



# INDOOR RADON LEVELS IN AREAS AFFECTED BY GEOGAS SEEPAGES

István Csige, Sándor Csegzi, Sándor Gyila, Erzsébet Sóki

**SZÉCHENYI** 2020



MAGYARORSZÁG  
KORMÁNYA

Európai Unió  
Európai Regionális  
Fejlesztési Alap



**BEFEKTETÉS A JÖVŐBE**

# GEOGAS SEEPAGE





# MOFETTE

depending on local geological and hydrogeological conditions:

dry

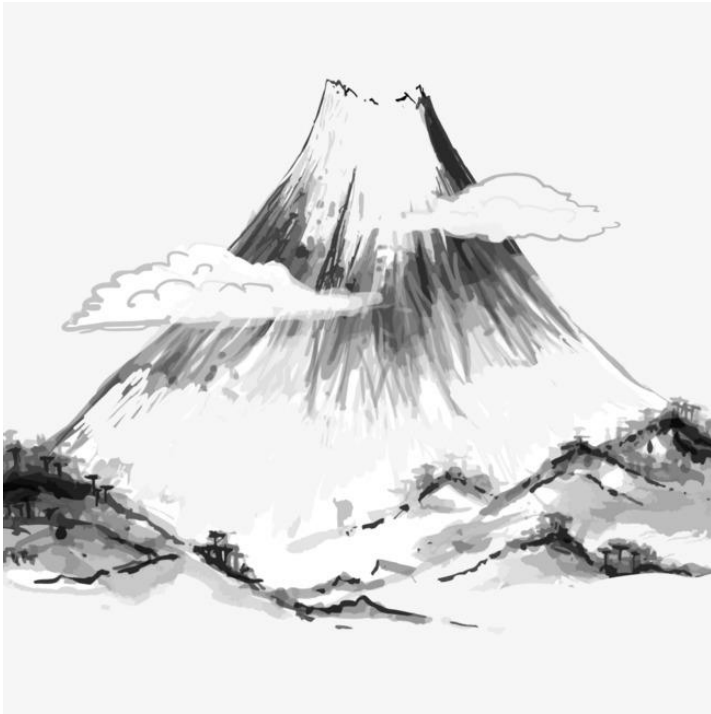
wet



# GEOGEN CO<sub>2</sub>

can be originated from:

