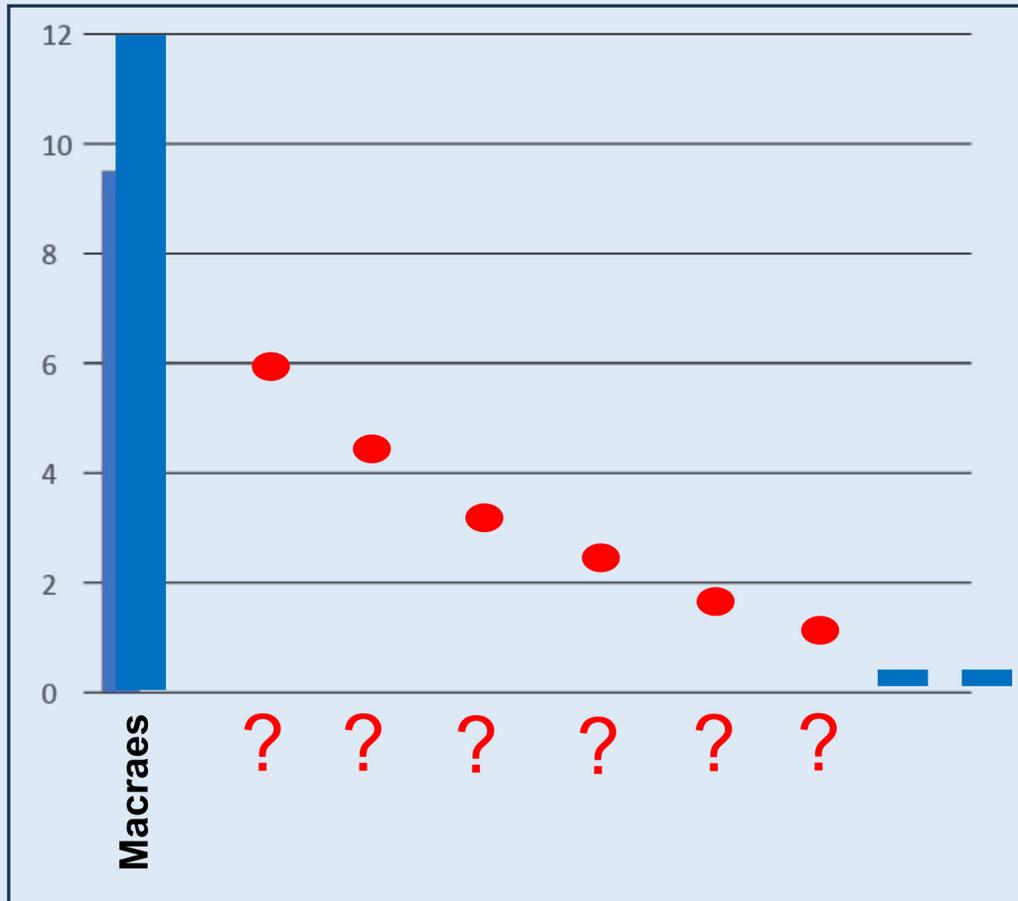
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Economic Geology, v. 106, pp. 241-250

A Time-Series Audit of Zipf's Law as a Measure of Terrane Endowment and Maturity in Mineral Exploration

PIETRO CUJ,^{1,1} MATTHEW FALLON,² T. CAMPBELL MCCUAIG,³ AND ROBERT FAGAN⁴

Zipf's Law: Otago's Missing Gold Deposits?

