



Method of abandoned underground mine site characterisation and risk assessment of Hungary

Attila Jánkfalvi

Geological and Geophysical Institute of Hungary

ISZA 2014 March 28-30



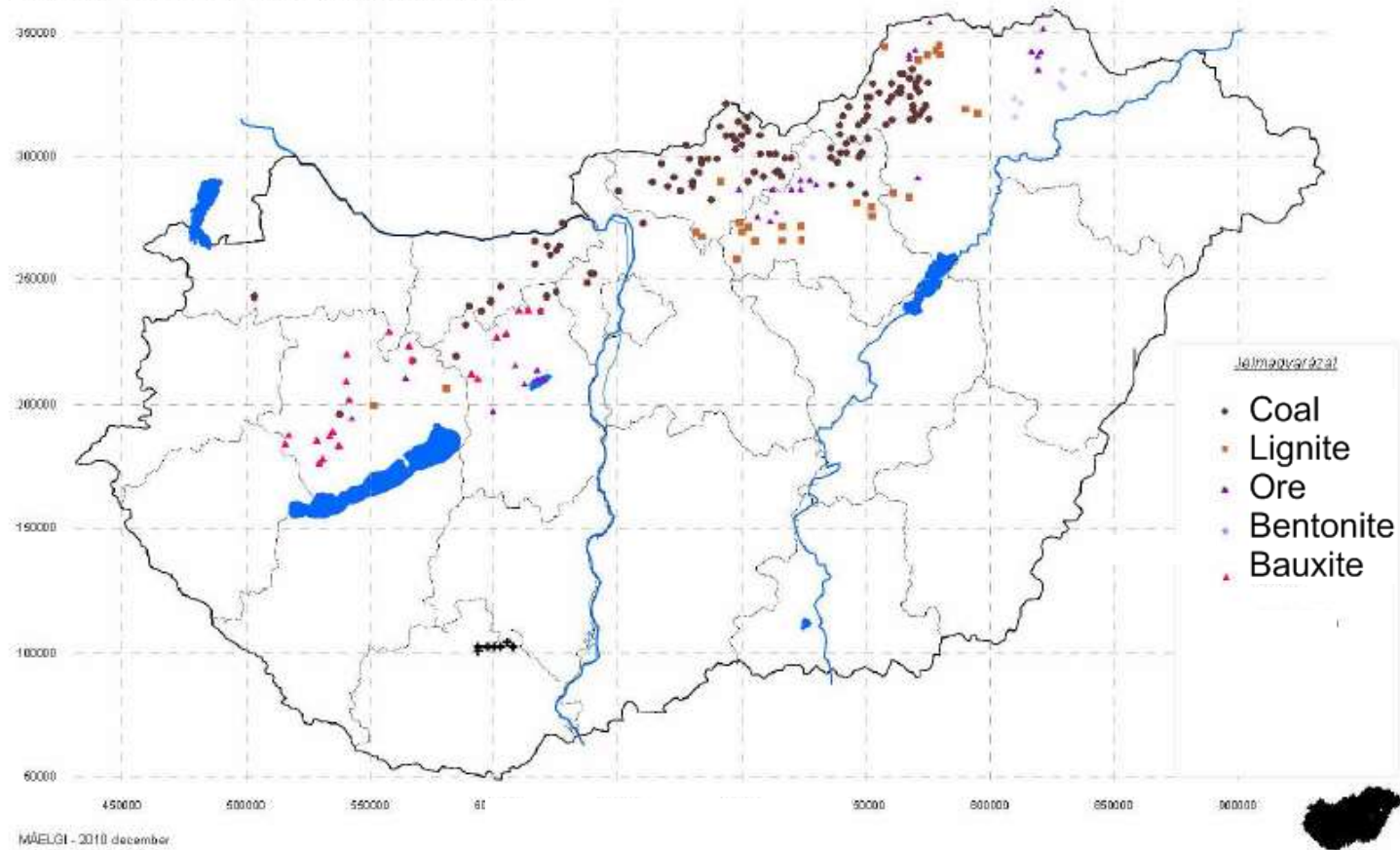
Geohazard

Geohazard: Geological or enviromental conditions on surface or subsurface which, make it dangerous the human life and enviroment.

Geohazard	
Natural	Artifical
Rock Fall	Underground Mining
Slide Slope	Open Mining
Earthquake	Cave