post volcanic

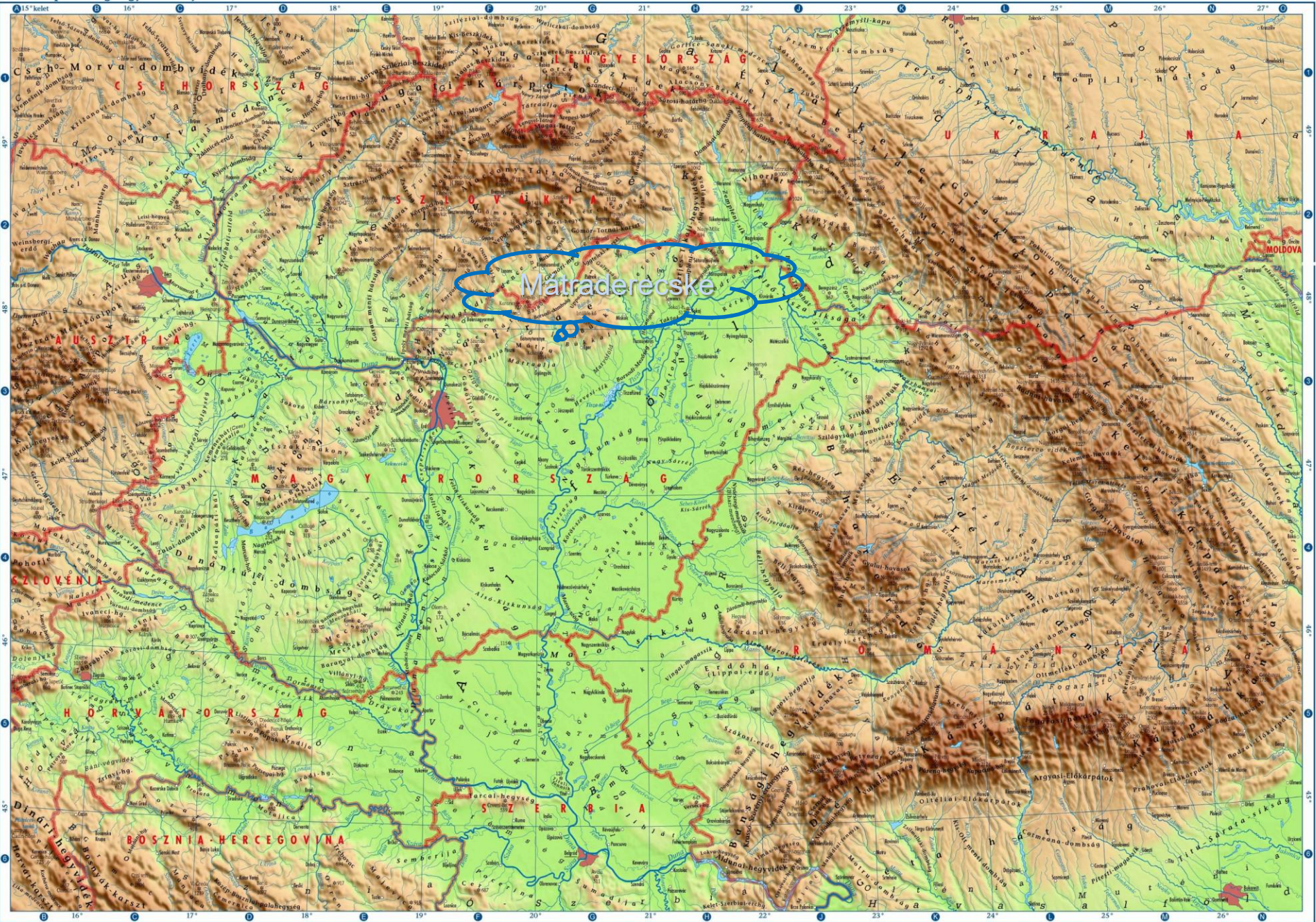


non volcanic

escaping of CO<sub>2</sub> from:

- upper mantle,
- intrusive magma chambers,
- carbonate-bearing rocks in the crust (thermometamorphism),
- hydrocarbon accumulations,
- surface deposits & processes



