

AN INTRODUCTION TO THE KHUNDII MINERALS DISTRICT



THE BAYAN KHUNDII MINE

2026 GEO-SYMPOSIUM

September 14th 2026
1 Year Anniversary of Gold Production



GLOBAL MAGMATIC ARCS – PRIMARY TECTONIC ENVIRONMENTS FOR PORPHYRY & EPITHERMAL DEPOSITS

Khundii Minerals District Relative to Global Distribution of Arc Related Gold and Copper Deposits

PORPHYRY & EPITHERMAL DEPOSITS

- Most global porphyry and epithermal deposits are ‘young’ and hosted by Cenozoic rocks (0 to 66 Ma).
- Khundii Minerals District hosted by Carboniferous to Permian rocks in the Central Asian Orogenic Belt (CAOB)
- Ages of major deposits range from 370 to 280 Ma.
- Preservation of deposits is critical

UNDER-EXPLORED REGION WITH EXCELLENT POTENTIAL

Central Asian Orogenic Belt and Eastern Tethysides:

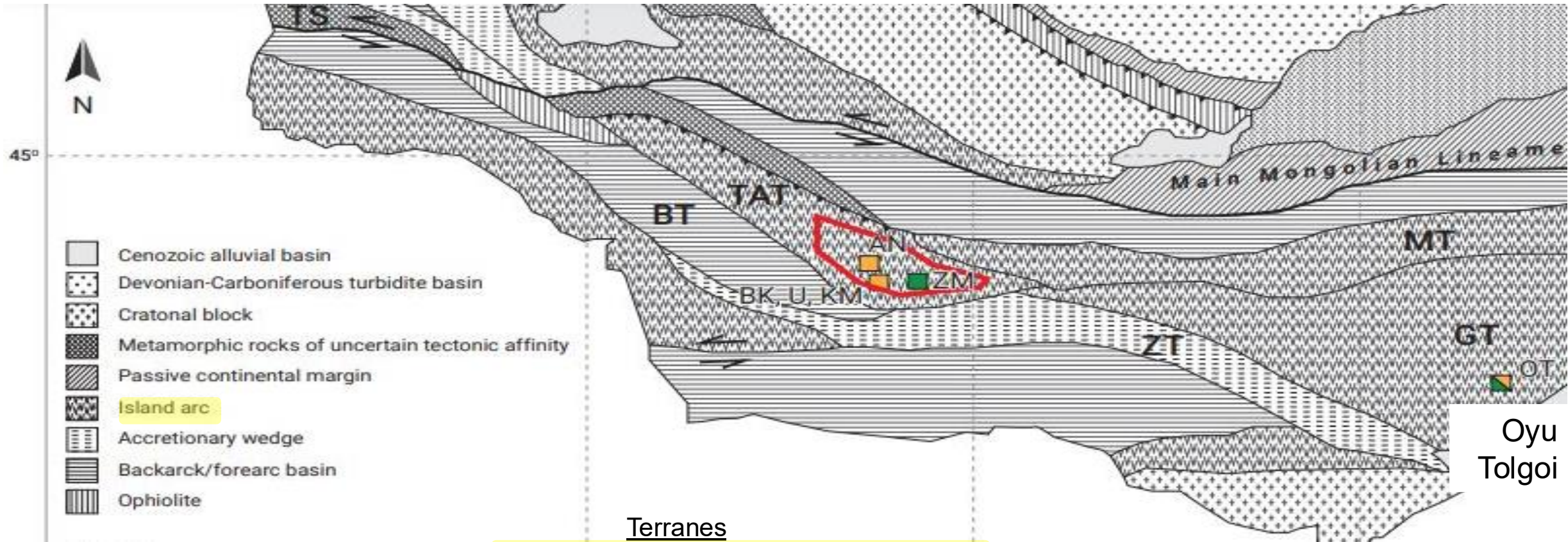
“Remoteness, harsh terrain, and lack of infrastructure impeded exploration in many areas, with the western end of the tract having not received much attention”

USGS 2010



Locations of giant ore deposits and significant arc-related metallogenic belts (turquoise lines).
Base map modified from World of Maps (© Bruce Jones Design, 2010).

TERRANE MAP OF SOUTHWEST MONGOLIA



Khundii Minerals District

Terranes

TAT: Trans Altai island arc (Carboniferous)