Underground mining in Hungary



Eötvös Loránd Geofizikai Intézet, 2010. december

Problems of database building

- Quality of maps
- Quality of documents
- Difference in mining progress

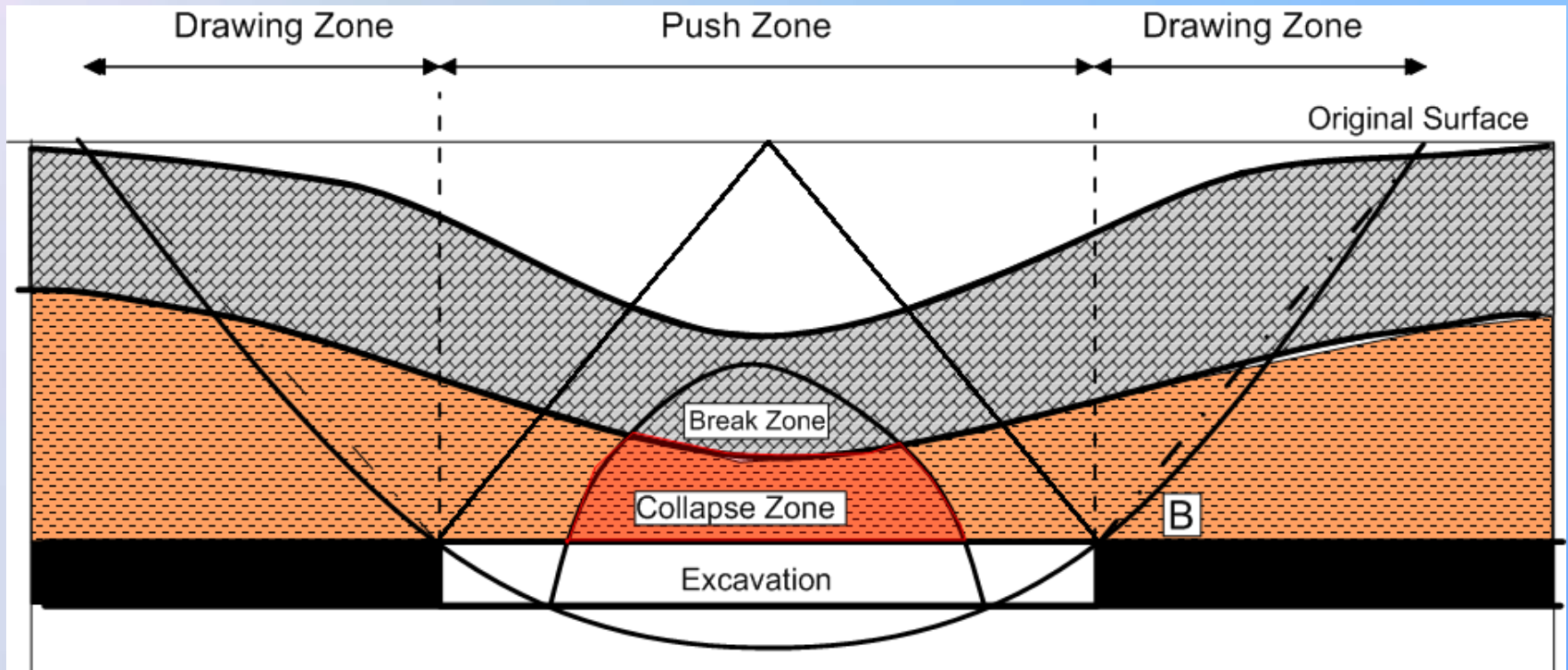


Mány I/A

Hidas mining area



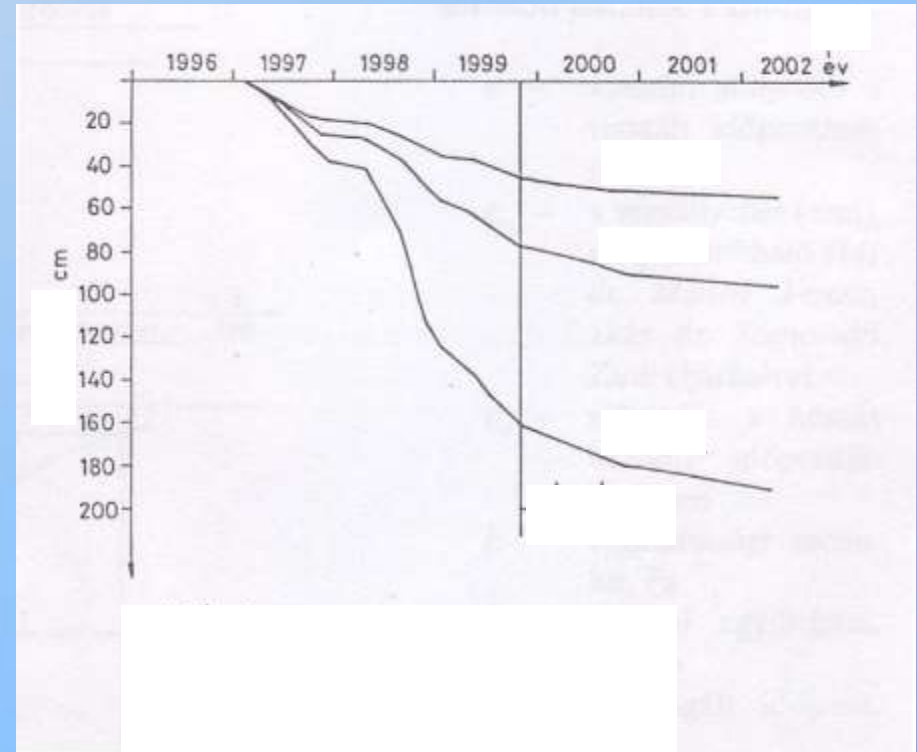
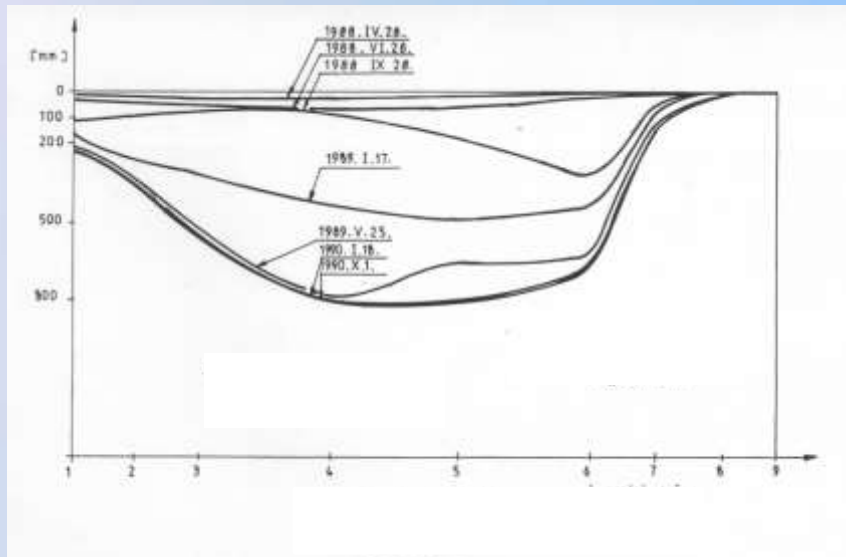
Surface movements



(Erdősi, 1987; Hoványi, Kolozsvári, 1989.



Surface movements



Subsidence dependency in time on longwall face mining



Risk Parameters

Geological properties: Type of roof rock, Stability of roof rock, Thick of roof rock, Hydrogeological conditions.

Mining properties: Types of excavation, Types of cribbing, Overburden Thickness, Mined Thickness, Ratio of minimum overburden thickness to mined thickness, Effectivity of backfill, Close Date, Other Risk

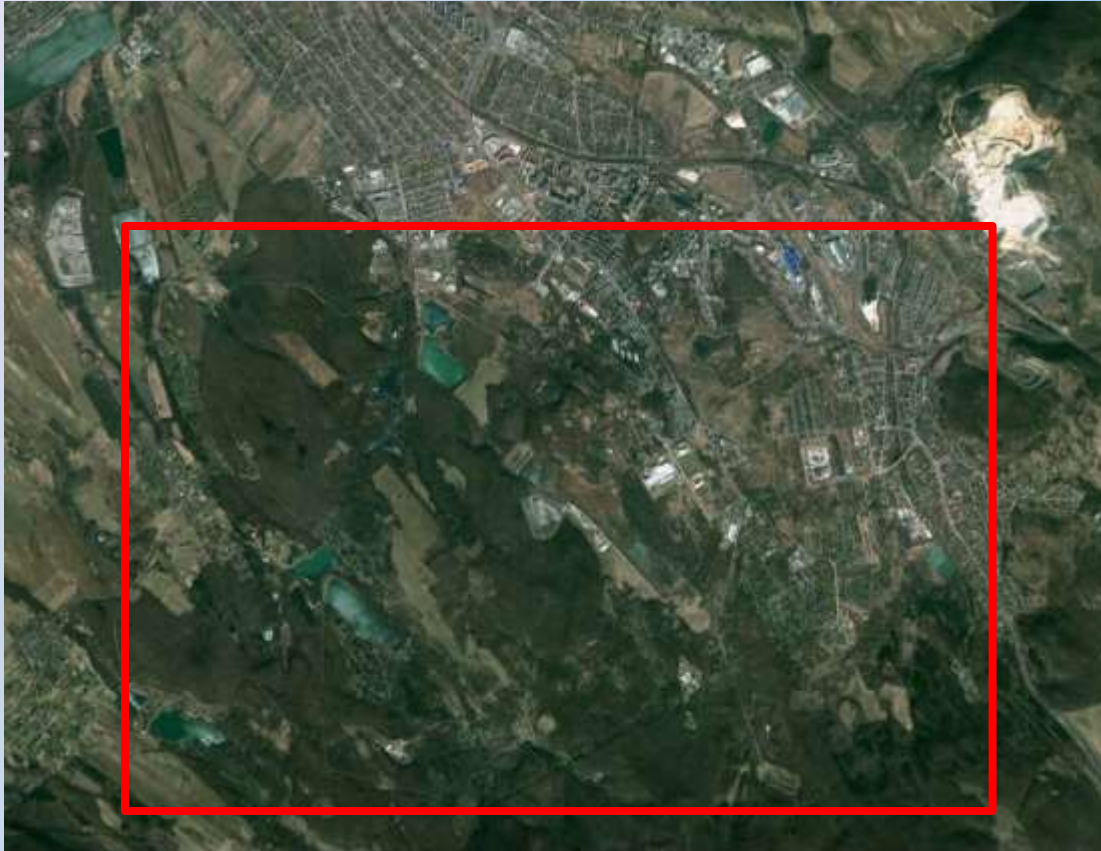
Surface conditions: Registred Surface moving, Infrastructure