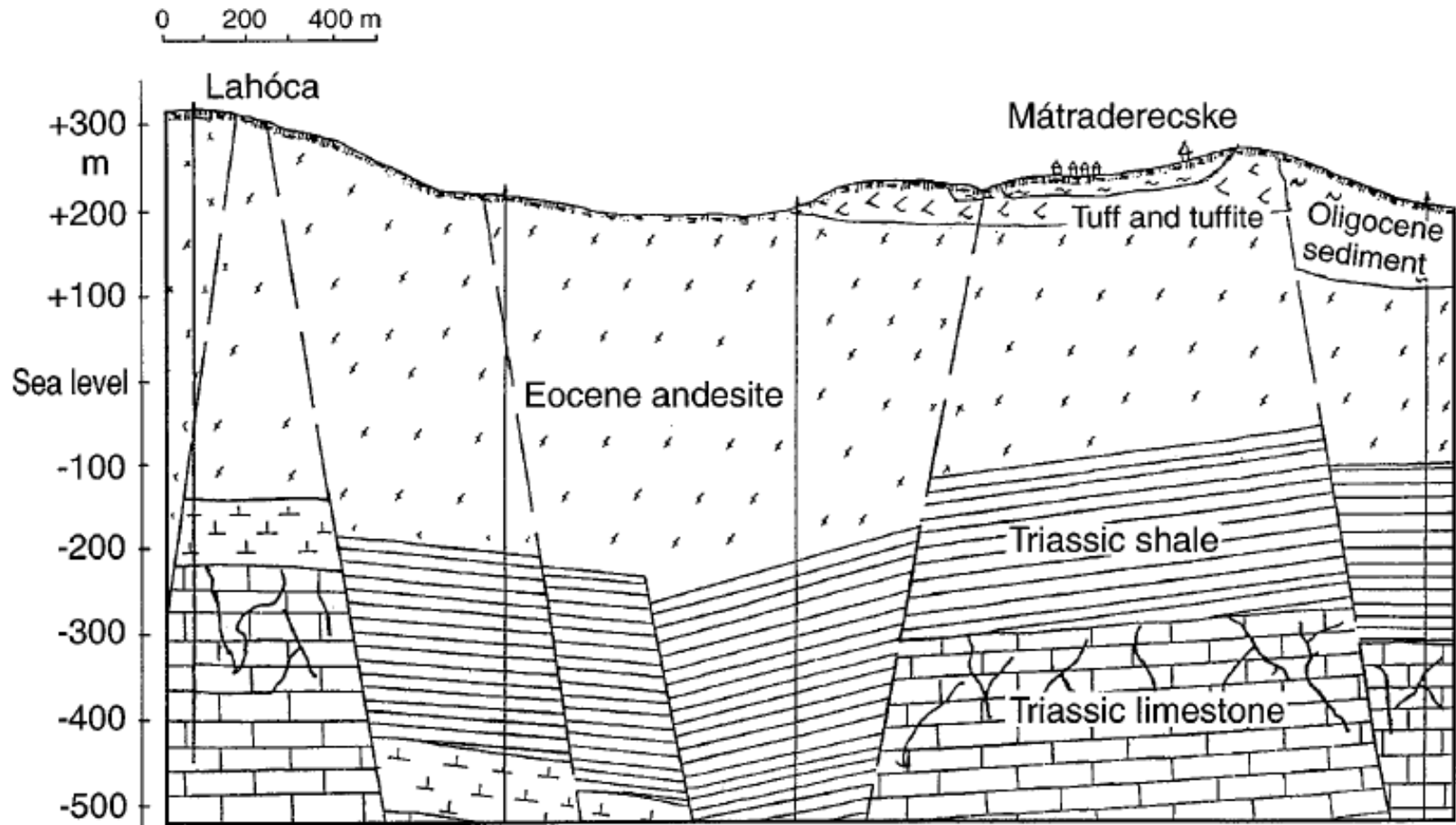




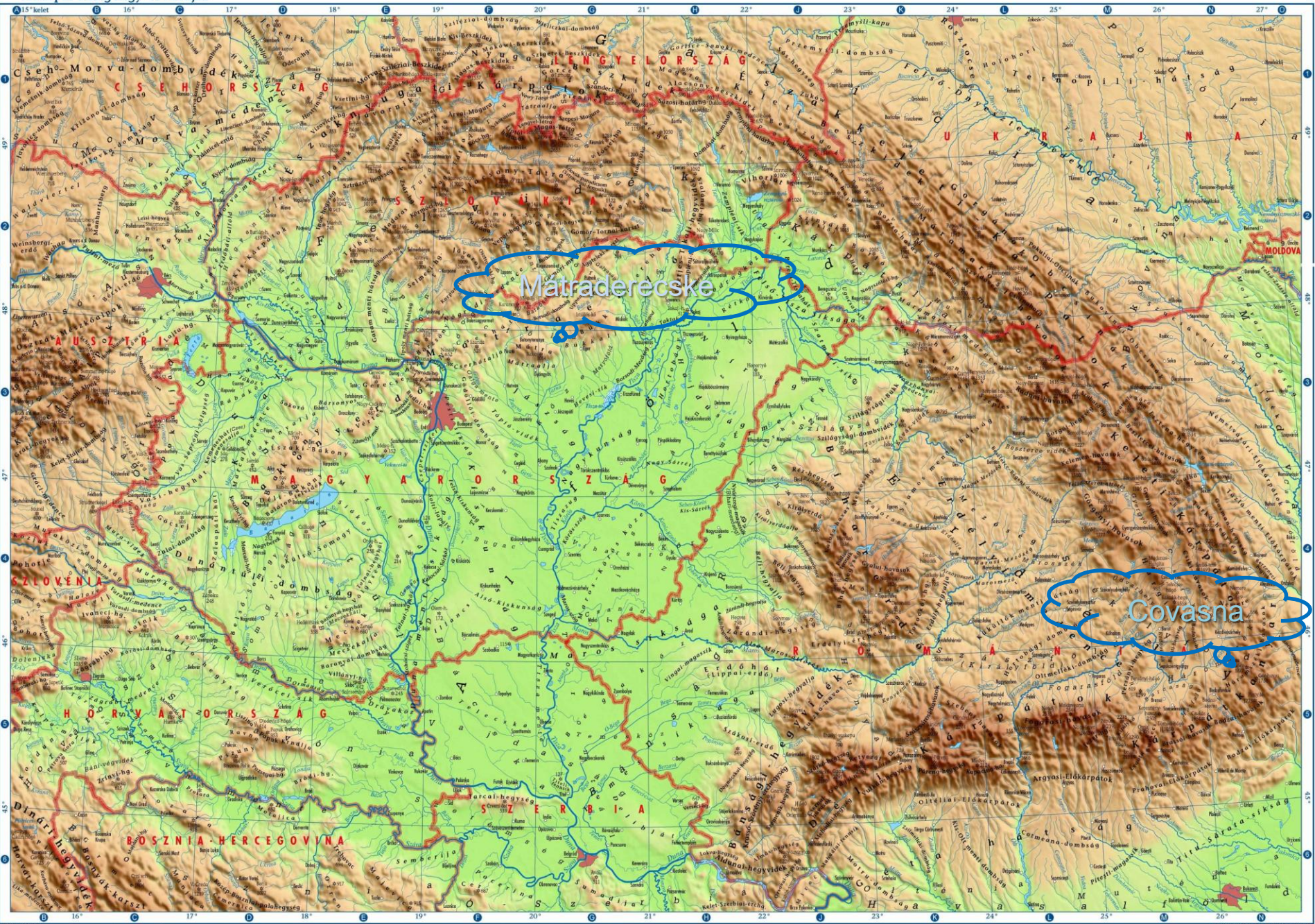
# DARNO-LINE



# GEOLOGY OF THE VILLAGE MÁTRADERECSKE









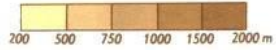




# EASTERN EDGE OF THE „MOFETTIC AUREOLE”

Județul Covasna

SCARA ÎNĂLȚIMILOR



Covasna - Kovászna