MT: Mandalovoo island arc

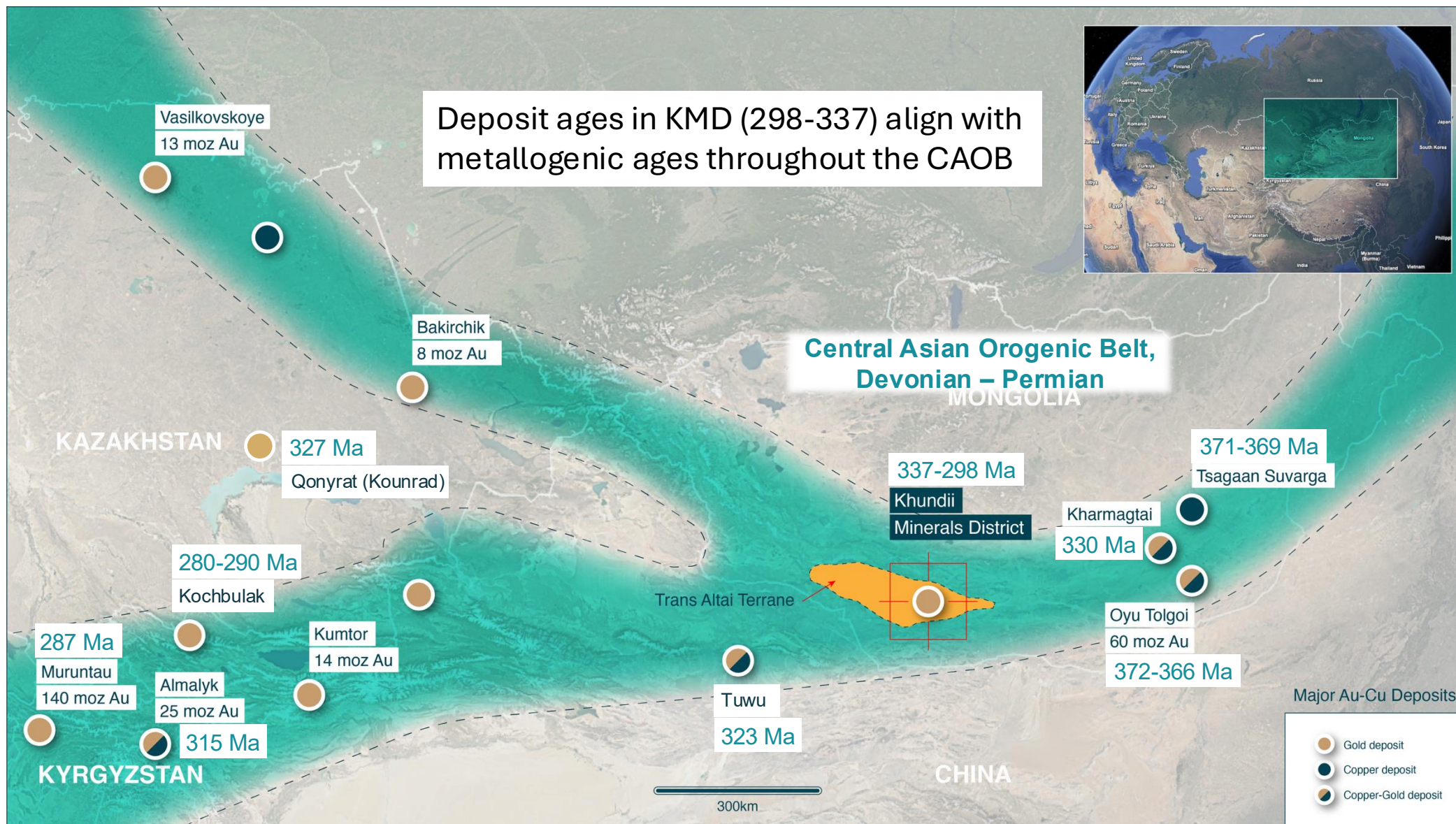
BT: Baraan backarc/forearc

TS: Tseel metamorphic

GT: Gurvansaikhan island arc terrane (Late Devonian)

ZT: Zoolen accretionary wedge

KHUNDII MINERALS DISTRICT LOCATED AT INTERSECTION OF E-W TIAN SHAN AND NW-SE ALTAI MOUNTAIN STRUCTURAL TRENDS



ERDENE'S TIMELINE IN SOUTHWESTERN MONGOLIA

- 2005** – Acquisition of Gallant Minerals assets (coincided with bull market for Mo - \$45/lb)
Subsequent discovery of **Zuun Mod porphyry-style Mo-Cu deposit**
- 2009** – Commenced **regional exploration over 110,000 km²** in SW & W Mongolia
(initial assessment completed in 2017)
- 2011** – Discovery of **Altan Nar IS epithermal Au-Ag-Pb-Zn (Cu) deposit**
- 2015** – Discovery of **Bayan Khundii (BK) LS epithermal Au-Ag deposit**
- 2021** – Discovery of Au mineralization at **Khar Mori (Dark Horse Mane) and Ulaan**, near BK
- 2024** – **Paper describing KMD published** in journal *Economic Geology*
- 2025** – **Gold production** commenced at Bayan Khundii mine

GEOLOGICAL OVERVIEW & FIRST DESCRIPTIONS OF EPITHERMAL DISCOVERIES

 Economic Geology, v. XXX, no. XX, pp. X–X



Epithermal Gold Discoveries in the Emerging Khundii Metallogenic Province, Southwest Mongolia

M. A. MacDonald,^{1,†} G. Bat-Erdene,² M. X. Gillis,³ P. J. Dalton,³ I. Kavalieris,⁴ B.-E. Khashgerel,⁴
A. Kloppenburg,⁵ A. Coote,⁶ and J. W. Hedenquist⁷

¹ 15 Stephen Street, Dartmouth, Nova Scotia B2Y 2L2, Canada

² Erdene Resource Development Corporation, Monrud LLC Building, 2nd Floor, Baga Toiruu, Chingeltei District, Ulaanbaatar, Mongolia

³ Erdene Resource Development Corporation, 99 Wyse Road, Suite 1480, Dartmouth, Nova Scotia B3A 4S5, Canada

⁴ Plus Minerals LLC, River Garden 309, Khan Uul District 17th Khoroo, Ulaanbaatar, Mongolia

⁵ 4DGeo, Daal en Bergselaan 80, 2565AH The Hague, Netherlands

⁶ Applied Petrologic Services & Research Ltd, 747 Aubrey Rd., Wanaka 9305, New Zealand

⁷ Department of Earth and Environmental Sciences, University of Ottawa, Ottawa, Ontario K1N 6N5, Canada