City	Mining area	Category
Tatabánya	I. Akna	
Tatabánya	I/a. Akna	
Tatabánya	II. Akna	
Tatabánya	III. Akna	
Tatabánya	V. Akna	
Tatabánya	VI. Akna	
Tatabánya	VII. Akna	
Tatabánya	VIII. Akna	
Tatabánya	IX. Akna	
Tatabánya	X. Akna	
Tatabánya	XI. Akna	
Tatabánya	XII. Akna	
Tatabánya	Síkvölgyi Akna	
Tatabánya	XIV. Akna	
Tatabánya	XV. Akna	
Tatabánya	Keselő Akna	
Tatabánya	V/a. Akna	
Tatabánya	III/a. Akna	
Tatabánya	XV/a. Akna	
Tatabánya	XV/b Akna	
Tatabánya	XII/a. Akna	
Tatabánya	XV/c. Akna	
Tatabánya	Solymó Akna	
Oroszlány	Oroszlány I. II. III.	
Oroszlány	Bokod I. II. III. IV.	
Oroszlány	Oroszlány IV.	
Oroszlány	Oroszlány VI. (XXII. Akna)	
Bokod	Márkushegyi bányauzem	
Pusztavám	Pusztavám VI.	
Oroszlány	Oroszlány V. (XXIII. Akna)	



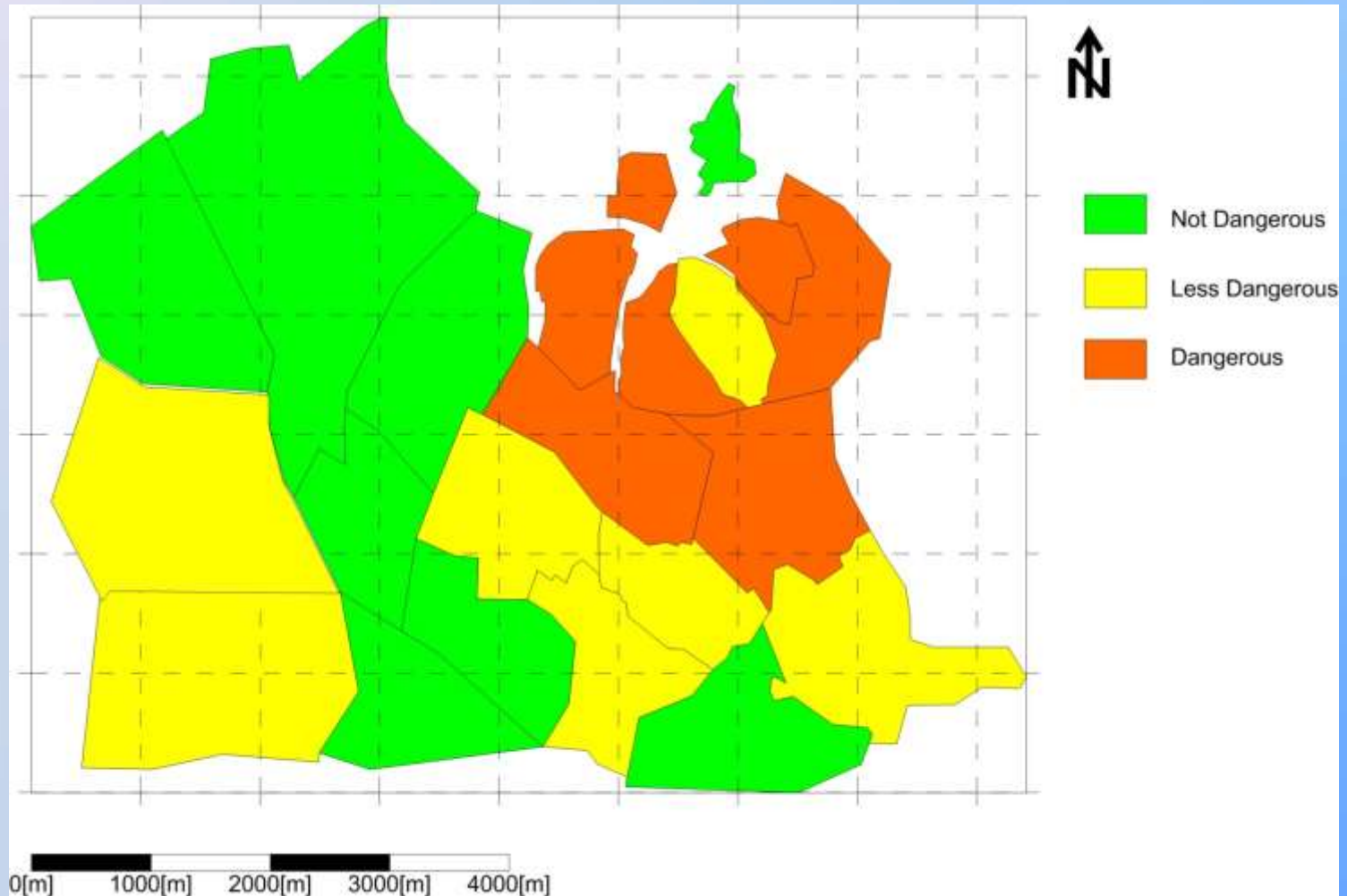
Mining of Tatabánya area



Google Earth (Tatabánya mining area)

