



## Geology Sheet 11

### Limestone pavement; a priority habitat.



Although limestone rocks occur all over the world, limestone pavement is only found in places that were covered by ice during the last ice age. Scientists think that pavements owe much of their existence to the weathering and removal of overlying rock and soil by ice sheets. The role that humans played in the formation of limestone pavements is still being debated.

Some beds of limestone are more likely to form pavements than others: (1) beds that

do not contain many joints (fractures), (2) beds that are more resistant to dissolution by rainwater (because they are made of purer limestone), and (3) beds that are mechanically stronger (because they were hardened by geological processes). Approximately 20% of the Burren is limestone pavement, with an additional 30% of the Burren being of a combination of pavement and rendzina (an organic-rich, calcareous soil). In the Burren, the most pristine pavements occur near the boundary between the limestone's and overlying shales. Limestone dissolves in rainwater and all the limestone pavements in the Burren show signs of dissolution. The most common dissolution features are *grikes*.



Grikes are vertical or near-vertical fissures in limestone pavement. Initially, the limestone contains only microscopic fractures or cracks. Rainwater seeps into the cracks and dissolves the limestone along the crack, making it wider. By the time you can see it with the naked eye, it is called a grike (or *scaillp*). Grikes can be up to 80 cm wide and 2 metres deep. The grikes divide up the limestone pavement into blocks called clints.

Most clints are 1- 5 m<sup>2</sup> in area.

Other common dissolution features in limestone pavement are kamenitzas (bolláns) and runnels.

Kamenitzas are small, shallow, round, flat-bottomed depressions or pools on the surface of limestone pavement. They are usually a 5 - 30 centimetres wide. They form as the limestone is dissolved by standing water. The limestone does not contain any microscopic holes that let water drain through, and so any water (from rainfall) will sit in hollows on the limestone surface. This water dissolves the limestone underneath, enlarging the hollow.