DISCOVERY OF ZUUN MOD Mo-Cu DEPOSIT PROVIDED IMPETUS FOR REGIONAL EXPLORATION

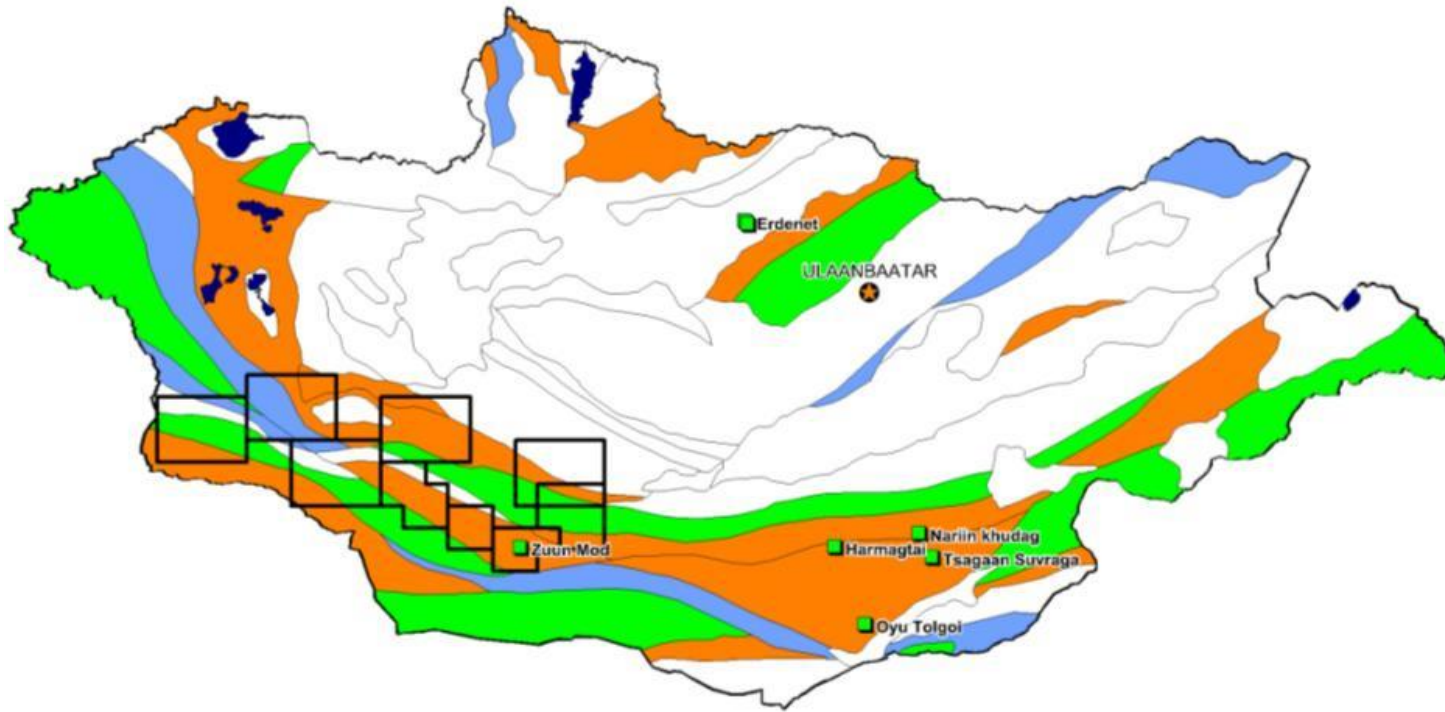
Current Resource Estimate

333.5 M lbs. Mo, 384.2 M lbs. Cu

One of the largest undeveloped Mo-Cu resources in central Asia



REGIONAL EXPLORATION SW MONGOLIA AREA OF INTEREST (AOI; 2009)



Terrane map showing the location of the SW Mongolia AOI

Compilation of existing geological, geochemical and geophysical data

Re-processing and interpretation of ASTER satellite data

Regional ground exploration and detailed follow-up geological, geochemical and geophysical studies (magnetic, IP, gravity)

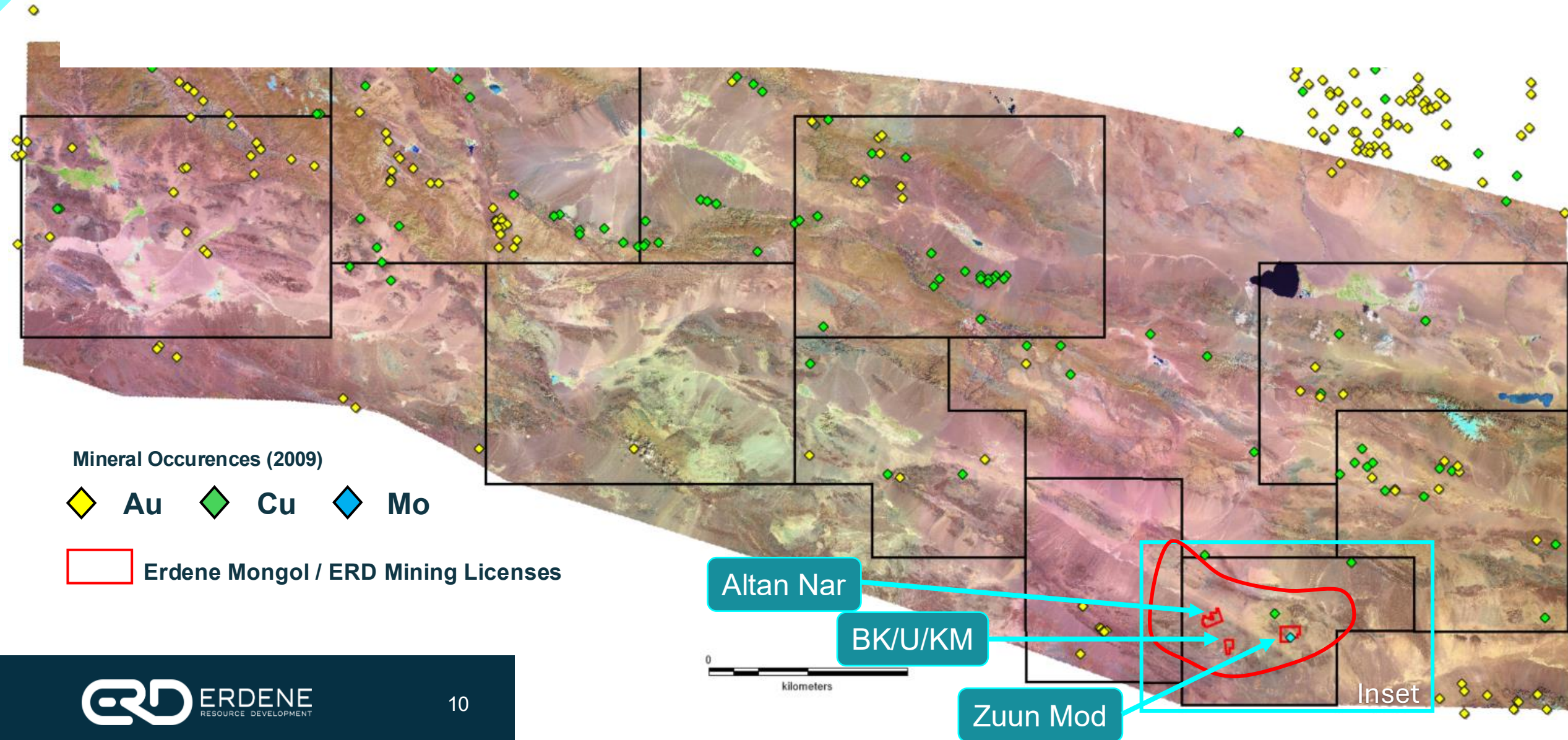
Short-wave infrared (SWIR) analysis of alteration minerals

Granite fertility study (Loucks, 2014)

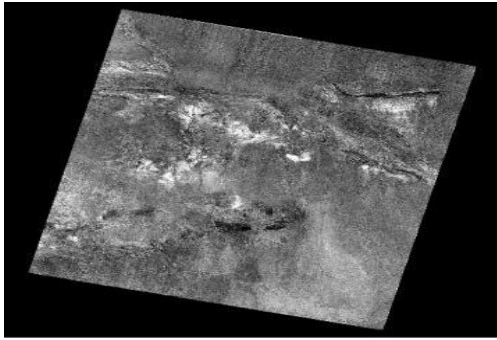
Stream sediment survey over entire TAT (N=1,317)

TRANS ALTAI AREA OF INTEREST AND 2009 MRPAM MINERAL DATABASE

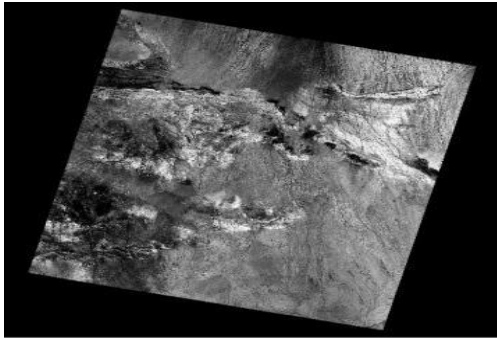
The lack of known mineral occurrences in the KMD highlights the under explored nature of the district