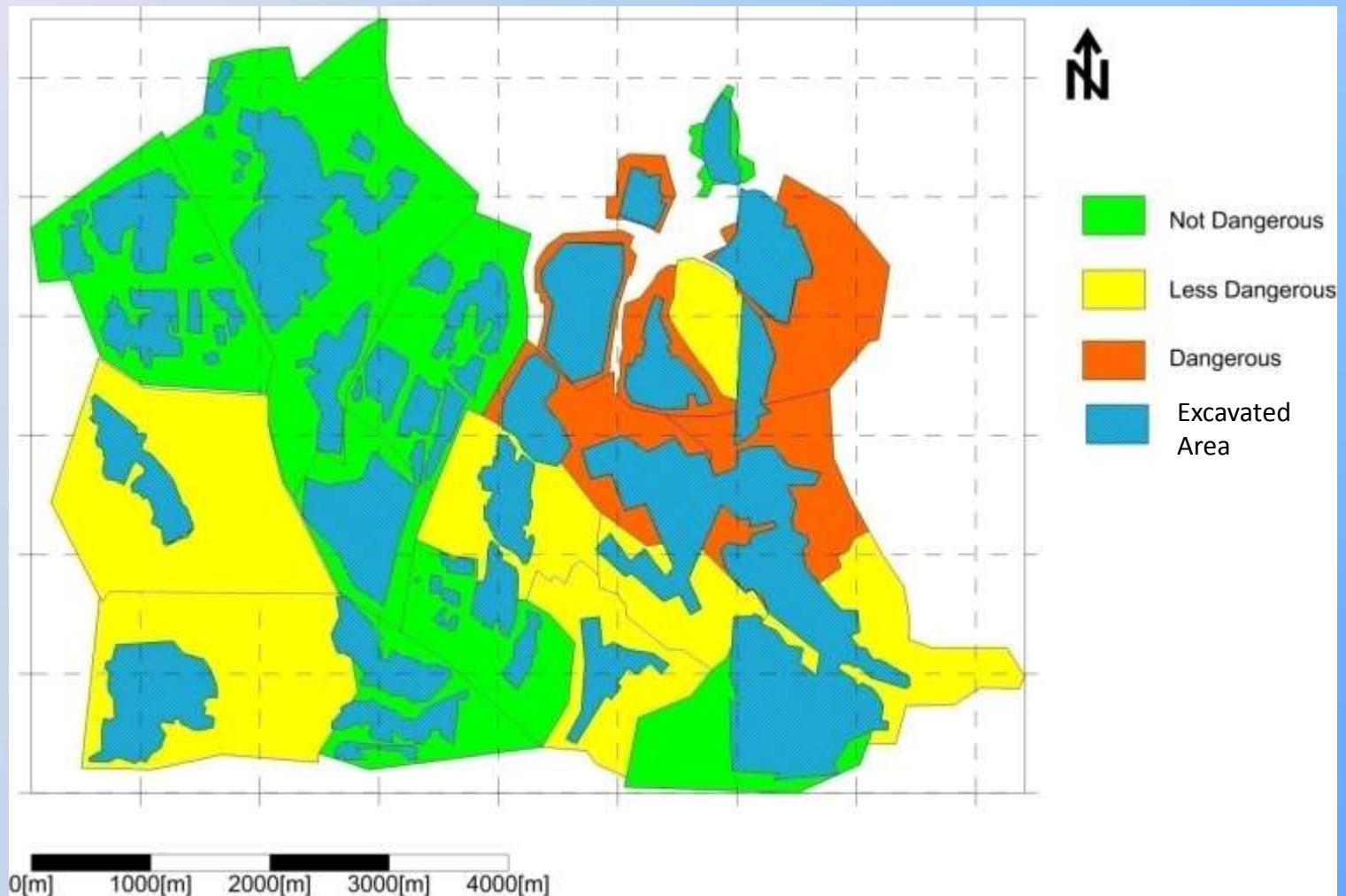


Site Assessment



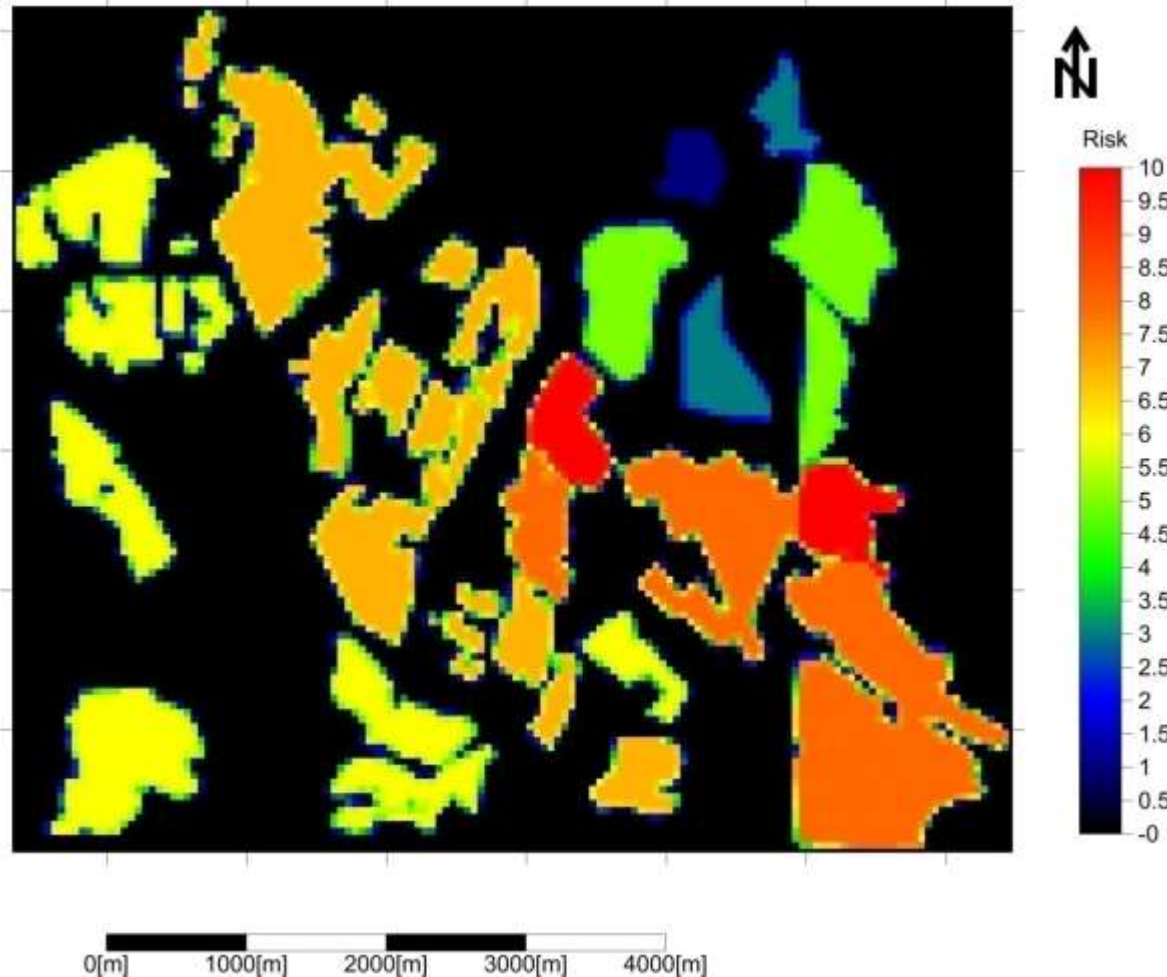


Site Assessment





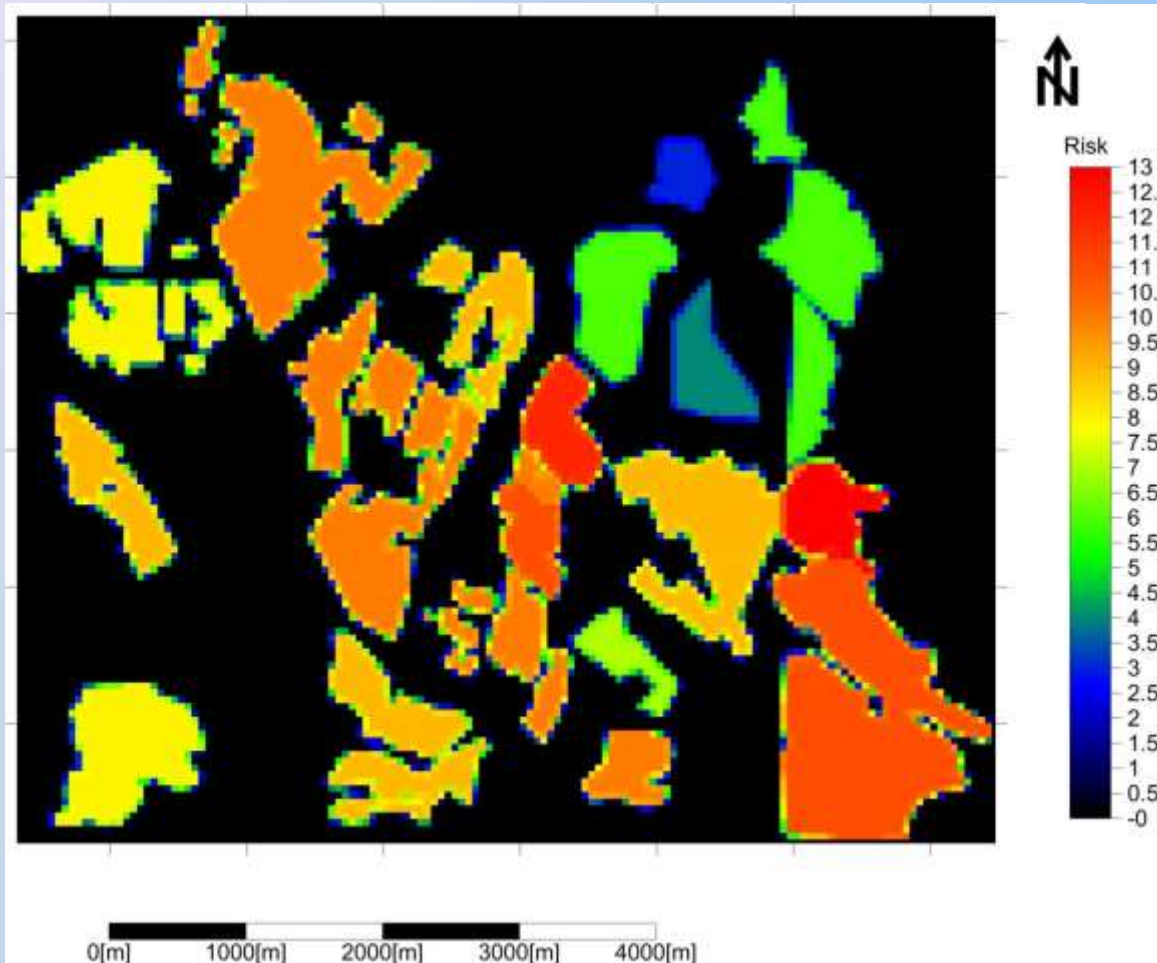
Site Assessment



Time Period



Site Assessment