# GEOLOGICAL MAP OF ROMANIA

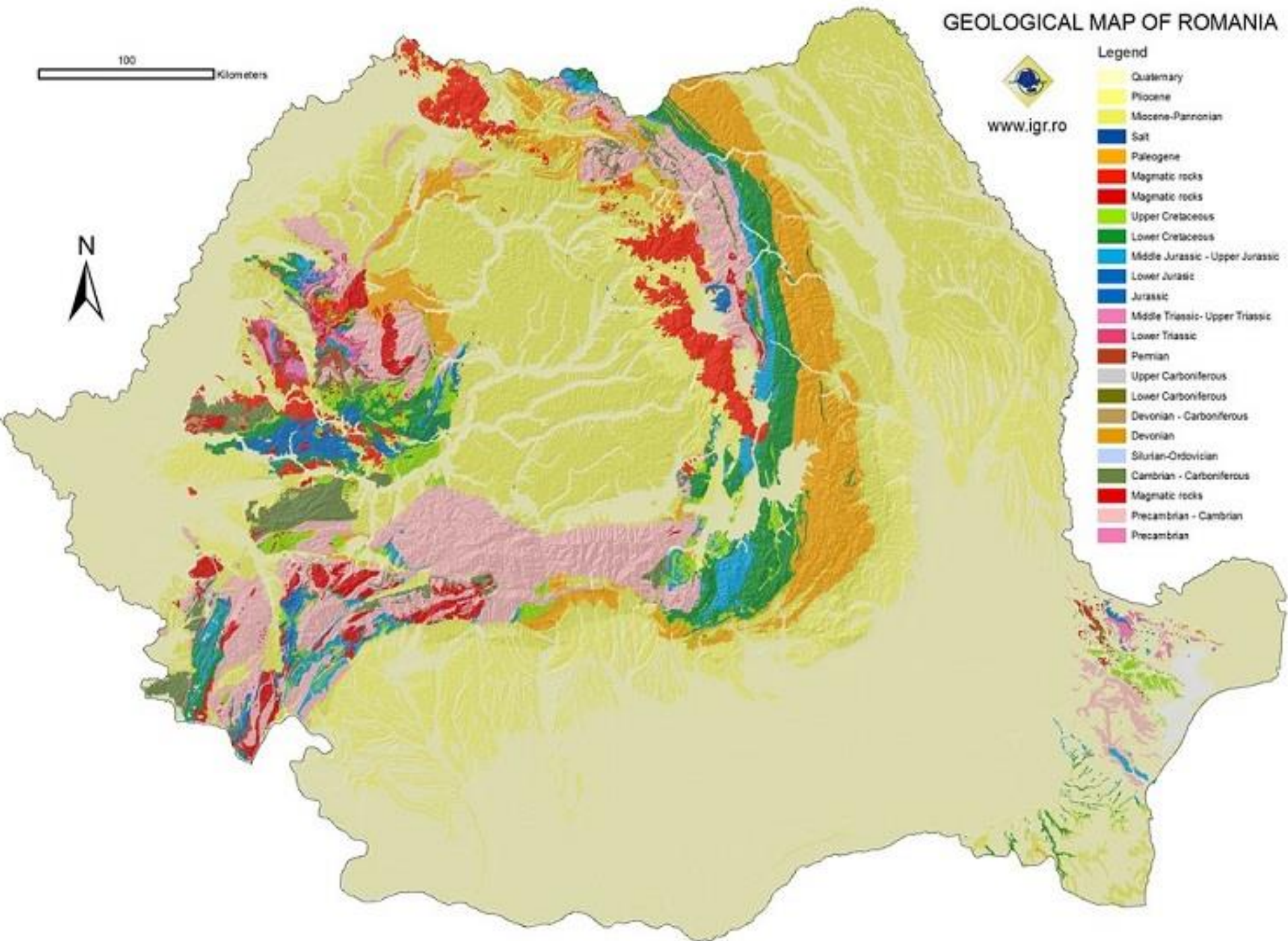
100  
Kilometers



[www.igr.ro](http://www.igr.ro)

## Legend

- Quaternary
- Pliocene
- Miocene-Pannonian
- Salt
- Paleogene
- Magmatic rocks
- Magmatic rocks
- Upper Cretaceous
- Lower Cretaceous
- Middle Jurassic - Upper Jurassic
