

## Geology Sheet 7

### Dolines; large circular depressions in limestone.



Dolines are bowl-shaped, enclosed depressions in the land surface that can be several metres to several hundreds of metres wide. They can form by the dissolution of limestone from the surface downwards, or by the collapse of overlying rock into a cave, or by a combination of these processes. There are at least 1,500 dolines in the Burren that have an area greater than 100 m<sup>2</sup>. Most of these larger dolines occur in the east of the Burren. This is because large dolines take tens of thousands of years to form; the eastern parts of the Burren have been affected by dissolution longer than the west.



Fig. 1 Doline

It is thought that some of the larger enclosed depressions in the Burren began to form when the area was still covered by shale (Fig. 2). A river or rivers flowing over the shale eventually cut down into the limestone underneath. This river would have been diverted underground through the permeable limestone rock. Once a small window of limestone was exposed, the depression, or doline, would have gradually enlarged by dissolution from surface waters flowing off the shale onto the limestone. The Carran Depression is one of the oldest landscape features in the Burren landscape. Geologists think that the depression may have started to develop millions of years before the last ice age, which began almost 2 million years ago.

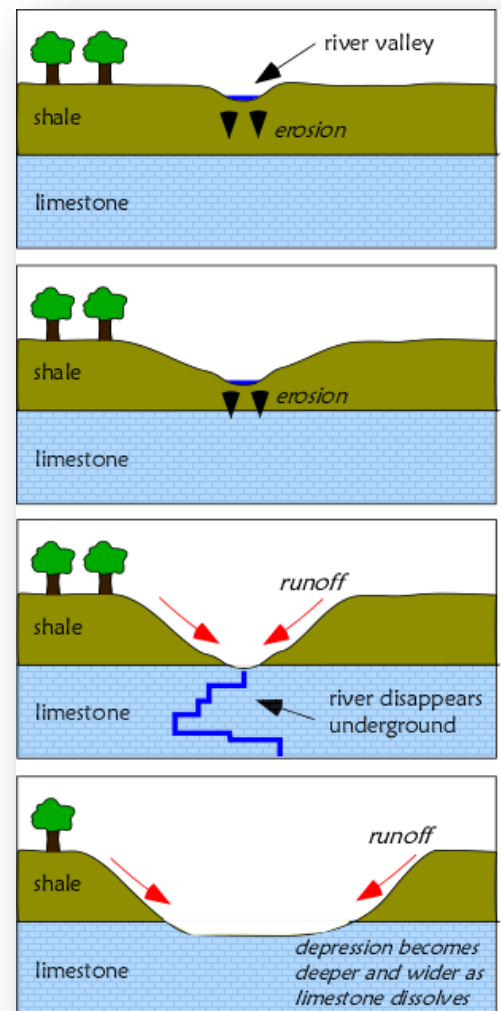


Fig. 2 Stages of how a doline develops