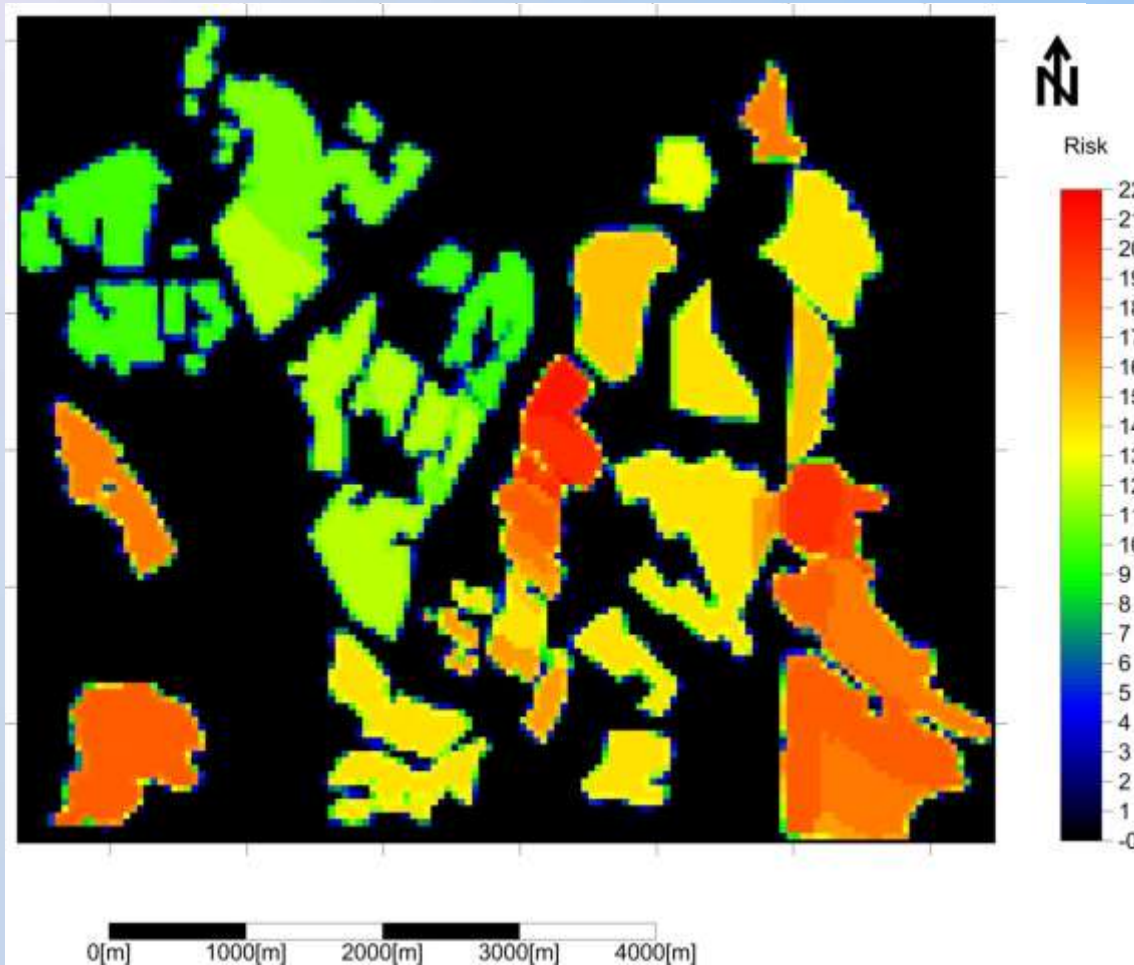


Mining type

Time Period



Site Assessment



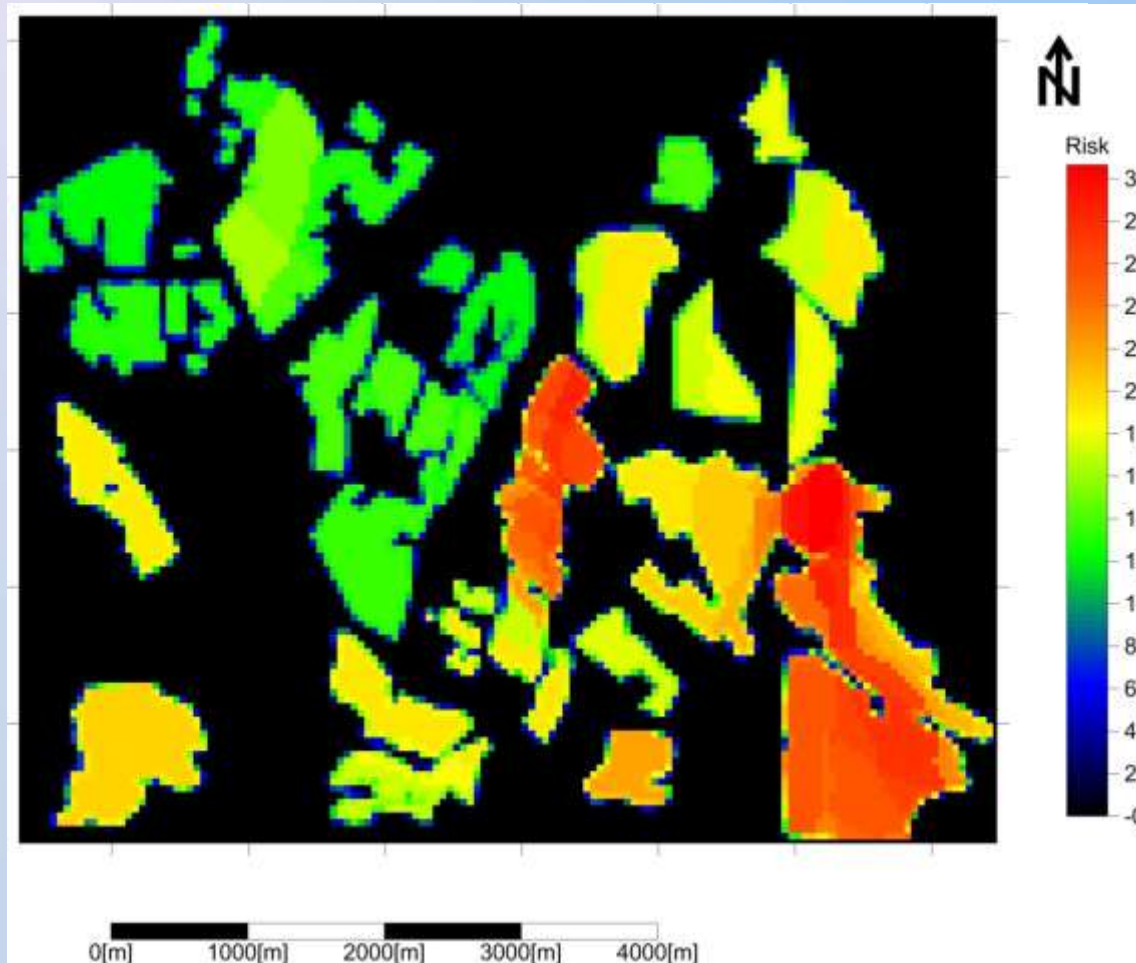
Deep

Mining type

Time Period



Site Assessment



Thickness

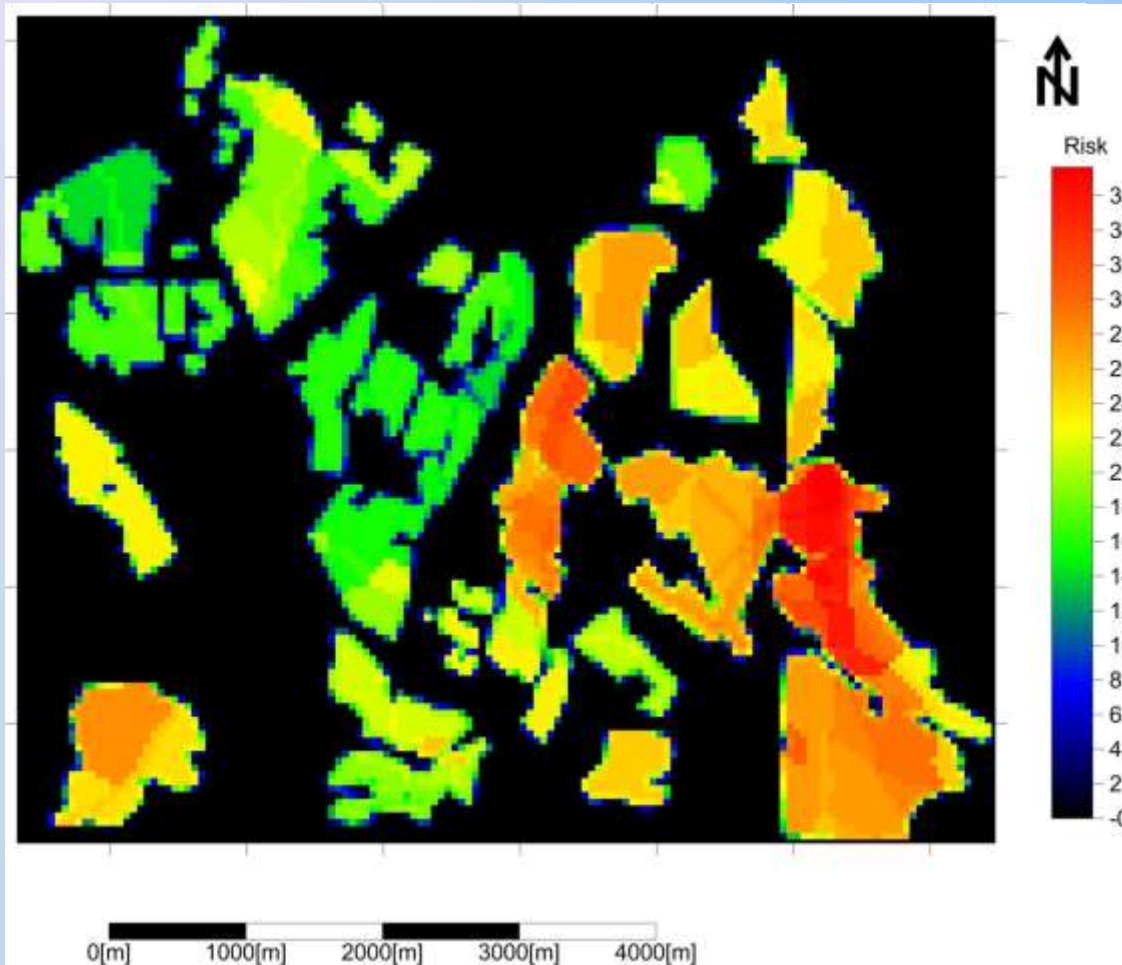