2017 Otago Gold Explorers Forum, AusIMM 2018



Zipf's Law Otago: Missing Deposits – Bendigo 2024

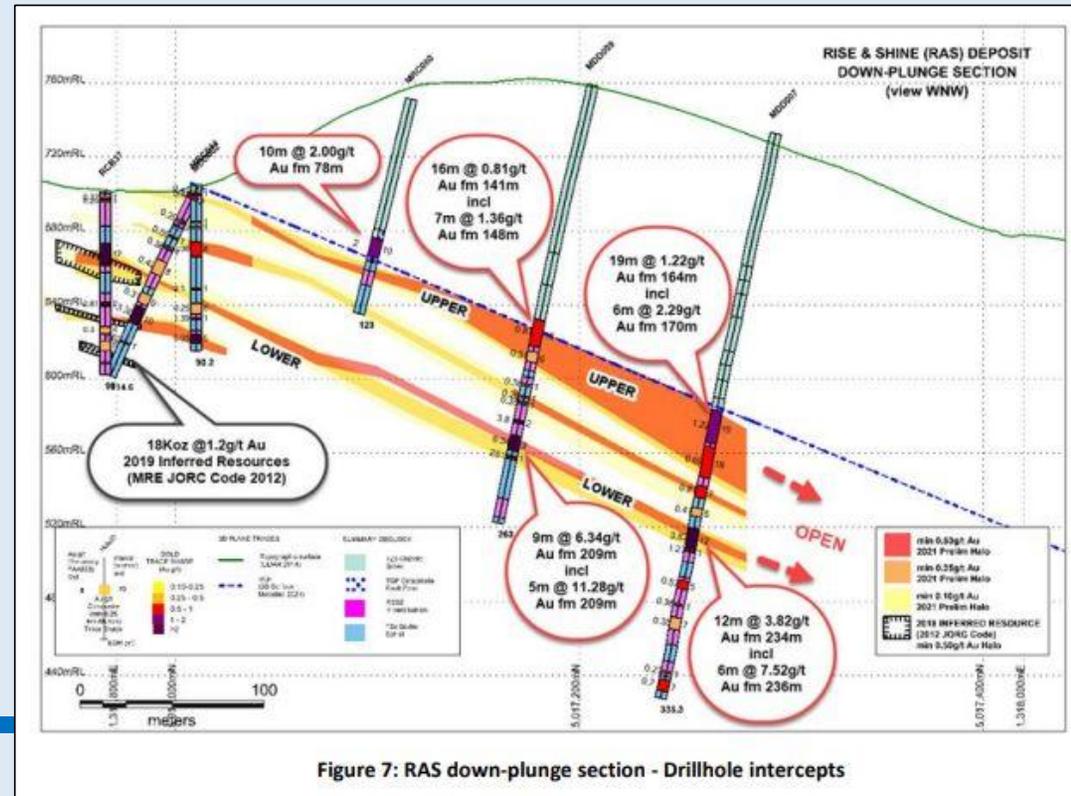
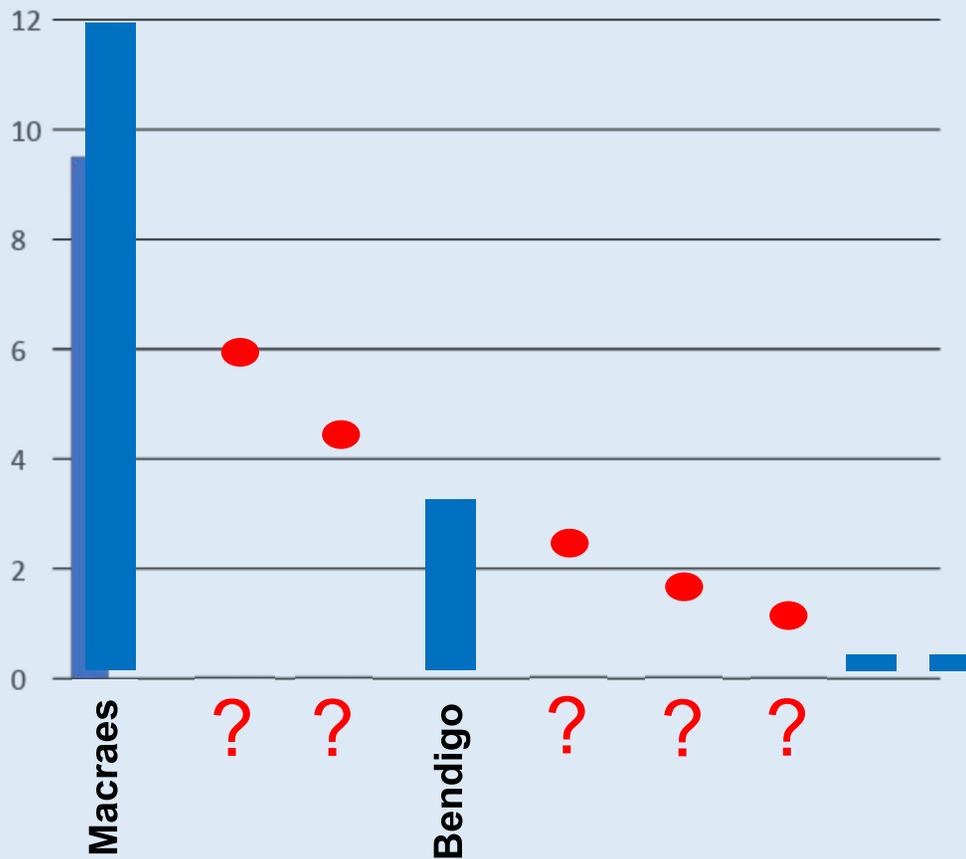
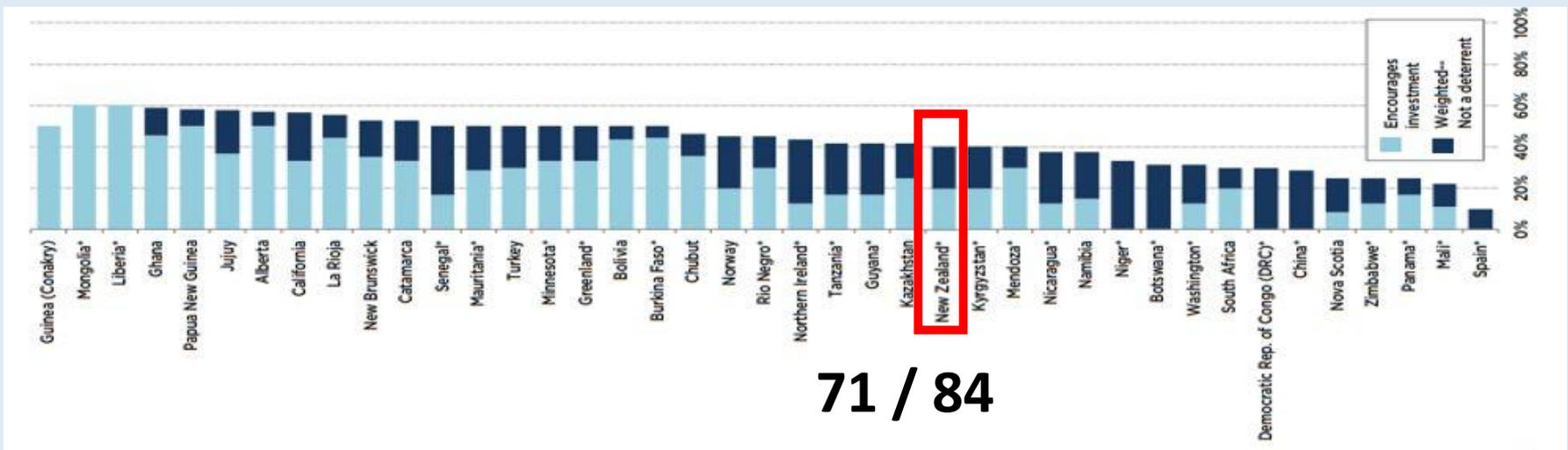
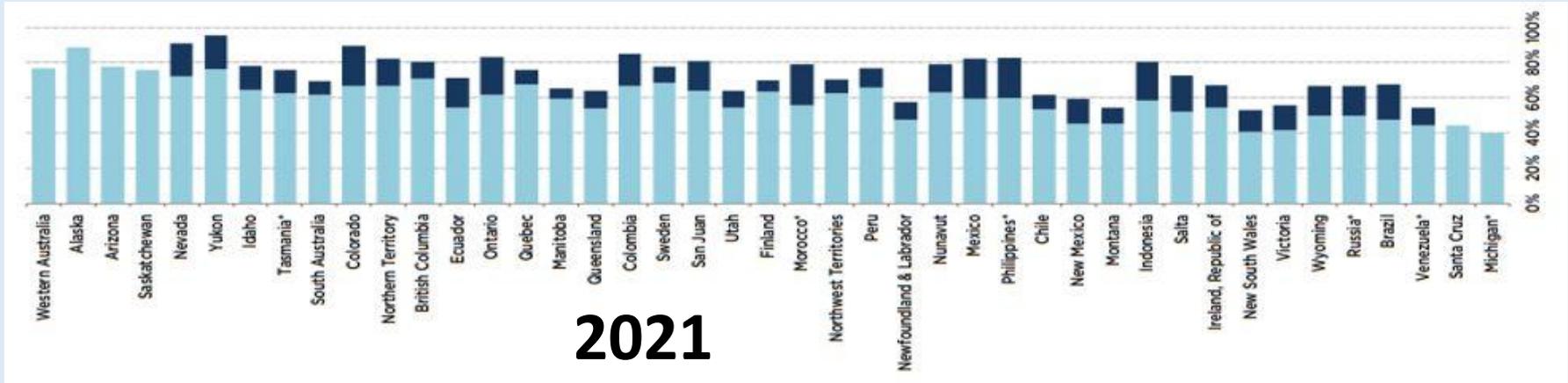


