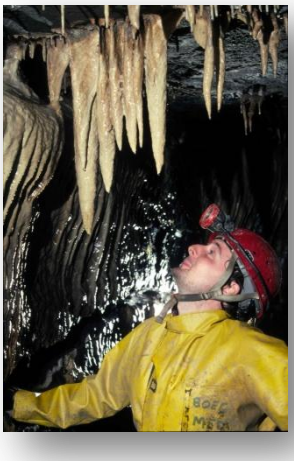
Geology Sheet 12

Caves and Springs; water flowing underground



When rain falls on the Burren limestone most of it flows into the numerous grikes and goes underground very quickly. Springs occur throughout the Burren wherever underground streams encounter a layer of rock that is impermeable. Examples of such layers include the thin bands of mudstones that lie in between the limestone beds, or layers of chert (Fig. 1).

The Carran ‘turlough’ is an example of a perched lake: The permanent water table lies 100 metres below the floor of the Carran depression. This is because the floor of the depression is covered by mud and the underlying limestone contains many bands of impermeable chert which does not let water seep through easily after prolonged rainfall. The water eventually drains through a sinkhole at the southern end of the turlough.

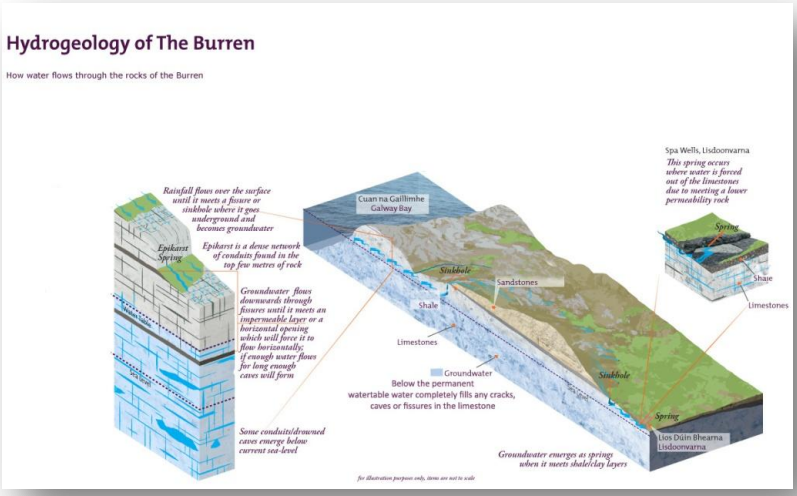


Fig. 1 How water flows in the Burren.

Caves form when water dissolves through the limestone - and over time enlarges the dissolution cavities to form caves and caverns. As water drips through the roof of the cave, stalactites, stalagmites, flowstones and columns form from calcite. These features are called speleothems.

Groundwater in the Burren is classified as ‘highly vulnerable’ because any contaminants that may get into the water will flow very quickly to springs or wells.