Deep

Mining type

Time Period



Site Assessment



Infrastrucuture

Thickness

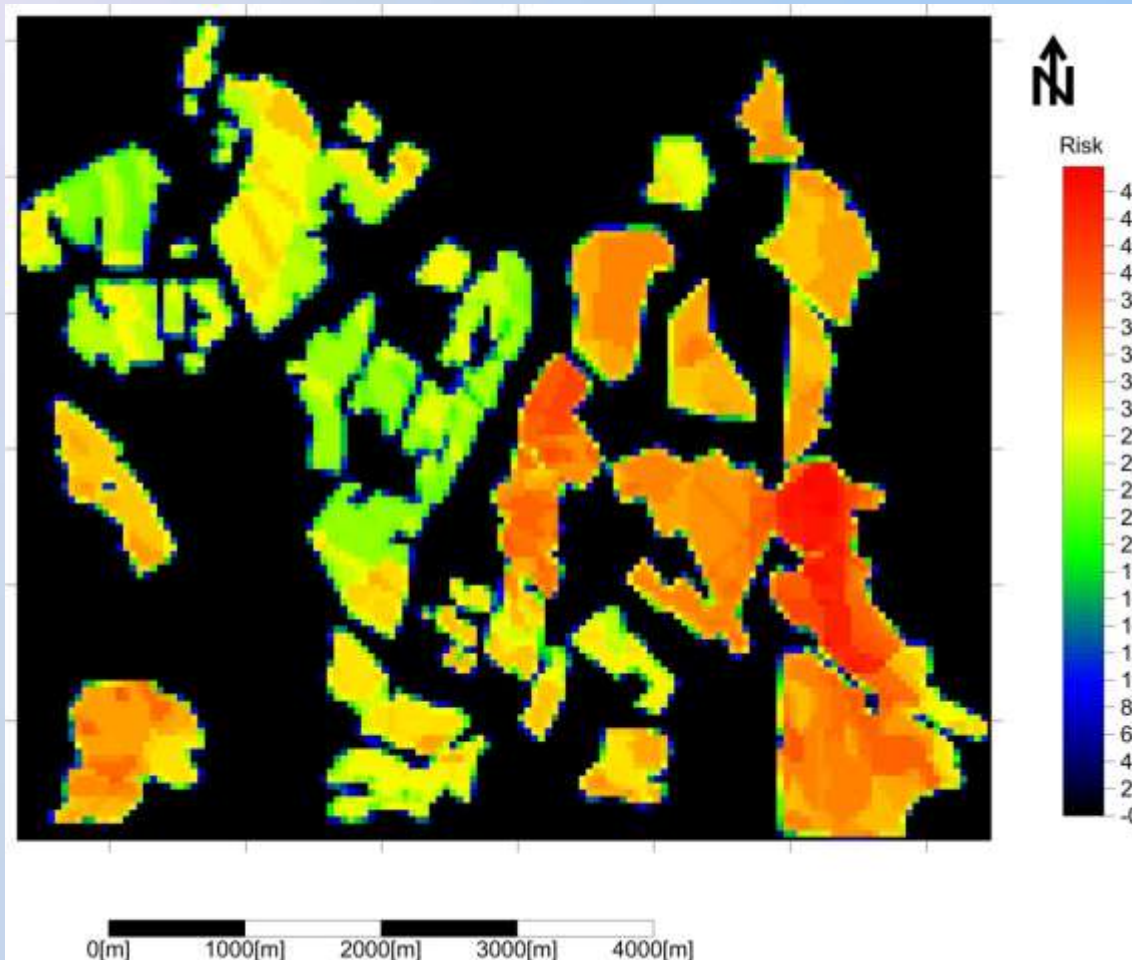
Deep

Mining type

Time Period



Site Assessment



Geology

Infrastrucuture

Thickness