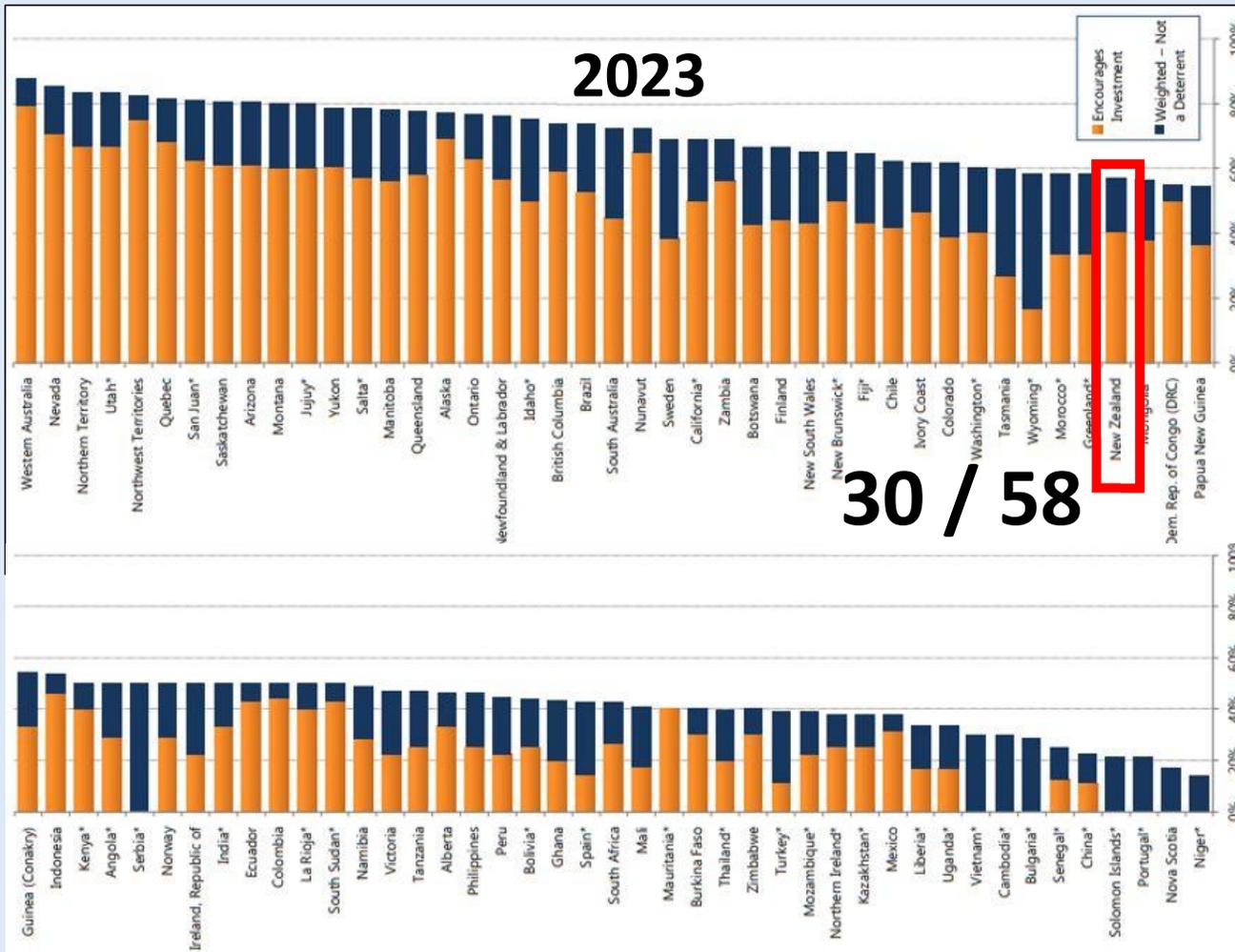
Figure 7: RAS down-plunge section - Drillhole intercepts