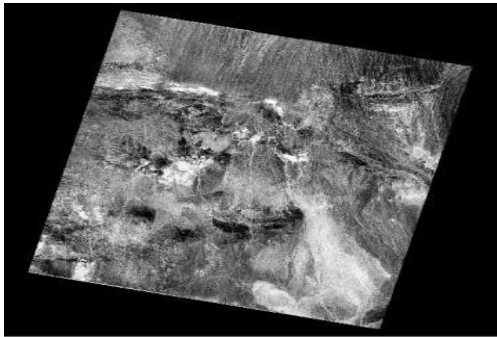
TARGET DEFINITION USING MULTISPECTRAL IMAGERY



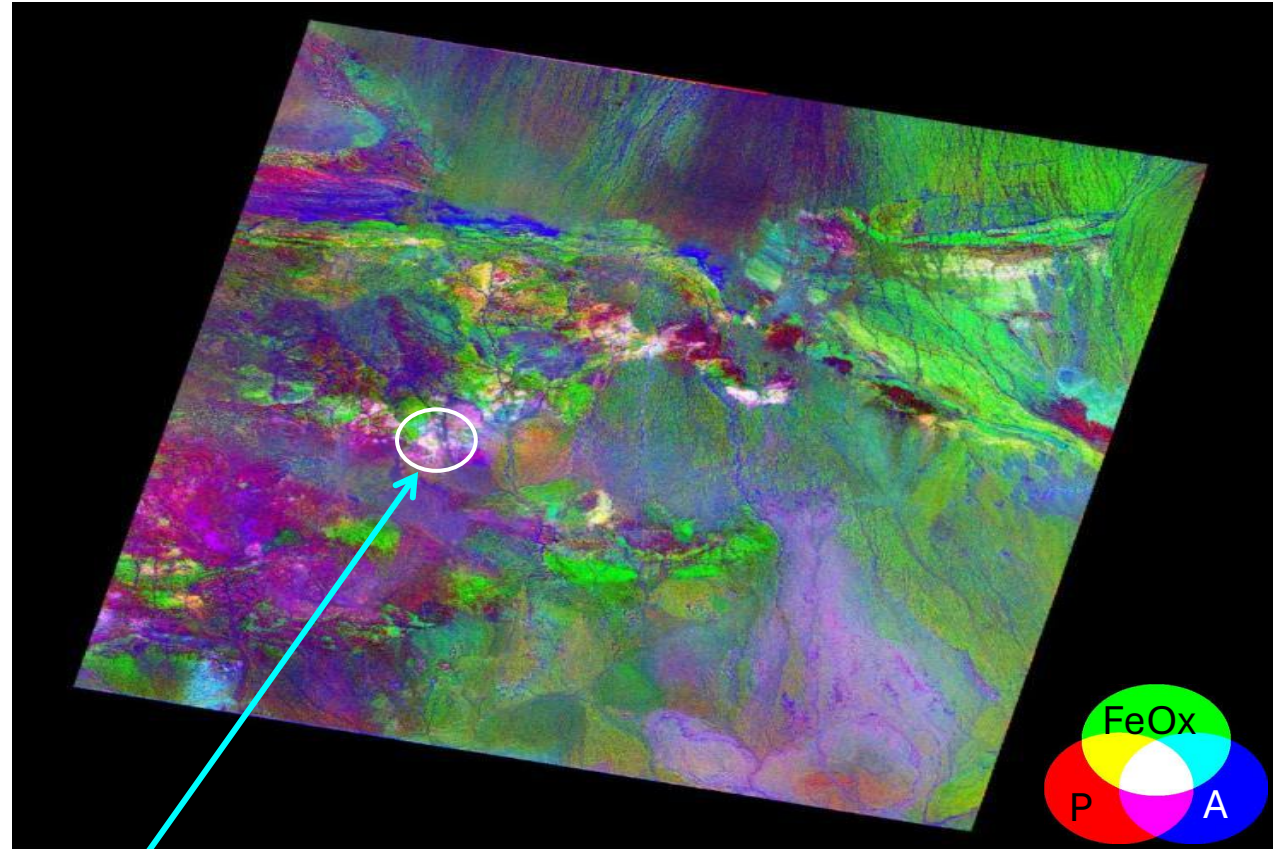
Phyllic



FeOx

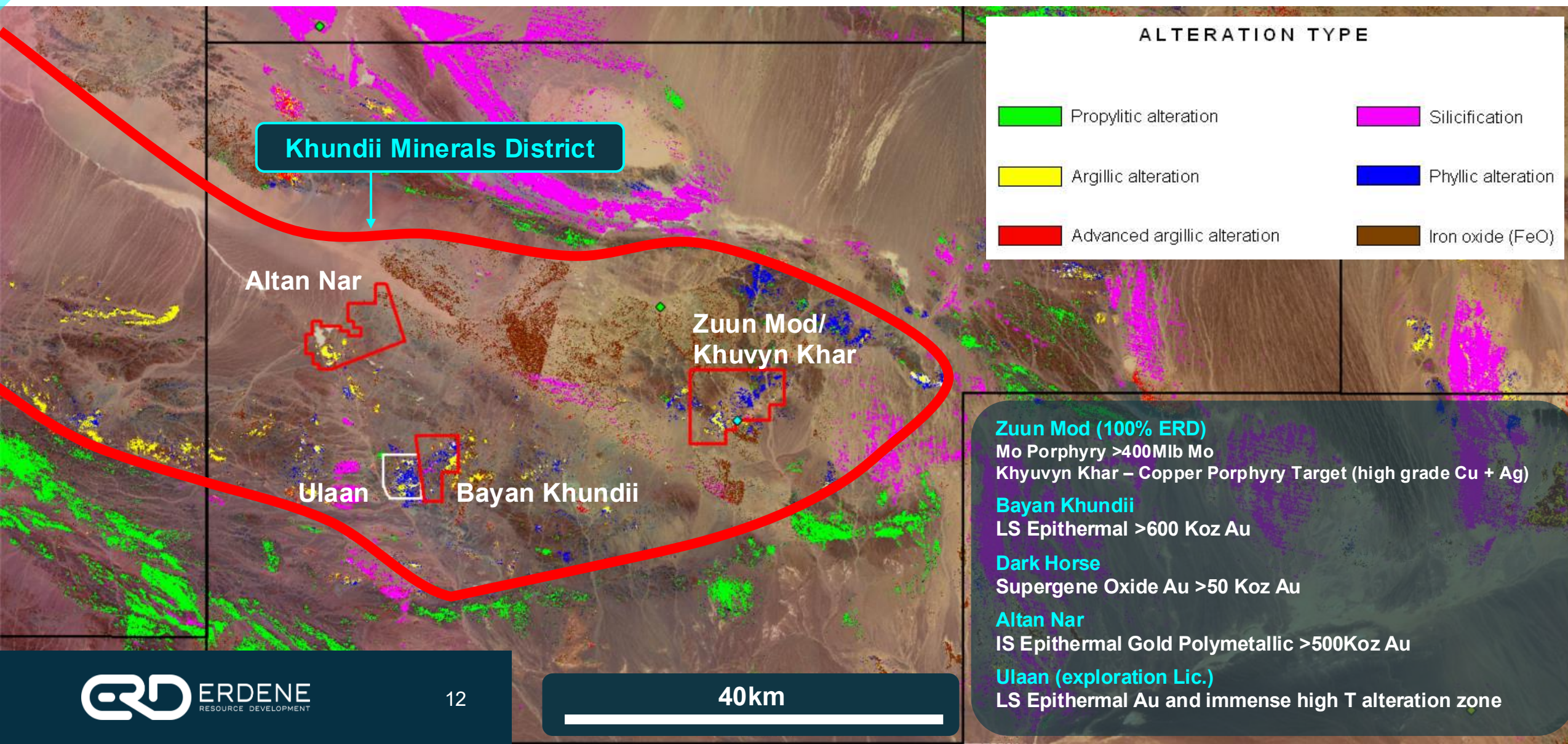


Argillic