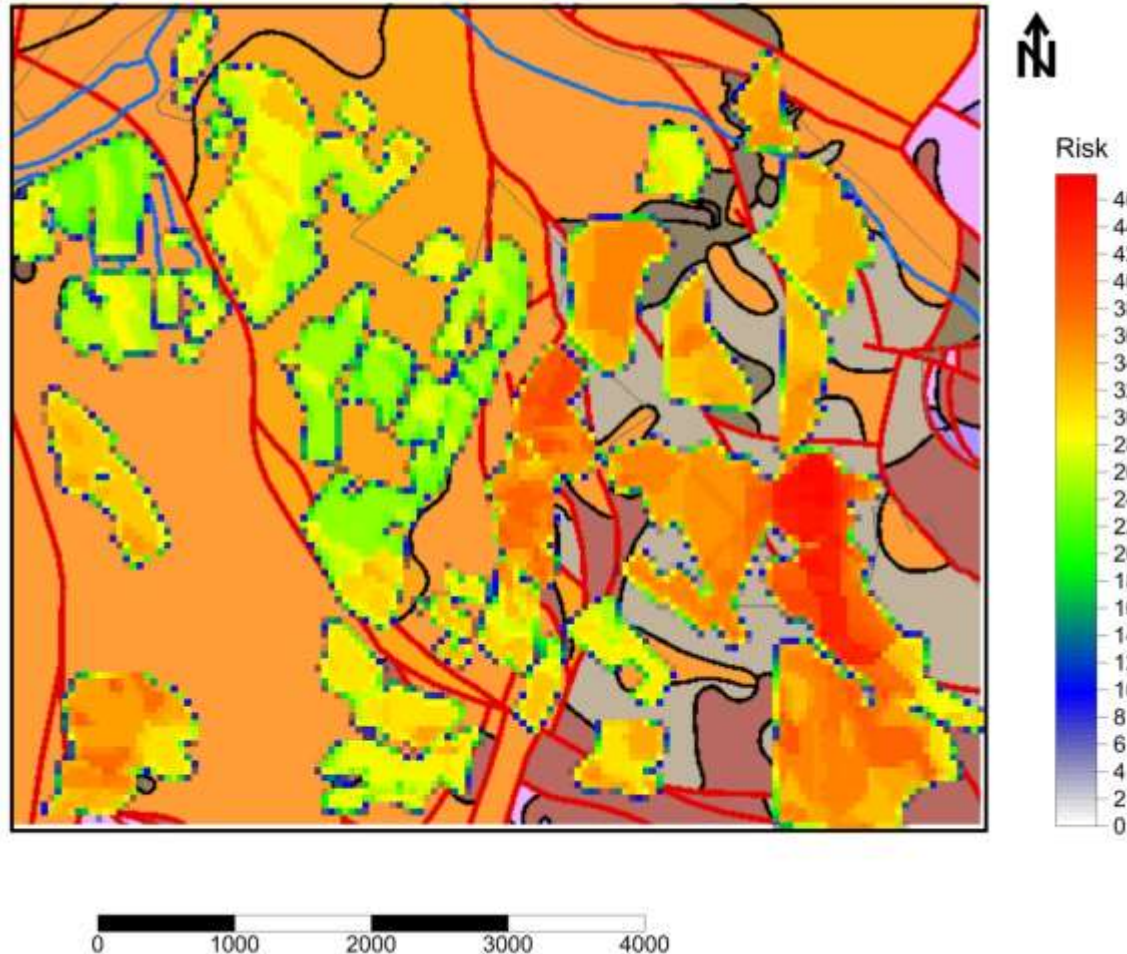
Deep

Mining type

Time Period



Site Assessment



Geology

Infrastrucuture

Thickness

Deep

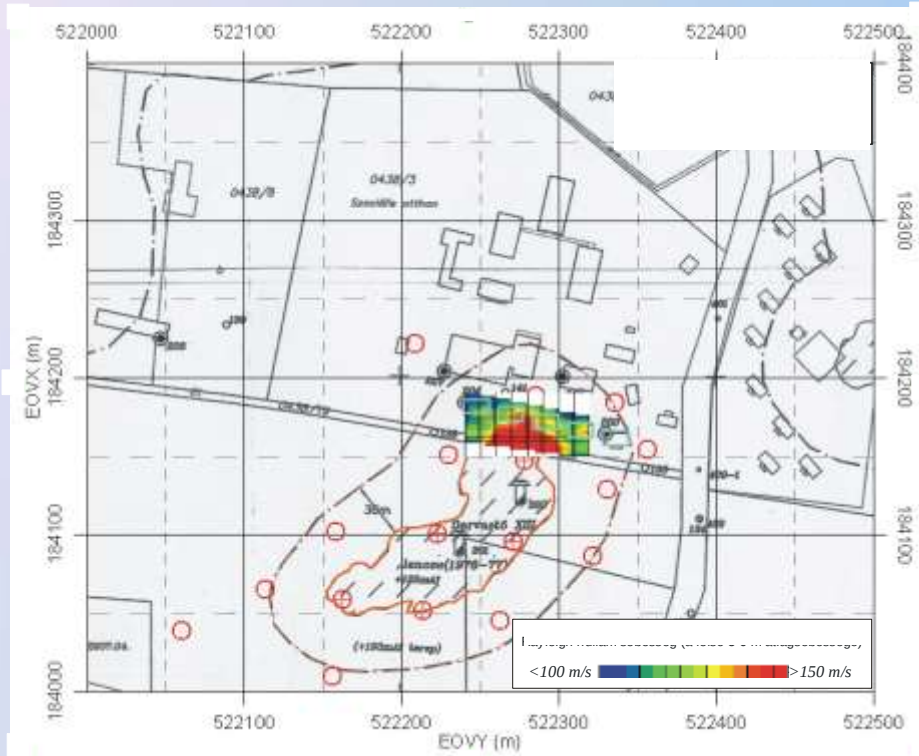
Mining type

Time Period



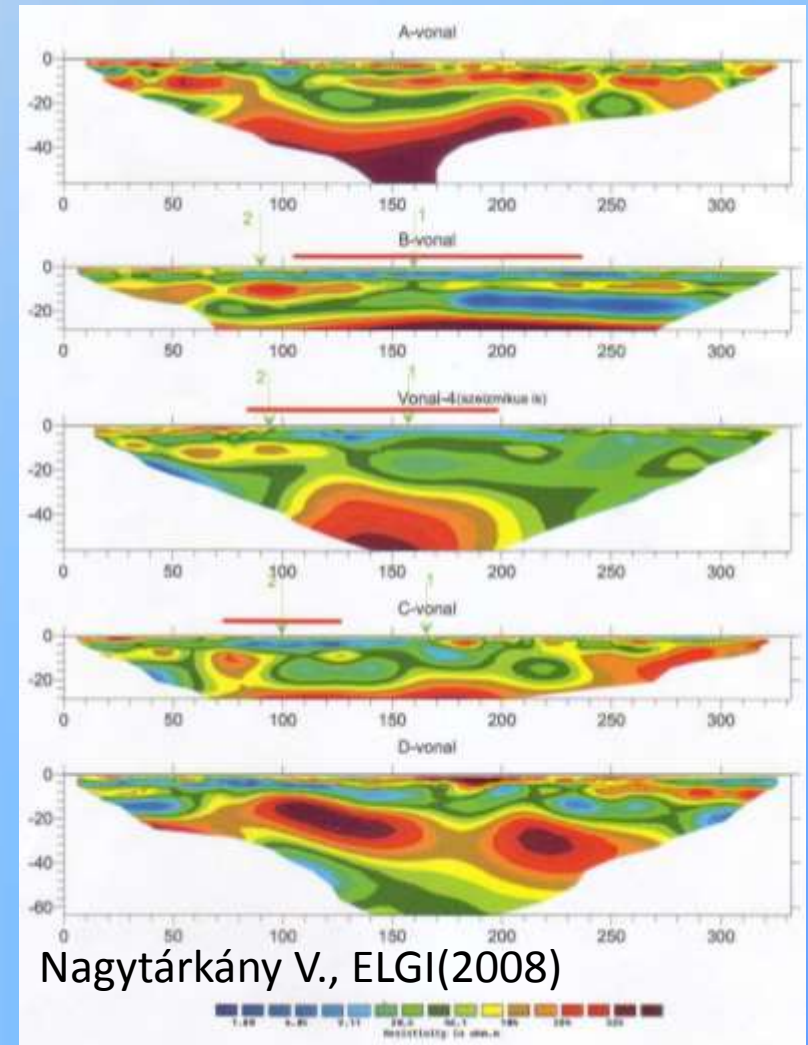