Santana Minerals ASX Release July 21 2021

Country Mineral Potential Rankings: Fraser Institute Annual Mining Survey 2021



Country Mineral Potential Rankings: Fraser Institute Annual Mining Survey 2023

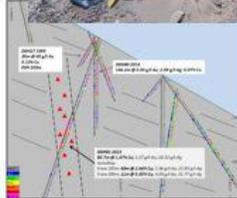
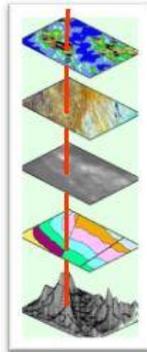


Key to Sustained Exploration and Mining: Prospectivity Cycle

**New Explorers +
\$\$\$\$\$\$**

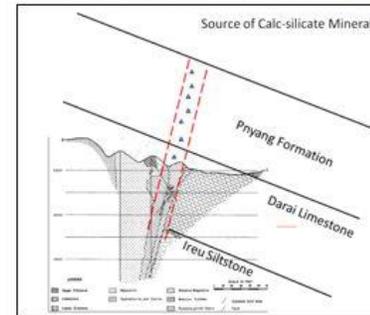
DATA & INFORMATION – FIELDWORK, LOGGING

DISCOVERIES!!

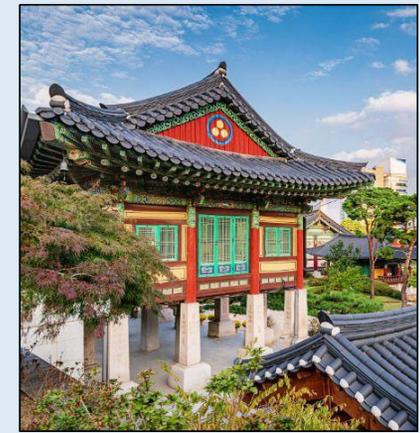
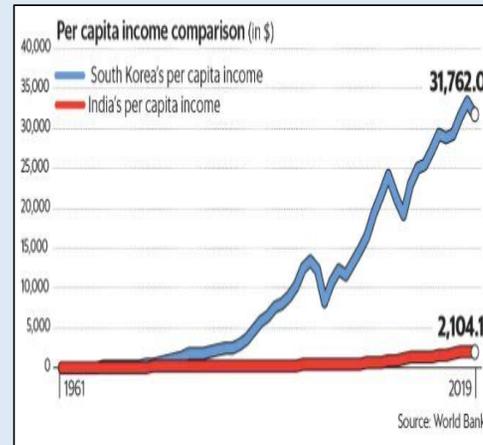
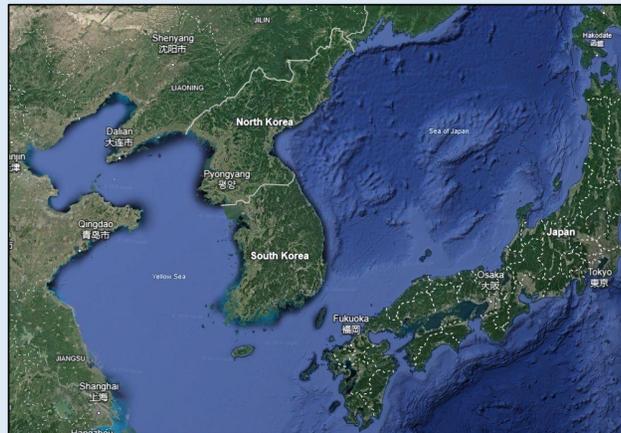


**New Geological
Knowledge,
Concepts & Models**

**Improved Targeting
& Drilling**



South Korea: Economic Powerhouse and Technology Innovator



Reliant in Offshore Critical Mineral Supply Chain

South Korea woos African nations over critical mineral supplies

High-tech economy aims to cut reliance on China for lithium and graphite



Mauritanian President Mohamed Ould Ghazouani, left, chairman of the African Union, speaks as South Korean President Yoon Suk Yeol listens during a joint news conference on June 4. © AP

5:54 PM · Jun 6, 2024 · 10.5K Views

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THE DIPLOMAT
READ THE DIPLOMAT. KNOW THE ASIA-PACIFIC

Rare Earths and Geopolitics: An Increasingly Messy Mix

EV world in serious trouble if China cuts off rare earth materials



INTERNATIONAL RELATIONS

South Korea's Yoon seeks deals in Central Asian resource push

Visit to Kazakhstan and other countries aimed at mineral access, less reliance on China



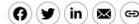
Bloomberg

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Green Hyperdrive

South Korea Said to Build Lithium Reserves to Aid Battery Sector

- Nation allocates \$171 million to buy critical minerals
- Officials have already purchased lithium carbonate this year