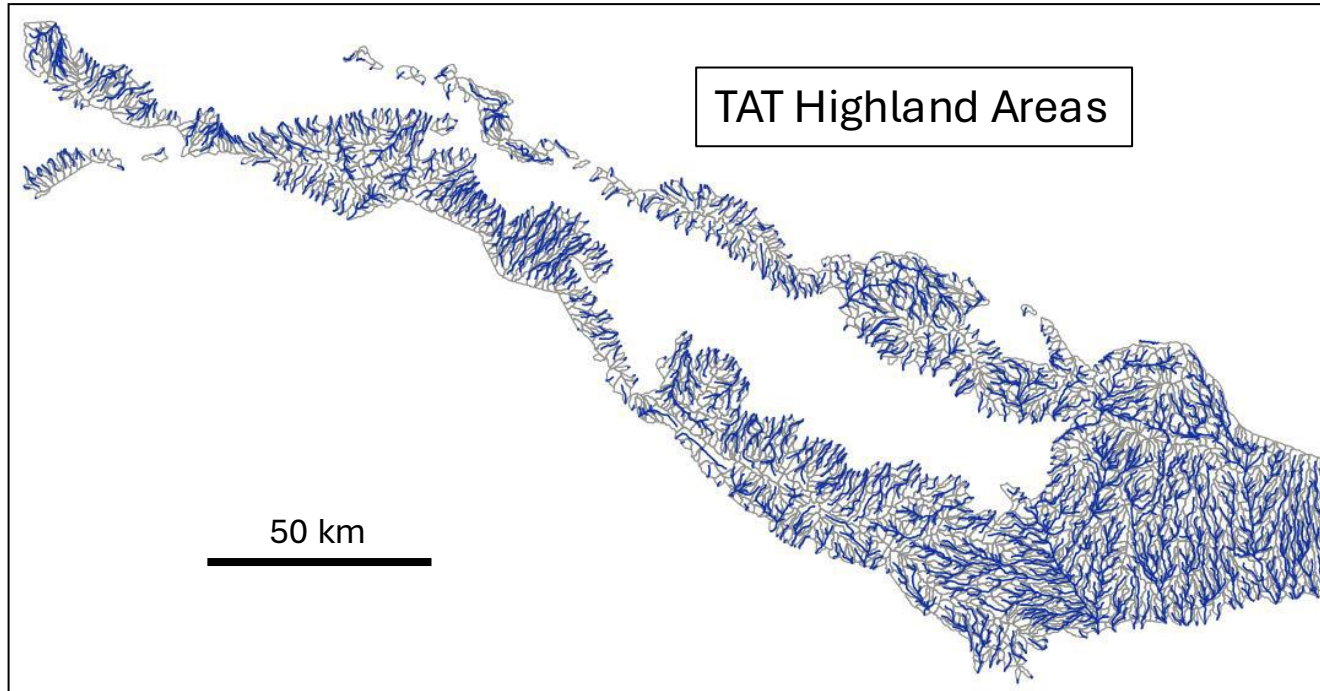


Zones of coincident alteration types will occur as brighter patches of lighter hues.

KHUNDII MINERALS DISTRICT WITH SPECTRAL ALTERATION SIGNATURES (ASTER)