- Lower Jurassic
- Jurassic
- Middle Triassic - Upper Triassic
- Lower Triassic
- Permian
- Upper Carboniferous
- Lower Carboniferous
- Devonian - Carboniferous
- Devonian
- Silurian-Ordovician
- Cambrian - Carboniferous
- Magmatic rocks
- Precambrian - Cambrian
- Precambrian





# STUDY AREAS

Mátraderecske (HU) 

Covasna (RO) 

origin of CO<sub>2</sub>:

thermal dissociation of limestone

thermometamorphism of  
limestone

origin of radon:

accumulated uranium content of  
tuffite layer

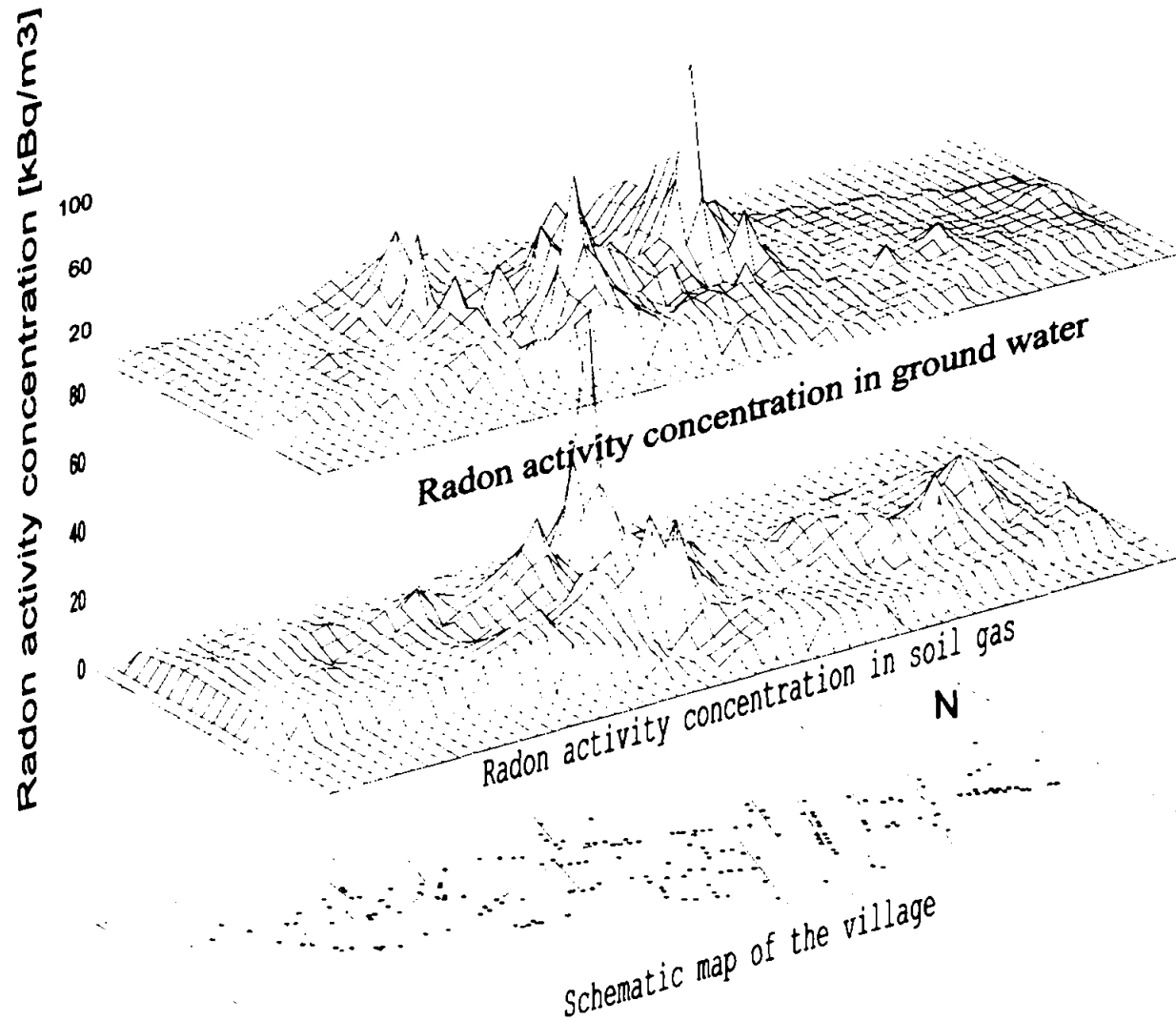
fragmented uranium-rich granite  
occurring close  
to the surface