By Annie Lee and Heejin Kim
May 20, 2024 at 8:33 PM GMT+12

GEOPLITICS

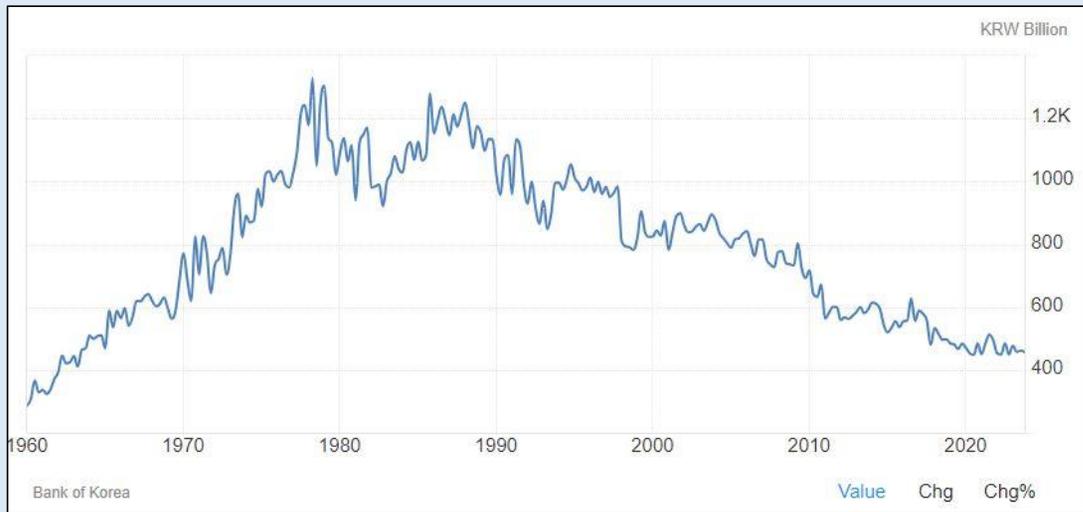
Resource realism: The geopolitics of critical mineral supply chains

September 13, 2023 Share

Australia-Korea pact on green tech and critical mineral supply



...Mining a Sunset Industry – 0.2% of GDP in 2020



Mining and quarrying production was \$1.78 billion in 2021, of which limestone accounted for 78%, followed by anthracite (9.3%), iron ore (2.7%), and quartzite (1.9%)



YouTube
GeologyUpSkill · 2:36

LOST MINES!

Lost Mines of South Korea

Watch >

Uploaded: Nov 3, 2022 · 1.97K Views · 101 Likes

Rule #3 in my 20 Golden Rules of Mineral Exploration is Map The Old workings". There are historical mine... More ▾

Poor Perception of Prospectivity: “Anti-Prospectivity” Cycle

Explorers
\$\$\$\$\$

Less Geologic data, hard to find, fragmented



No new Discoveries

SAMPLEID	SAMPFROM	SAMPTO	Au_ppm_B
EX100241	6.3	7.3	0.03
EX100242	7.8	9.3	0.03
EX100243	11.1	12.1	0.02
EX100244	15.2	16.5	0.01
EX100245	16.9	18.6	0.02
EX100246	18.6	20.6	0.03
EX100248	20.6	22.6	0.02
EX100249	22.6	24.8	0.02
EX100250	25.1	26.1	0.02

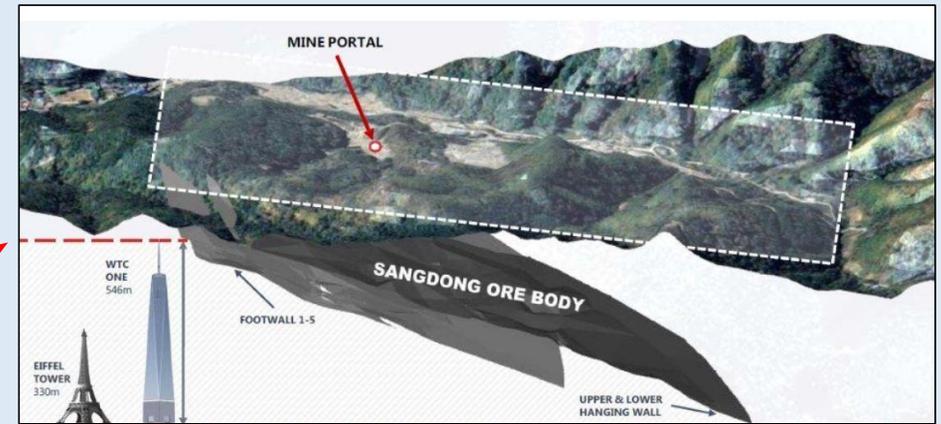
**Limited geological
innovation / new ideas**



**Limited / ineffective
targeting & drill testing**



Fresh Look: Korea Part of Major North Asian Metallogenic Province



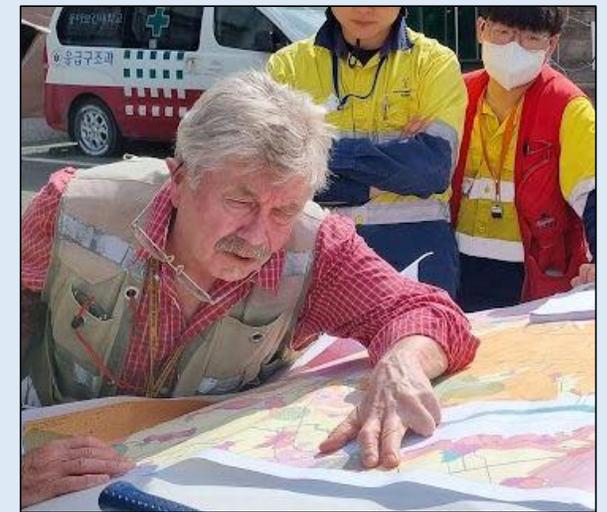
**Eunsan: 3.61m @ 603.64g/t Au & 4264g/t Ag*
DIRECT SHIPPING ORE!**