STREAM SEDIMENT DATA – 2016 sampling program

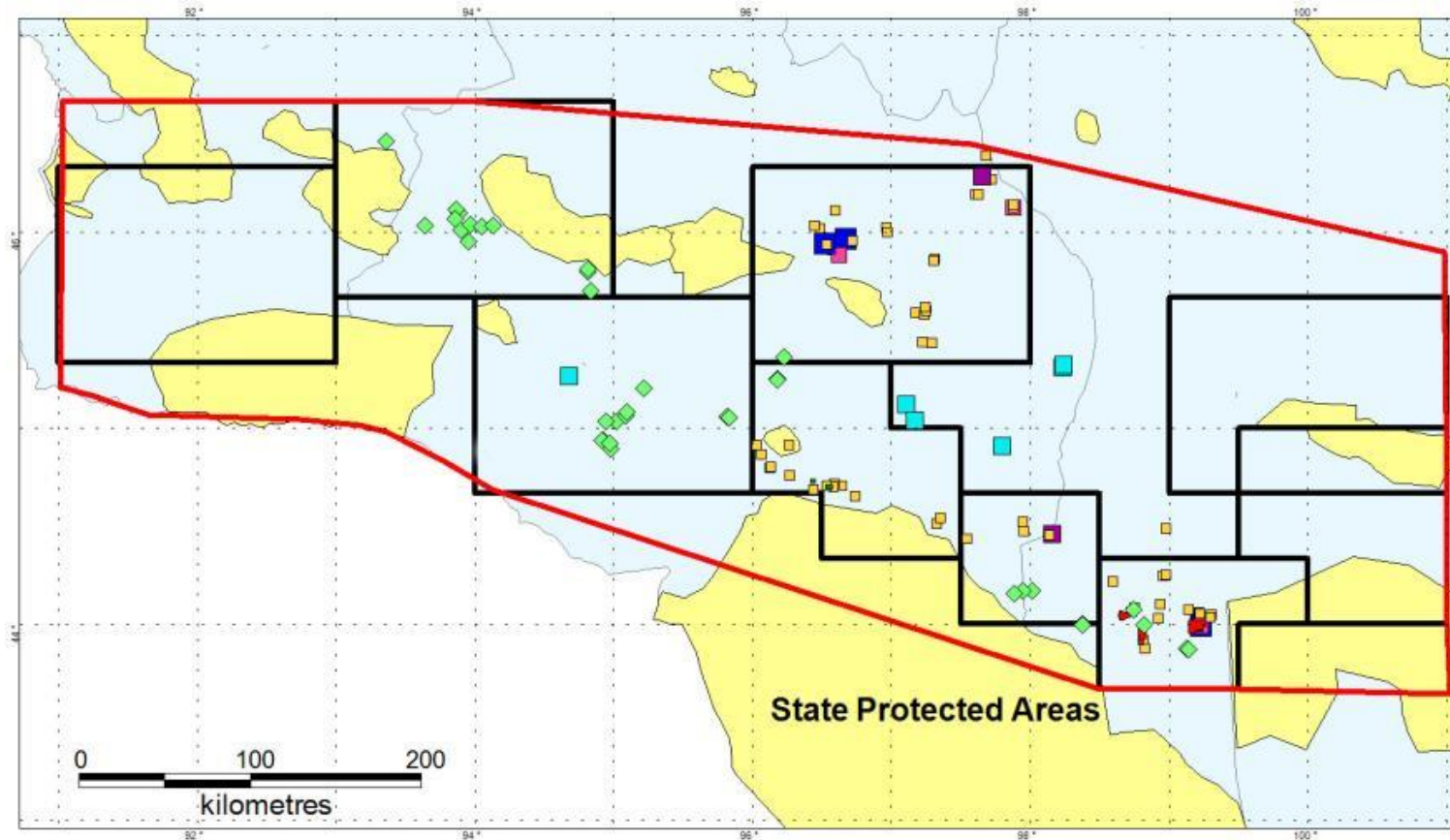


GIS Software used to define catchments greater than 2 km² for Trans Altai Terrane 'highland areas' (avg. 9 km²)

1,317 samples collected

Results confirm known occurrences & deposits and multiple targets defined by combining stream sediment and satellite data

GRANITE FERTILITY INDICATED FERTILE INTRUSIONS THROUGHOUT THE AOI

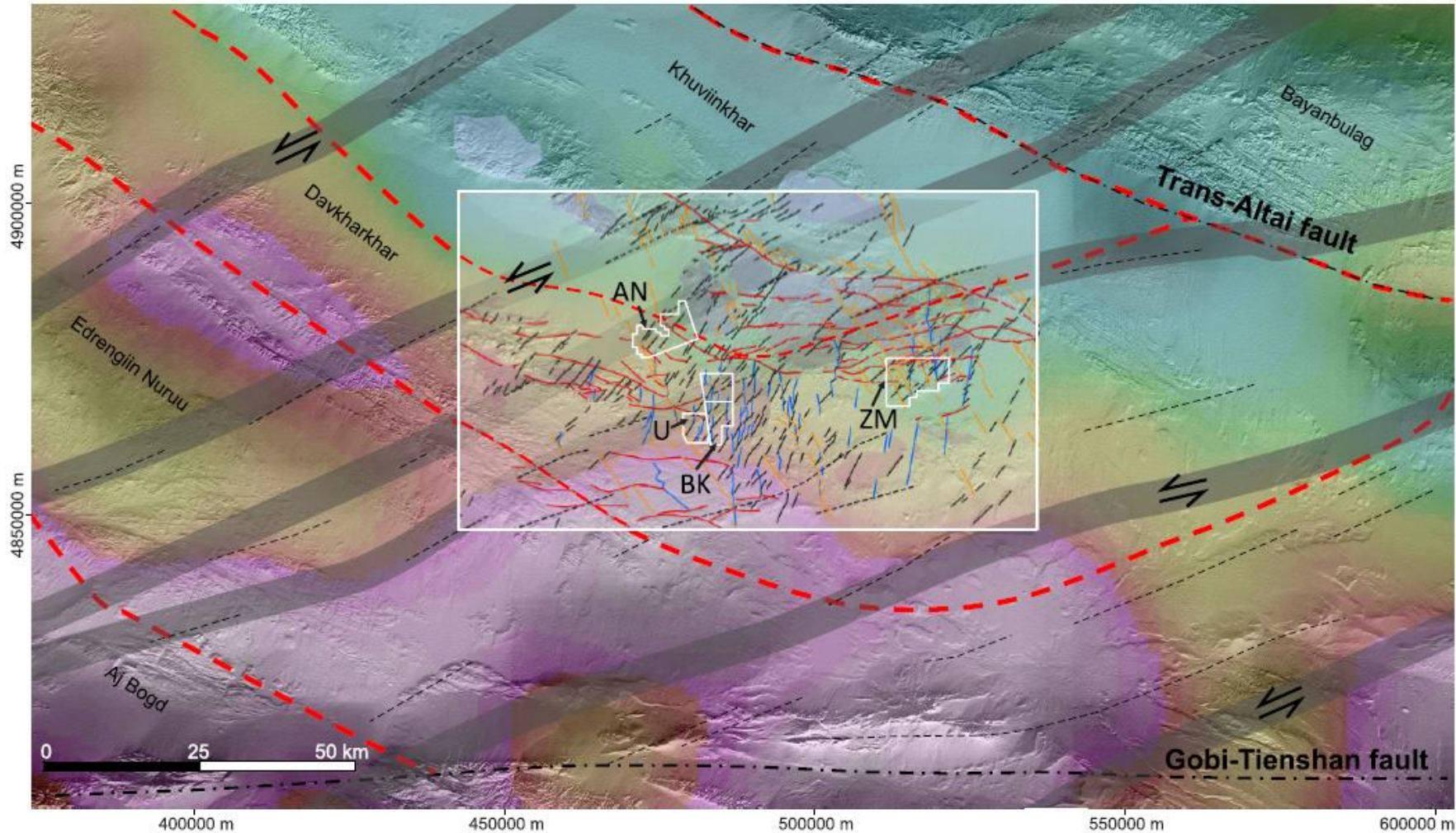


Granite fertility evaluated using methodology of Loucks (2014)

Samples of granitic plutons collected and evaluated for potential fertility

Numerous plutons throughout the AOI and the KMD considered fertile for Cu, Cu-Au and Au