Geophysics

Seismic tomography using Surface Waves



Darvastó XIII, ELGI(2008)

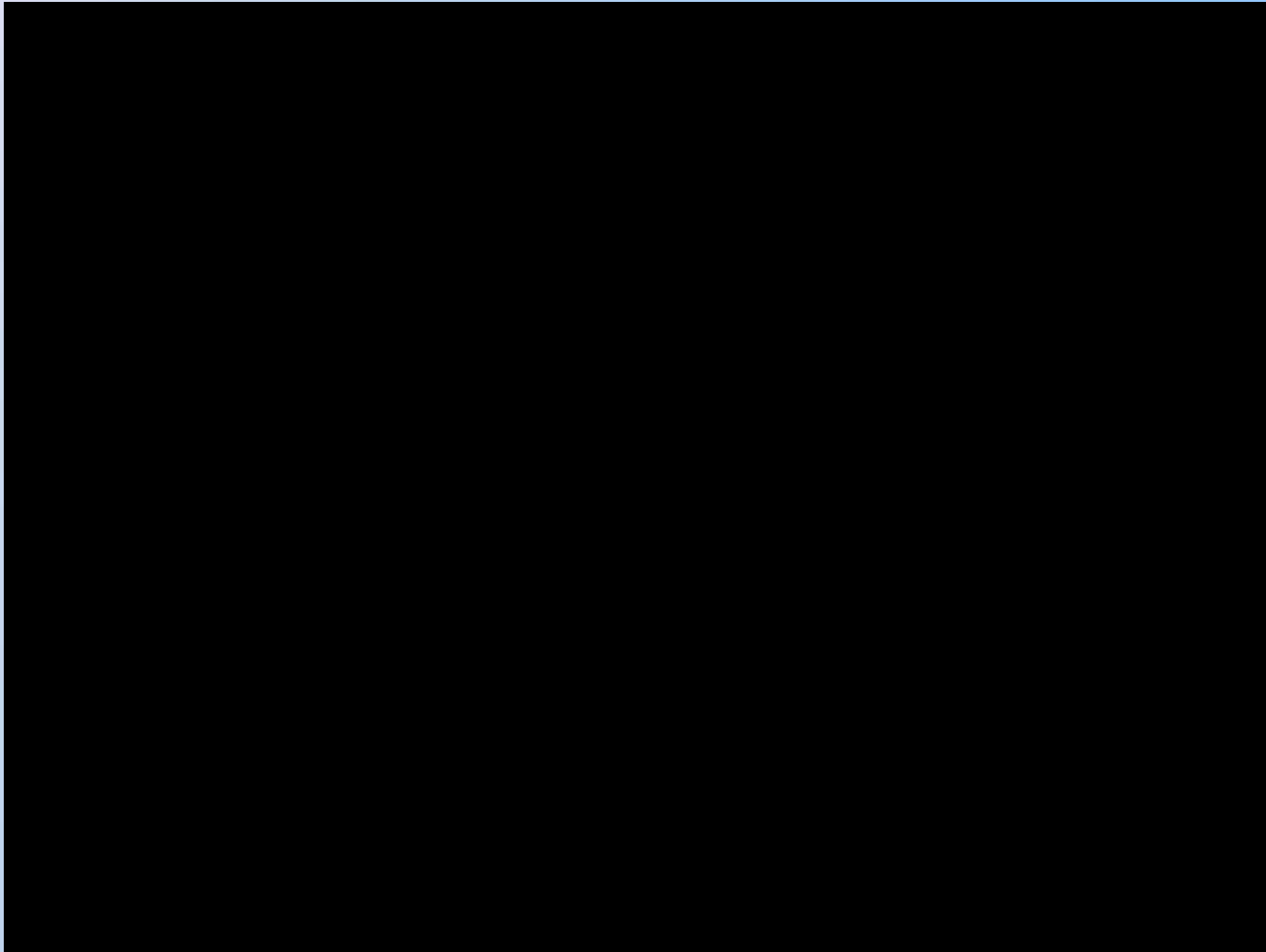
Goelectric measurements



Nagytárkány V., ELGI(2008)



Lousiana, Sinkhole





Thank you for attention!