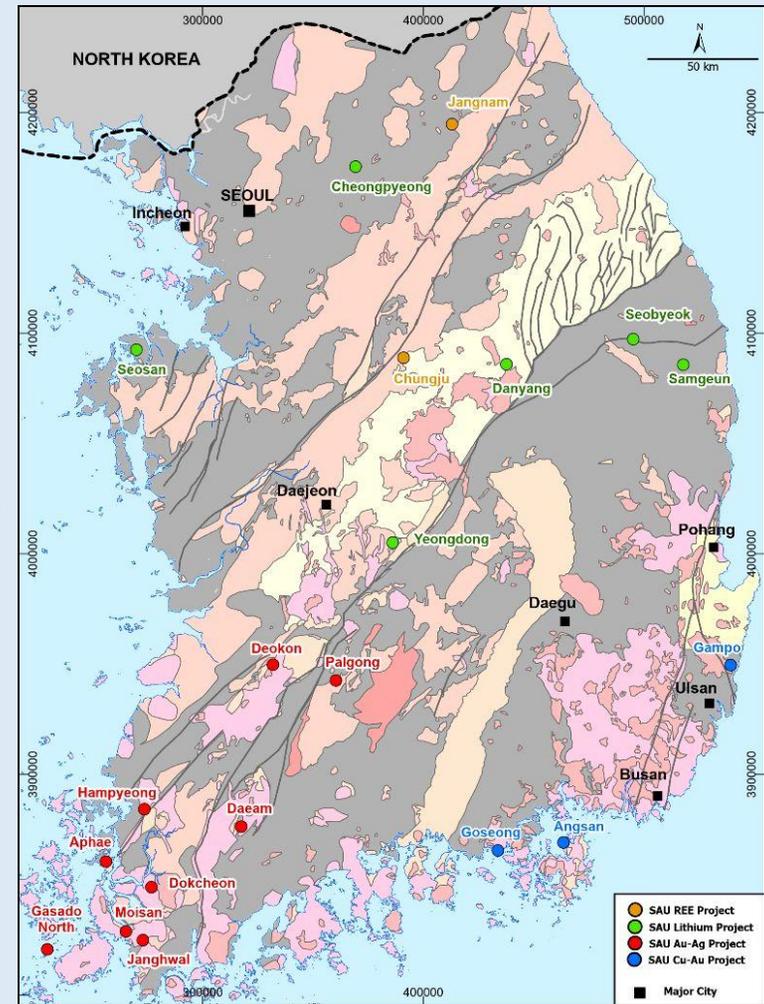
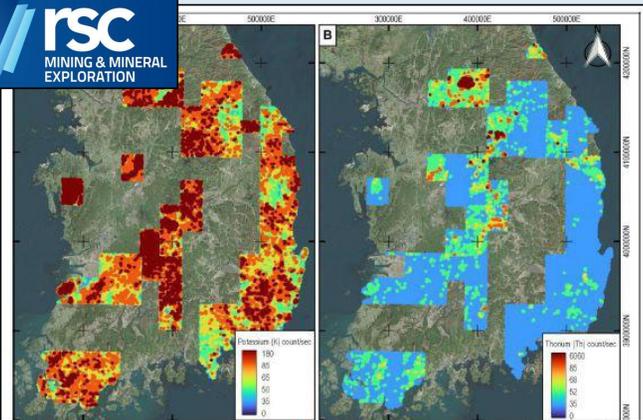
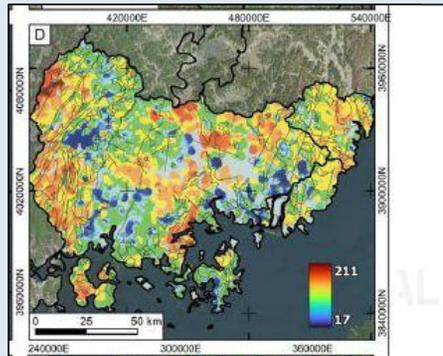
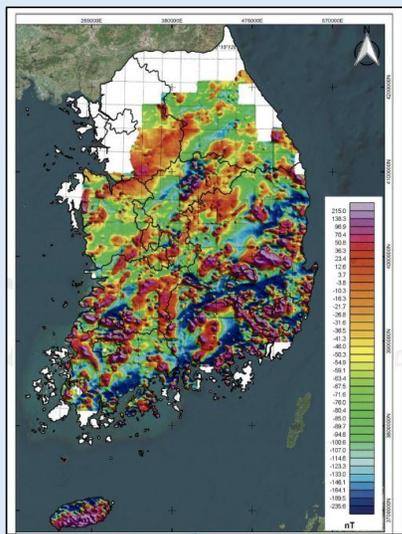
South Korea: Maybe it's "Exploration Poor" not "Resources Poor" Large Search Space