REGIONAL GRAVITY & STRUCTURE – LARGE ENE SINISTRAL BASEMENT STRUCTURES



ENE structures interpreted as 1st order basement structures

Offsets in gravity indicate sinistral horizontal component of offset

Mineral deposits are over or near major structures

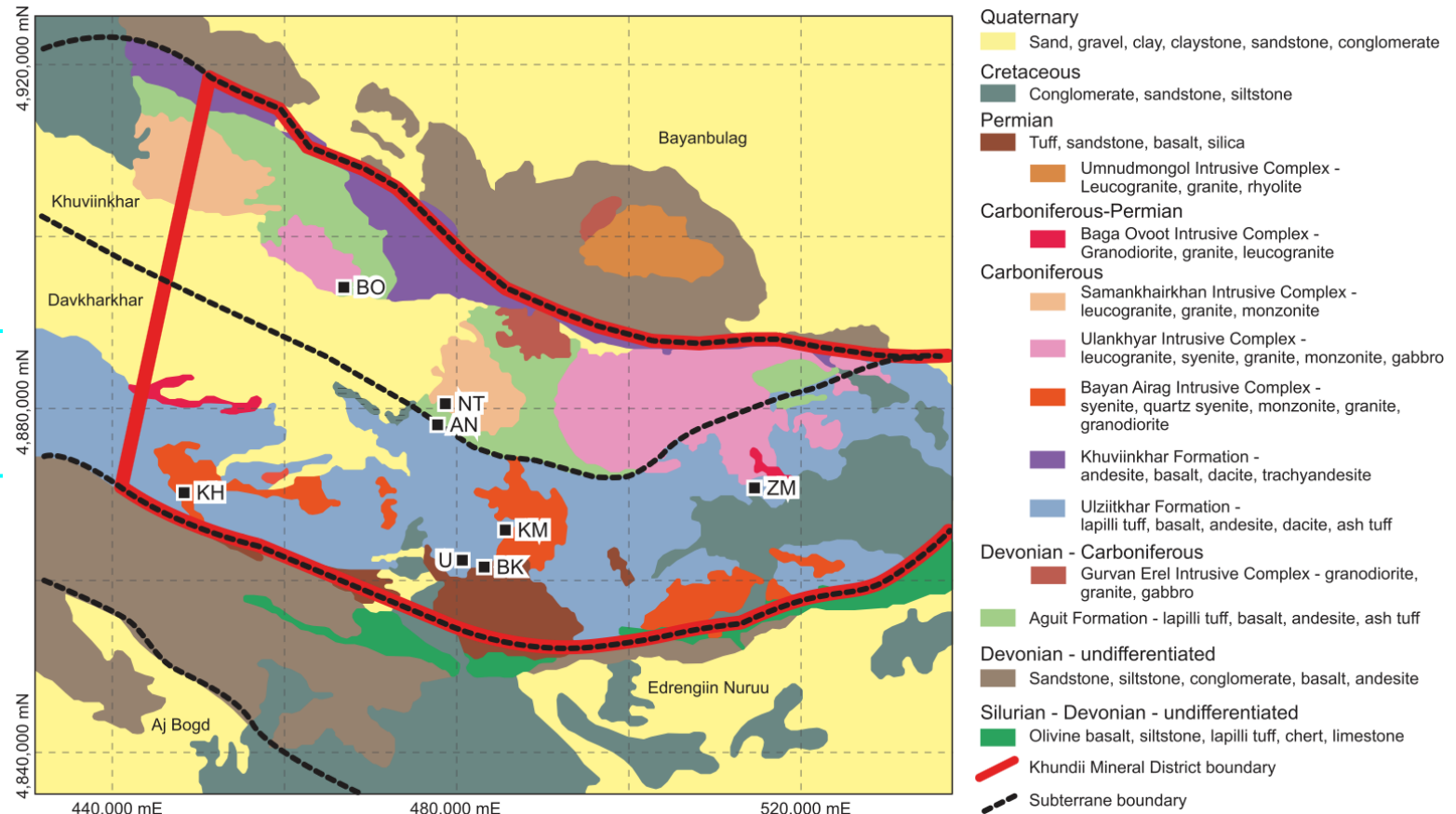
DETAILED MRPAM-CONTRACTED GEOLOGICAL MAPPING 2014-2018

Provides Geological Framework For Future Exploration

6 - 1:50,000 maps completed over KMD and adjoining areas (MRPAM contracted surveys)

TAT now subdivided into 5 sub-terrane

Recent significant discoveries are within Davkharkhar sub-terrane



KHUNDII MINERALS DISTRICT – MULTIPLE HIGH-QUALITY DEPOSITS AND PROSPECTS

Four Gold Discoveries, Molybdenum-copper Deposit and +20 High Priority Targets

Discovered and defined multiple deposits & prospects since 2010

Three main target areas:

BAYAN KHUNDII (BK)

