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## 5th European Railway Corridor Crosses Classical Karst, Slovenia

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The proposed railway between the Northern Adriatic ports of Koper (Slovenia) and Trieste (Italy) and the interior of Slovenia on the 5th European Railway Corridor (Barcelona–Kiev) required extensive karstological planning of the route.

A good knowledge of the natural and cultural heritage of karst is a precondition for the rational planning of development on it. The karst can be known and understood primarily through the comprehensive study of its surface, caves, waters, and ecological characteristics.

Karst is a result of the long-lasting evolution of the entire area, during which the surface and the underground drainage paths changed, but relict caves were preserved in the karst. We focused our attention primarily on the location of larger segments of the surface, on the size and distribution of collapse dolines and unroofed caves which karst denudation had opened up in the surface.

Karstologists tightly co-operated with route planning engineers and with different analyses of the karst determined the zones and depths at which constructors can expect greater porosity, that is, the location of important cavities.

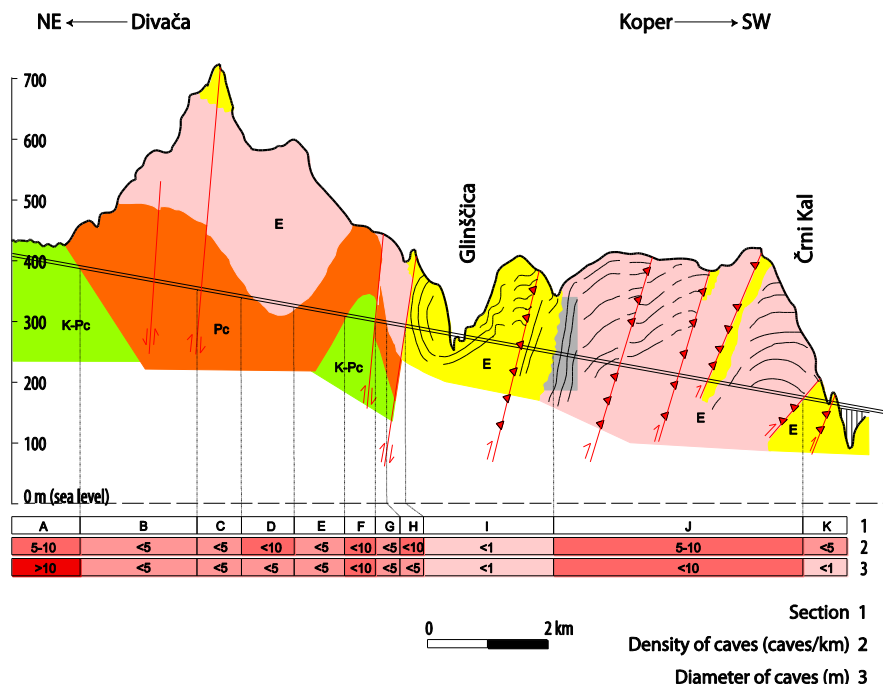


Figure 1: Estimated density of caves and their average expected diameter in planned tunnels

Combining the results of various research studies leads to the conclusion that the entire area is highly hollowed. It is believed that from 5 to 10 caves are likely to open up across one kilometre of the route, and 15 caves in the separately described areas.

Therefore, the probability of the tunnels intersecting karst cavities in the areas shown is high. Cave passages, segments of relict cave networks, can be expected along the entire route at various levels. These passages can measure over 10 m in diameter where cave passages and networks, products of older speleogenetic stages, can be expected between the surface and phreatic zone. There is also a high probability of encountering shafts along the entire route which drain water to the level of the karst groundwater.