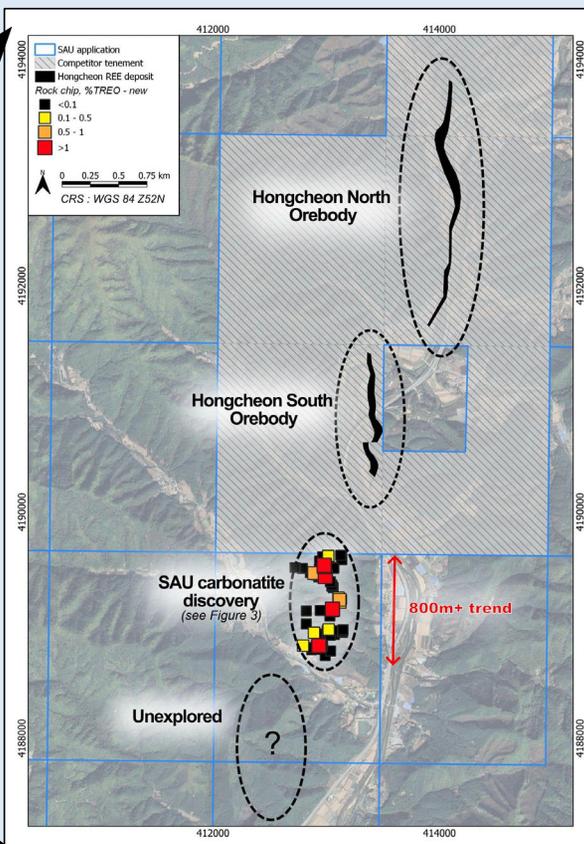
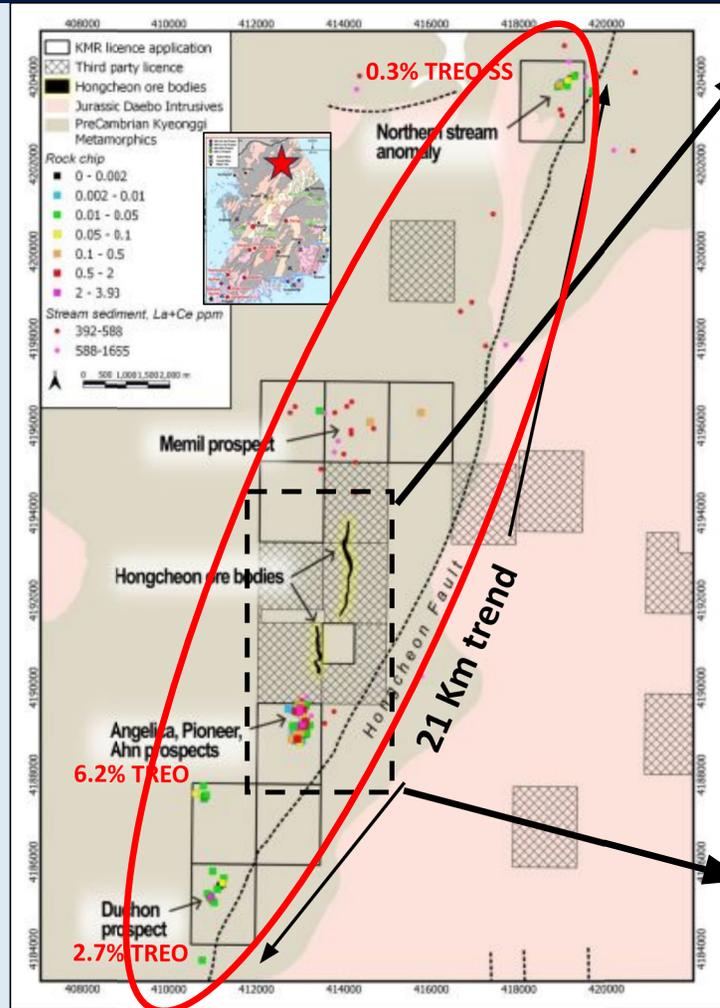
Korea Metal Resources: Korean Explorer Challenging the Resources-Poor Narrative



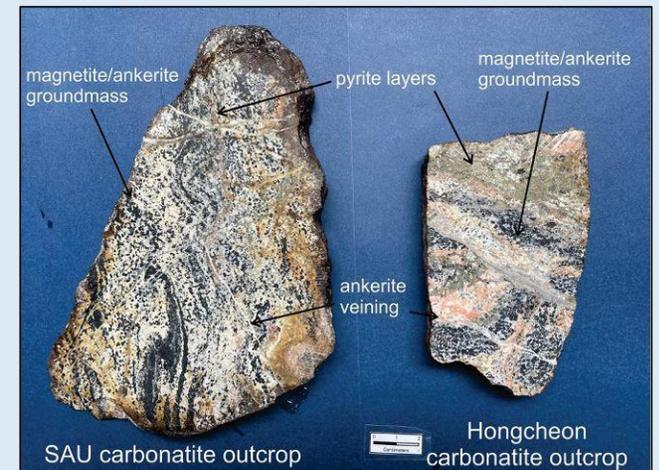
Major Data Compilation and Targeting Campaign: Country-wide Exploration Portfolio Au Cu, REE Li