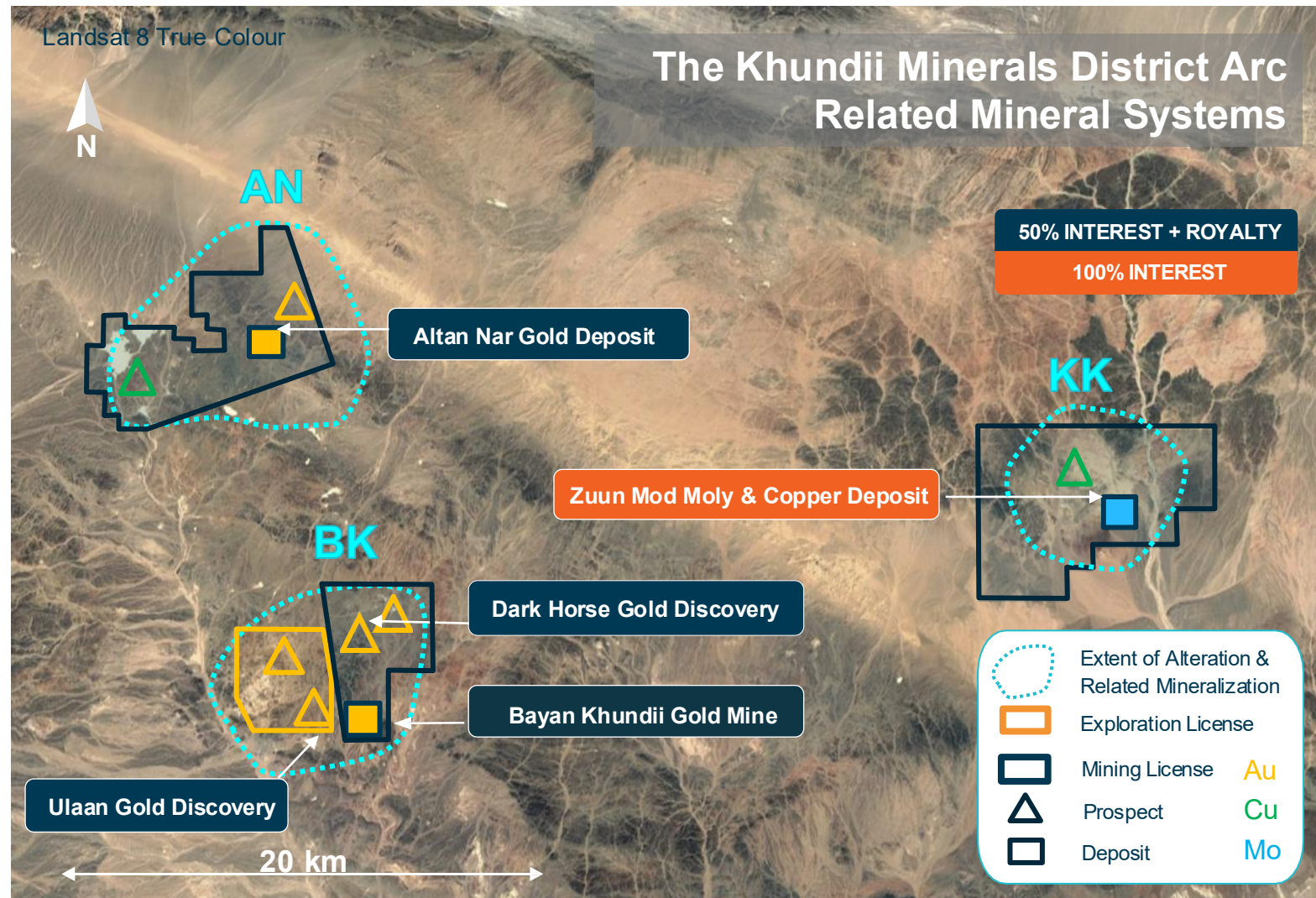
Au, Ag low sulphidation epithermal

ALTAN NAR (AN)

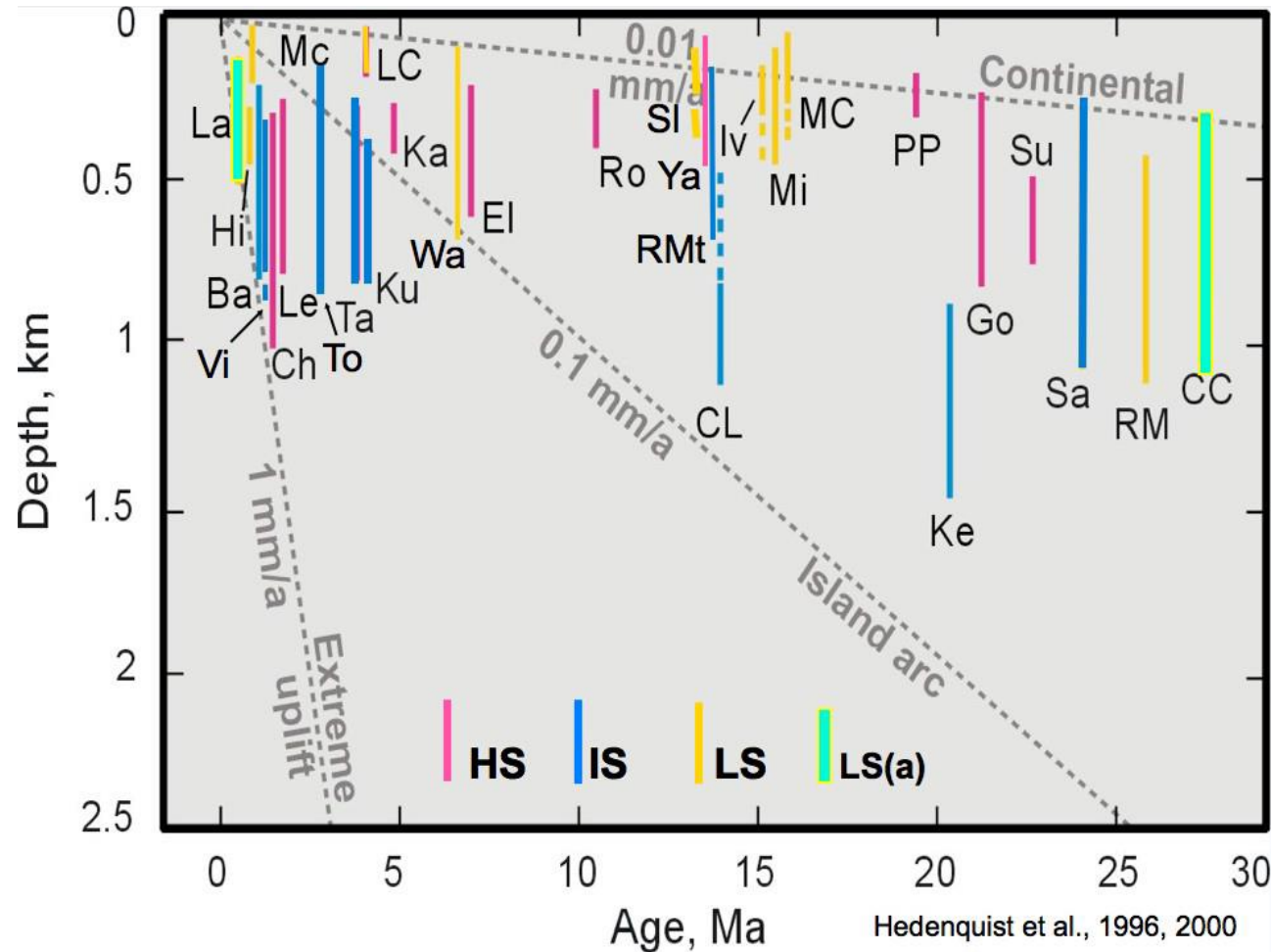
Au-Ag-Pb-Zn intermediate sulphidation

KHUVYN KHAR (KK)

Cu-Mo porphyry



UNIQUE EROSIONAL HISTORY PRESERVED CARBONIFEROUS EPITHERMAL AND PORPHYRY MINERAL DEPOSITS IN KHUNDII MINERALS DISTRICT



Abundance of illite at BK indicates a minimum of 150-200 m erosion before being covered by post-mineral rocks

Ar/Ar age dating indicates Carboniferous age for epithermal mineralization (BK 336.8 $\pm$ 0.5 Ma; AN 309.7 $\pm$ 0.5 Ma)

Even the deepest IS epithermal deposits (e.g. Kelian; 1.5 km) would be eroded after 20 m.y.

The Bayan Khundii deposit would have been eroded by 300 Ma if avg. island arc erosion rates persisted

THE KHUNDII MINERALS DISTRICT

More than 20 years of sustained methodical mineral exploration in an underexplored region has resulted in the discovery of the new Khundii Minerals District

The presence of porphyry Cu-Mo, skarn, LS, IS epithermal deposits and the presence of HS epithermal prospect indicate the KMD has all the components of a fertile magmatic arc

Most exploration to date was shallow (<250 m depth)

Excellent potential for additional discoveries at depth and along strike

The Khundi Minerals District