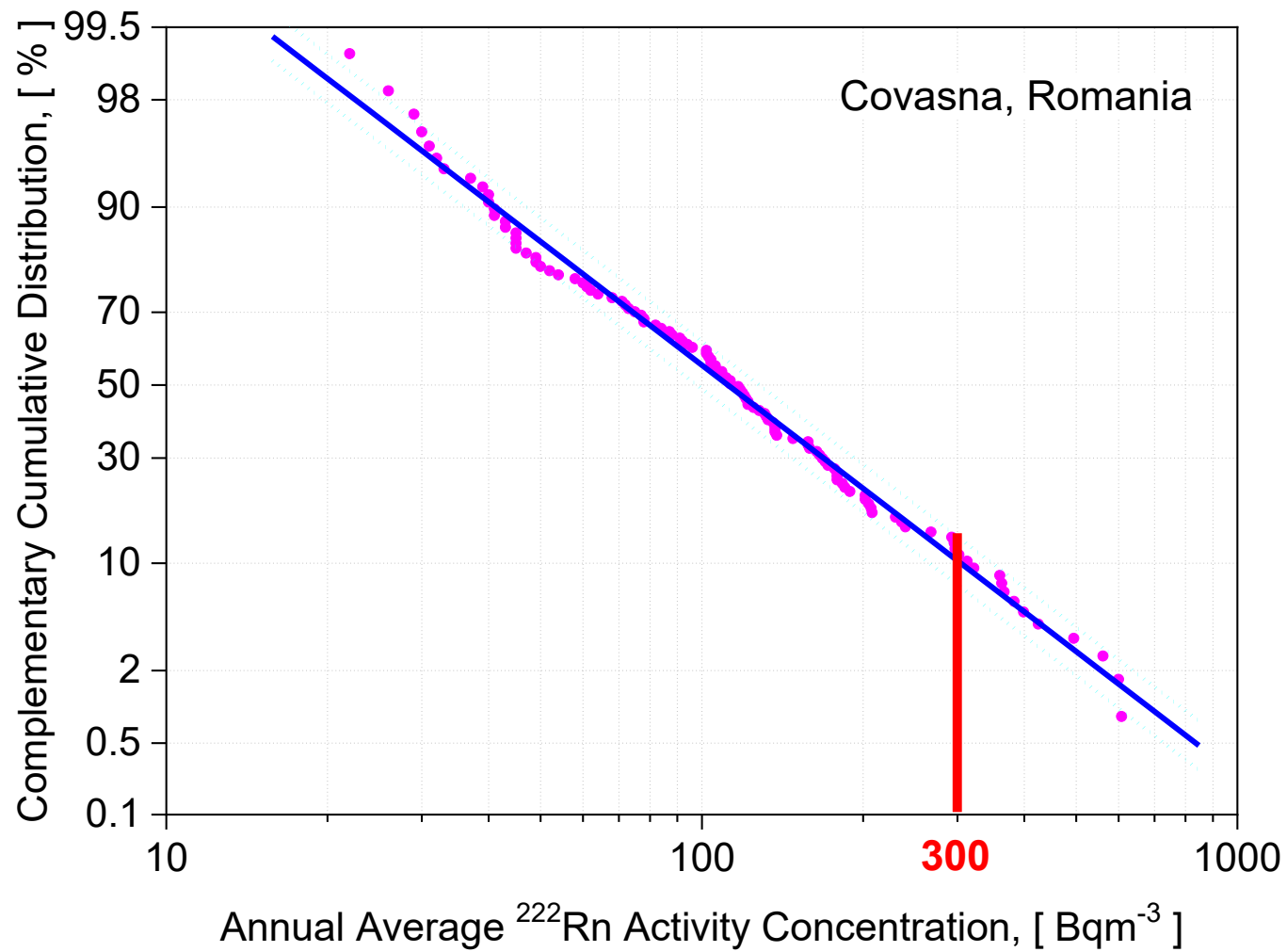
# SURFACE MAPS OF GROUND-WATER AND SOIL-GAS RADON LEVELS





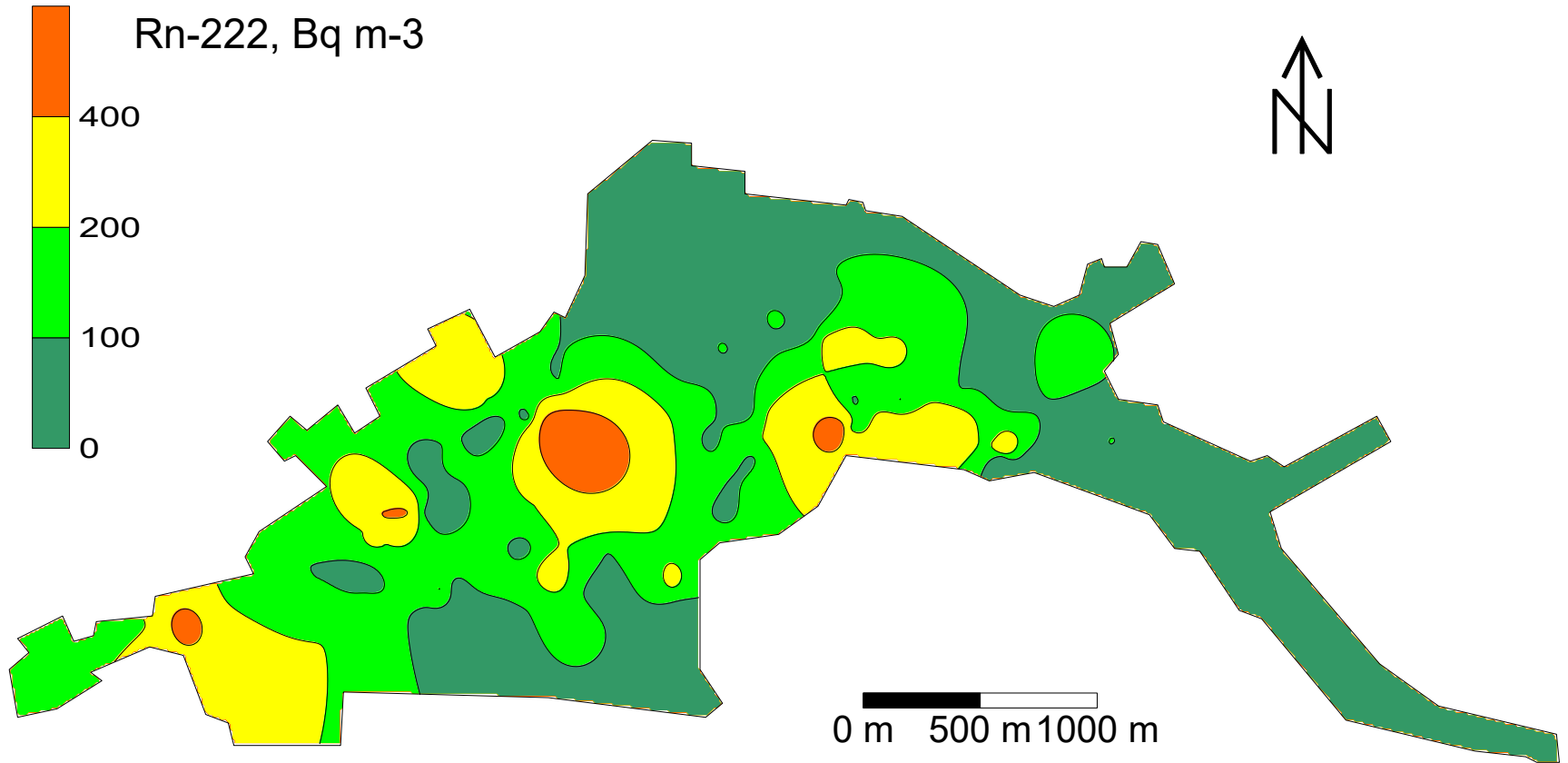
Covasna  
Kovácszna



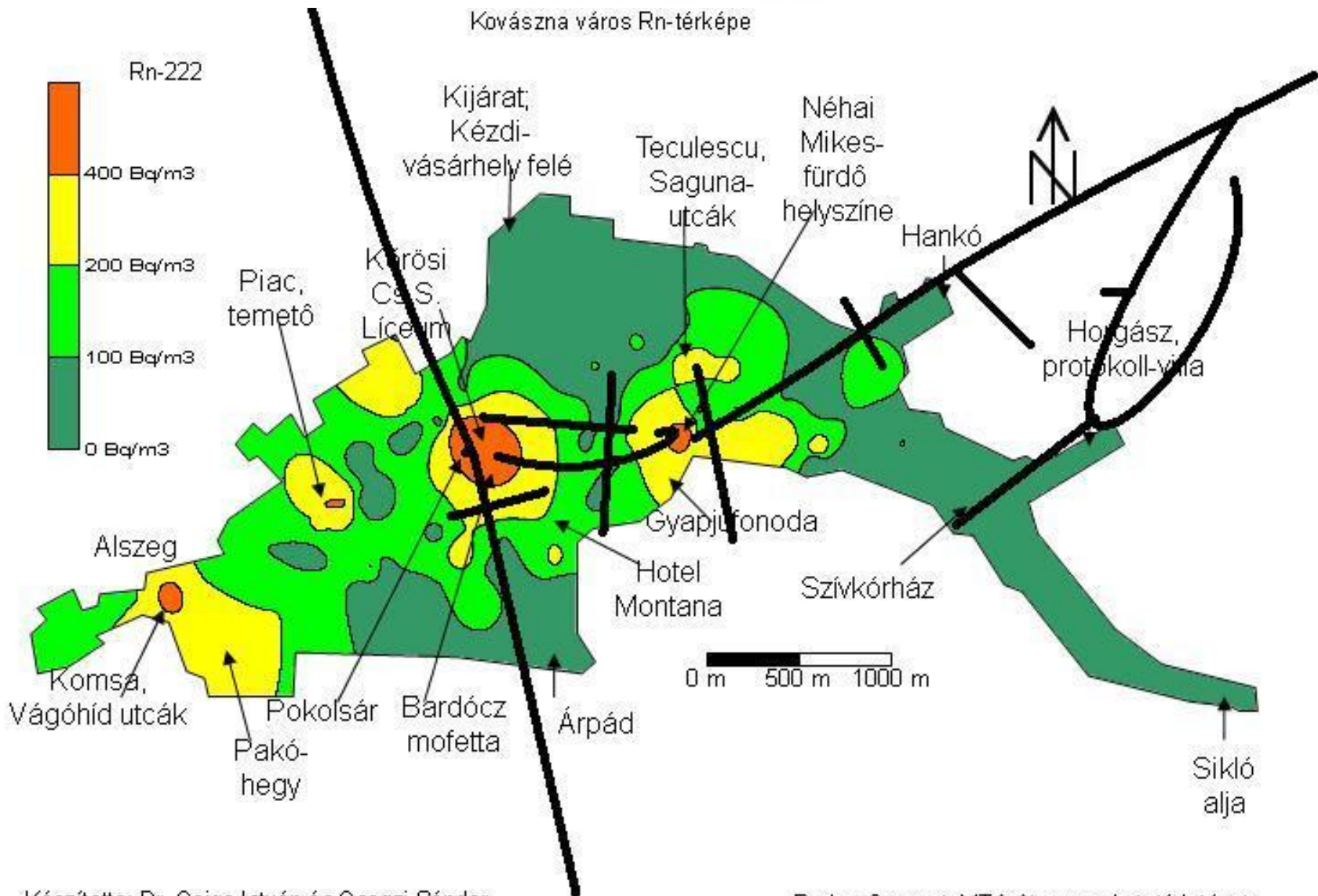




# RADON MAP OF COVASNA



# MAIN FAULT STRUCTURE





# THANK YOU FOR YOUR ATTENTION!

**SZÉCHENYI** 



HUNGARIAN  
GOVERNMENT

European Union  
European Regional  
Development Fund



**INVESTING IN YOUR FUTURE**