REE Exploration: Jangnam Carbonatite

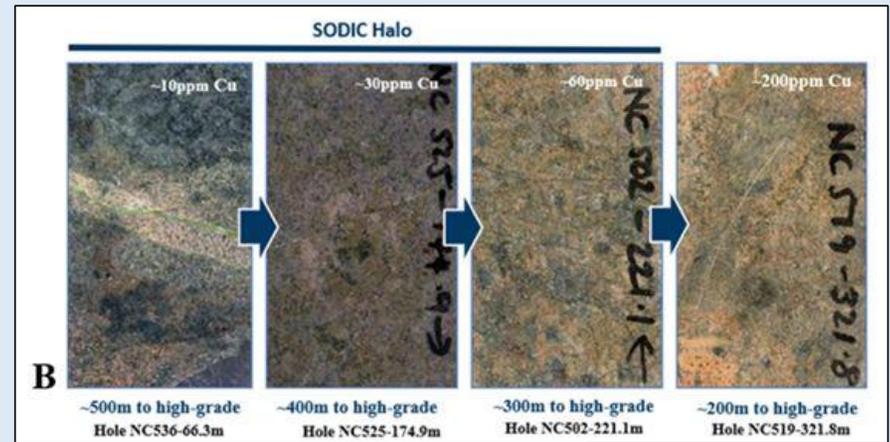
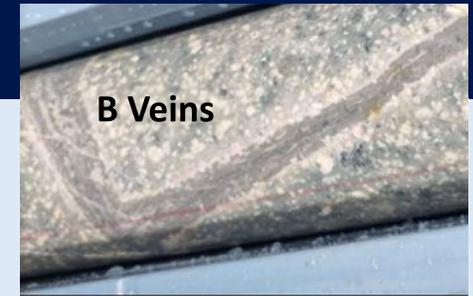
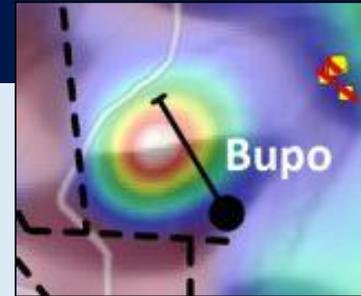
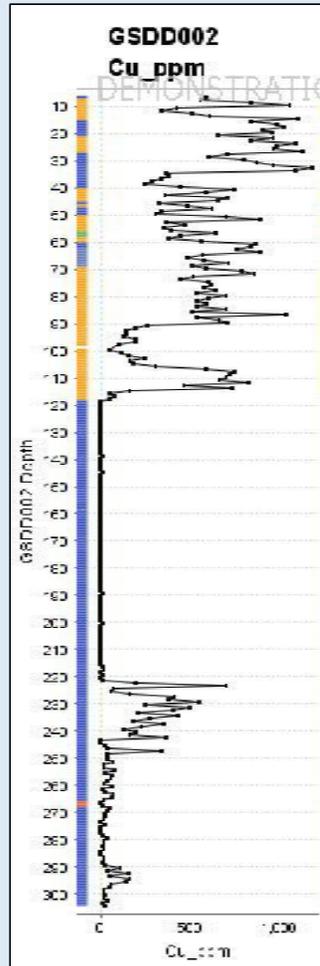
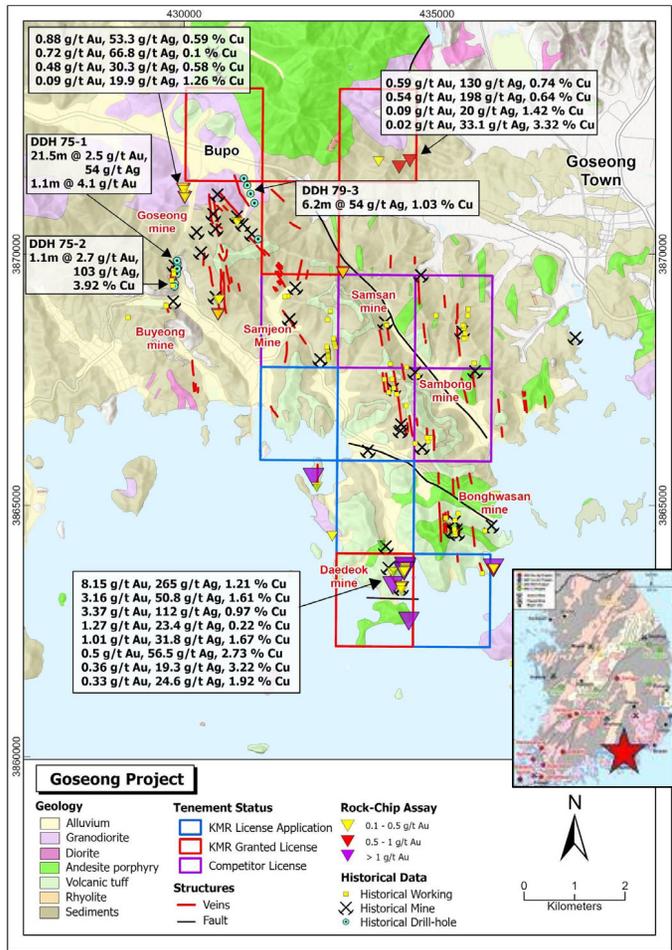


Hongcheon REE Deposit
26Mt @ 2.1% TREO



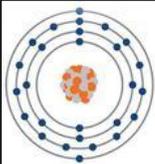
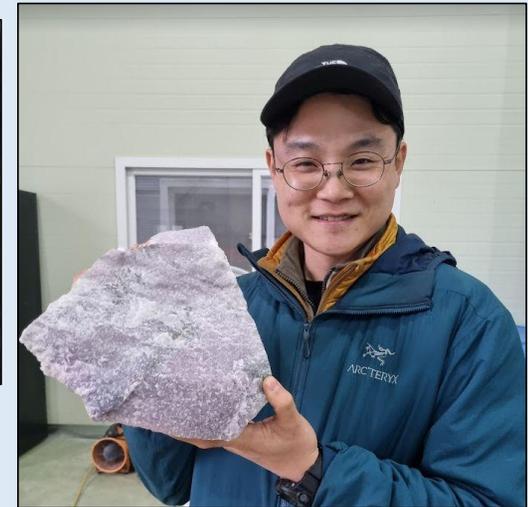
Highway

Copper Exploration: Goseong Project



Harris et al 2022 Cadia Cu-Au Deposit

Lithium Exploration



KoBold Metals
Finding the materials of the future with AI

Takeouts

- Perceptions of mineral prospectivity have a major impact on exploration investment
- New Zealand exploration industry currently benefiting from positive prospectivity perception and new discoveries
- Mining is a sunset industry in South Korea - heavily reliant on mineral imports
- South Korea has poor perceptions of prospectivity – impacted negatively on exploration investment – totally underexplored by modern exploration methods
- Revitalised South Korean exploration challenging the “Resources Poor” narrative
- Exploration industry needs to be supported over the long term to ensure a healthy mining industry and security of supply